

AN ABSTRACT OF THE THESIS OF

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Title: Farmer Perspectives on the Transition to Organic Agriculture: An Oregon Study of
Farmer Motivations and Barriers

Abstract approved:

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In the midst of double-digit growth in market demand for organic products, there is a lag in the growth of certified organic production in the United States. This thesis investigated the motivations and barriers farmers face when making the transition to organic agriculture. Three distinct organic farmer typologies were identified: *Beginning Organic Farmer*, *Experienced Farmer Beginning Organic* and *Experienced Organic Farmer*. Using survey research and case studies, this thesis combined quantitative and qualitative research methods to explore farmer perspectives from each typology. Experienced Farmers Beginning Organic were more motivated to transition by tangible, economic factors than Beginning and Experienced Organic Farmers who were motivated by more conceptual, ideological reasons. Obstacles to organic transition were categorized into four groups: economic, production, market and social obstacles.

Farmers from each typology agreed that economic factors and some production issues were obstacles to the transition to organic agriculture. The majority of obstacles were considered externally influenced by factors off the farm including policy, market dynamics and foreign affairs. Variances in perception of obstacles between farmer typologies were highlighted. Findings improve understanding of farmer motivations and challenges to organic transition. Recommendations include differentiation of research, education and policy based on farmer typology.

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Farmer Perspectives on the Transition to Organic Agriculture: An Oregon Study of
Farmer Motivations and Barriers

by
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I understand that my thesis will become part of the permanent collection of Oregon State University libraries. My signature below authorizes release of my thesis to any reader upon request.

Deanna M. Lloyd, Author

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CHAPTER I: INTRODUCTION

This study investigates the motivations encouraging, and challenges faced by, Oregon organic farmers transitioning to organic production. Both quantitative and qualitative methods were used to gain a rich understanding of the topic with each methodology enhancing the findings of the other. By gaining insight into farmer perspectives on organic transition, my goal is to contribute to the national conversation about how to encourage more farmers to transition while ensuring their success.

Manuscript Format

This thesis is presented in manuscript format, containing two manuscripts in addition to a comprehensive literature review and a brief concluding chapter. Both manuscripts focus on farmer motivations and challenges to organic transition, but each applies a distinctive method of research and presents the relevant literature, methods, results, discussion and conclusions. Because of this, there is repetition of information between chapters. In particular, the literature cited in the comprehensive literature review may also appear in the manuscripts. Background information introducing the participants and study area will also be similar between manuscripts.

Thesis Outline

This thesis has five chapters followed by the references cited and appendices sections. Chapter one provides an introduction and orientation to the thesis.

Chapter two presents a comprehensive literature review. The chapter begins with a history and definition of the organic movement followed by the current statistics of organic products and production in the United States. An overview of the organic transition process is next, followed by the main focus of this research: farmer motivations, farmer types and challenges to organic transition. The chapter concludes with a discussion of the wider implications of organic transition.

Chapter three and four are presented as manuscripts. Chapter three presents farmer motivations and challenges highlighted through quantitative research. Qualitative methods are utilized to determine the farmer motivations and challenges presented in chapter four, which also includes six case study narratives, accompanied by photographs, from the farms that participated in the qualitative research.

Chapter five is a brief general conclusion and synthesizes the information presented in the two manuscripts.

CHAPTER II: LITERATURE REVIEW

This chapter contains a broad review of the literature regarding farmer transition to organic production. The chapter opens with a general overview of the history of the organic movement followed by the current status of organic production and demand. Next, an overview of the transition process is provided followed by information regarding farmers and their motivations to transition to organic. The chapter concludes with an examination of the literature on barriers and challenges farmers face when transitioning to organic.

History and Definition of Organic Certification

The organic agriculture movement in its present form can trace its roots to the first half of the 20th century with the writings of Rudolf Steiner, Sir Albert Howard, Lady Eve Balfour and Jerome Rodale (Heckman, 2006; Youngberg and DeMuth, 2013). In the 1960s and 1970s, the ideology of organic agriculture coalesced around a set of farming techniques plus tenets for how to live in a world of finite resources (Youngberg and DeMuth, 2013).

With the United States Department of Agriculture's 1980 *Report and Recommendations on Organic Farming*, a heated national debate was triggered about the merits of organic farming and the consequences of "conventional" farming (Youngberg and DeMuth, 2013). "Conventional agriculture" was defined by Knorr and Watkins (1984) as "capital-intensive, large-scale, highly mechanized agriculture with monocultures of crops and extensive use of artificial fertilizers, herbicides and pesticides,

with intensive animal husbandry.” A more recent and quite broad description of “conventional agricultural” was provided by Kristiansen and Merfield (2006):

The commonly used term ‘conventional agricultural’ refers to the standard, dominant farming approaches promoted and researched by most government and agribusiness groups and practiced by farmers and growers throughout the world. Usually, conventional agriculture imposes no restrictions on management other than those required by law. (p. 3)

The 1980s can be described as an “era of recognition” for the organic agriculture movement when national awareness and published research on organic and sustainable agriculture increased along with the debate about its merits (Heckman, 2005). This decade was rife with political struggle to expand organic research and legitimize the benefits of organic production practices (Youngberg and DeMuth, 2013). As this struggle continued, organic agronomic principles and their results became more of a focus than did the ideologies underlying the organic movement.

The “era of recognition” would culminate in 1990 when the Organic Foods Production Act was introduced in Congress as part of that year’s Farm Bill. The Act outlined an organic certification program to ensure the word “organic” was being used only to denote products grown in a certain way. The designation would reserve price premiums for those willing to adhere to specific organic agricultural tenants and give the food-consuming public a better understanding of the product they were purchasing. Due to debate about its implementation, another 12 years would pass before a national certification program was enacted (Youngberg and DeMuth, 2013).

On October 21, 2002, the USDA Organic standards and label were unveiled ushering in a new era of definition and regulation that has led to organic labeling, price

premiums and consumer awareness. The international food standards known as the Codex Alimentarius, provides a general definition of organic production:

Organic agriculture is a holistic production management system which promotes and enhances agroecosystem health, including biodiversity, biological cycles, and soil biological activity. It emphasizes the use of management practices in preference to the use of off-farm inputs, taking into account that regional conditions require locally adapted systems. This is accomplished by using, where possible, cultural, biological and mechanical methods, as opposed to using synthetic materials, to fulfill any specific function within the system. (WHO and FAO, 2007)

Organic agriculture gained mainstream traction and the debate turned toward potential “conventionalization” of organic by the big-food industry (Best, 2005; Heckman, 2005; Youngberg and DeMuth, 2013). Looking to profit from the fastest growing sector of the food industry, larger farms and corporations entered the organic market. Many worried this “conventionalization” of organic would lead to compromises and the dilution of the standards (Best, 2008).

The conventionalization of organic continues to worry ideologically motivated farmers who are concerned about the possible weakening of standards. Fear of conventionalization also fuels the deeply philosophical debate between organic advocates on how to increase organic production, without compromising principles. Stalwart proponents of organic feel the standards have been co-opted by industry and do not address the ideology originally underlying organic. Others feel that even if farmers are transitioning only for monetary gain, it is still a step in the right direction because it means less negative impact on the environment.

As the debate continues, the fact remains that there are currently not enough domestic organic farmers to meet increasing consumer demand (Greene, 2013; McBride and Greene, 2015). Potential exists to increase local economic development and reduce

the environmental impacts of agriculture through transitioning more farmers to organic methods. Additionally, the increased interest and demand for organic products has the potential to lead to more research and emphasis on sustainable practices which can lead to overall benefits for human health and the environment (Heckman, 2006).

Market Demand for Organic

Market demand in the United States for certified-organic products has shown double-digit growth almost every year since the implementation of the National Organic Program and the introduction of the “USDA Organic” label in 2002. In 2014, certified organic food sales increased 11% totaling \$35.9 billion while non-food sales increased 14% to \$3.2 billion. In 2015, growth in the organic sector again increased by nearly 11% adding \$4.2 billion in sales, its largest dollar gain ever, for a market total of \$43.4 billion. Nearly 5% of US food sales are certified organic (Organic Trade Association, 2016).

Despite the growth in market demand, there is a lag in the growth of domestic certified organic production. Less than 1% of total US cropland was certified organic in 2011 (Greene, 2013). Focusing in on organic field crops, there is a similar statistic with organic corn, wheat and soybeans making up less than 1% of the total acreage of each crop. The USDA points out that despite the profit potential of field crops, organic acreage of these crops remains low (McBride and Greene, 2015).

Focusing on the state of Oregon, the 2014 Organic Survey indicates there were a total of 203,555 certified organic acres and 525 certified organic farmers. This accounts for 5.6% of U.S. certified acreage and 3.7% of its farms (USDA, 2016). Oregon ranked fifth in certified organic acreage after California, Montana, Wisconsin and New York and

ranked ninth in the number of certified organic farms (USDA, 2016). According to the 2015 Organic Production Survey, there was actually a 14% decrease in Oregon organic acreage with 175,675 acres of certified organic farmland (USDA, 2016).

Transition Process

To transition acreage to certified organic from conventional production, the United States Department of Agriculture's National Organic Program (NOP) mandates a three-year transition period. This period requires that farmers comply with all organic regulations, abstain from using inputs prohibited by the NOP and create an organic system plan detailing the practices and procedures used by the farm to produce organic goods (US Government Publishing Office, 2016). As the three-year transition concludes, producers can then apply for certification with a certification agency, undergo a farm inspection, have their application reviewed, take part in a resolution process if necessary and finally receive certification (Oregon Tilth, Inc., 2016). Until successful completion of all aforementioned steps and certification is awarded, producers are prohibited from using the word "organic" or any organic logos when marketing their product.

With a new way of farming comes a new way of thinking. Transitioning farmers can fall into two management groups, those following an input substitution paradigm and those who engage in system redesign. Input substitution relies on the notion of control of nature with farmers substituting organic approved materials, fertilizers, and pesticides for previously used conventional options. This way of converting involves less commitment to organic philosophy with the option to revert being easier (Lamine and Bellon, 2008).

A more holistic approach to the organic transition involves system redesign. In this instance, the farm is looked at as a whole, with all inputs and outputs, external factors and internal factors, influencing the farming operation. This process can require more upfront cost, effort and commitment, but can result in a more self-sustaining farming operation. Since organic farming is a complex system, diffusion and adoption of this holistic approach is much slower than other studied agricultural innovations that typically are focused on a singular technique (Padel, 2001).

In addition to the mindset with which producers approach transition, there are considerations regarding the scale and time taken to transition. DiGiacomo and King (2015) identified four transition strategies used through the *Tools for Transition* project. “Full” transition involves transitioning crops, land and livestock all at the same time. A “gradual” approach involves transitioning one parcel at a time with the intention of eventual certification for all whereas a “split” operation has some land managed conventionally and some organically. While the three-year transition period is required for land that has been worked conventionally in the previous three years, the fourth approach is the “immediate” transition. This involves immediately certifying land that has been fallow or under conservation easement for at least the previous three years. This approach results in minimal to no transition time and immediate opportunity for organic certification.

While immediate certification can result in the opportunity for receiving organic premiums straightaway, there is still a learning curve that results from going from conventional to organic production. Lamine (2011) identified three main phases of learning and practice along a farmer’s trajectory from conventional to organic production.

First, is the phase of input reduction or efficiency while still in conventional production. Second, is a phase of substitution when conventional inputs are replaced by organic or biological inputs. Third, is the phase of system redesign when farmers gain experience in organic farming and begin rethinking their production methods.

Farmer Motivations

There are many reasons a farmer may or may not wish to transition to organic production. The literature focuses on comparative studies based on farmer values, experience and types.

Comparative studies have focused on how differences in farmer values, paradigms and perspectives played a large role in the decision to farm organically (Best, 2008; Beus and Dunlap, 1990; Cranfield et al., 2010; Stofferahn, 2009). These studies examine the attitudes of organic farmers or compare organic to conventional farmers, sometimes differentiating between those who are considering transition. In addition, many have noted differences between “early adopters” of organic compared to those who have more recently transitioned to organic (Best, 2008; Lund et al., 2002; Lund et al., 2002; Padel, 2001; Stofferahn, 2009). While numerous categories and comparisons have been made, an overarching distinction has been found between economic-motivated farmers and values-motivated farmers.

Beus and Dunlap (1990) exposed six distinct differences between “alternative” and conventional growers. Looking at contrasting paradigms, they found that conventional growers identified with the first item of each of the following contrasts with alternative growers identifying with the second item of each contrast: 1) centralization vs.

decentralization, 2) dependence vs. independence, 3) competition vs. community, 4) domination of nature vs. harmony, 5) specialization vs. diversity, and 6) exploitation vs. restraint. Stofferahn (2009) built on the alternative-conventional agriculture paradigm scale of Beus and Dunlap (1990) to confirm that environmental-ethical reasons are key identifiers for organic farmers compared to conventional growers.

Examining certified organic and transitioning operations in Canada, Cranfield and associates (2009) surveyed 145 vegetable and dairy producers. Principal motives for transition fell into the broad categories of health/safety concerns and environmental issues while economic motives were of lesser importance. In Norway, Flaten and associates (2006) studied 161 organic dairy producers comparing early entrants to organic farming (those who converted in 1995 or earlier), midconverters (those who converted in 1996 – 1999) and newcomers (those who converted in 2000 or later). While all groups ranked environment-friendly, sustainable farming and the production of high-quality food as their highest goal, financial and profit-related goals were more often cited among later converts as motivators with a general trend toward being more pragmatic and business-oriented. Both in West Germany and Sweden, a similar categorization of farmers based on year transitioned was used and found that recent converts showed a decline in environmental concern with an increased orientation toward business and financial concerns (Best, 2008; Lund et al., 2002). Other differences highlighted in Germany between early and late adopters of organic include late adopters having larger, more specialized farms while early adopters have more diverse farming operations (Best, 2008).

Farmer Types

Grouping organic farmers based on their motivations, attitudes and decisions has provided opportunity to define farmer types and the rationale motivating certain behavior (Darnhofer et al., 2005; Fairweather, 1999; Schoon and Te Grotenhuis, 1999). These works have been frequently cited and have policy, education and outreach implications for those looking to increase the number of farmers who transition to organic.

Fairweather (1999) interviewed 83 New Zealand farmers (both organic and conventional) to determine their motivations and reasons behind their decision-making. This work resulted in categorizing farmers into six types:

1. organic hopefuls
2. frustrated organic
3. pragmatic organic
4. committed organic
5. conventional farmers who have never considered organic
6. conventional farmers who have seriously considered organic

Also in 1999, Schoon and Te Grotenhuis identified Dutch farmers as either idealistically motivated or pragmatically motivated. Importantly, within both organic and conventional farmer groups, the researchers found farmers were motivated either by their strong convictions or their rational approach to farming as a business.

Building on the categories created by Fairweather (1999) and School and Te Grotenhuis (1999), Darnhofer et al. (2005) used a decision-tree with Austrian farmers to define five farmer types based on strategies and values. This oft-cited spectrum of farmers includes:

- committed conventional
- pragmatic conventional
- environment-conscious but not organic
- pragmatic organic
- committed organic

Understanding that farmers fall along a spectrum, influenced by their attitudes, experiences and motivations is an important consideration for agricultural policy and organic development and outreach efforts (Darnhofer et al., 2005; Padel, 2000).

Barriers and Challenges to Transition

Even with a willingness to learn a new approach to farming along with the market, values or ethics-oriented inclination to transition to organic, there are still multiple challenges and barriers, whether real or perceived, farmers may face (Cranfield et al., 2010; Johnson, 2010; Lau et al., 2010; Strohlic and Sierra, 2007; Veldstra et al., 2014). Analyzing the literature, barriers and challenges to organic transition fall into three broad categories:

- 1) economics
- 2) production
- 3) marketing

Barriers and Challenges: Economic

Economics is often cited as a barrier to making the transition to organic production. Challenges include financial hardship during the three-year transition period, certification and inspection expenses, high labor costs and the difficulty in quantifying success simply through yield and income.

During the three-year transition period, farmers face the expenses associated with organic production, but cannot market their produce as “organic.” This results in lower price premiums than certified crops and can create financial hardship during those transition years. The ability to market products as “transitional” is one possible solution

to helping producers obtain higher premiums than conventional counterparts (Klonsky and Greene, 2005).

Additionally, going through the certification process is a cost both in time and for the fee to receive inspection and certification. Veldstra and associates (2014) determined the actual process of certification is discouraging farmers who are still adhering to production principles of organic, from certifying. In reality though, while \$19 million dollars was spent on organic certification expenses in 2014, that was less than 1% of the total production costs expended by organic farmers that year (USDA, 2015). To support transitioning and certified-organic farmers, the US currently offers an organic certification cost share reimbursement of up to 75% the cost of certification, with reimbursement not exceeding \$750 per year (USDA AMS, 2015).

With organic production, hand or mechanical weeding is used instead of synthetic herbicides and the substitution of labor for synthetic chemicals can increase labor costs and influence the scale of operation that can transition. The 2014 Organic Survey (USDA NASS, 2015) noted that hired labor was the second highest production expense for organic farms, with animal feed being first. Out of the \$4 billion that organic farmers spent on production costs that year, \$917 million, or 23%, went to hired labor (USDA NASS, 2015). Duram (2000) noted that Illinois organic farmers did not perceive labor shortages or problems and often worked with family or hired local youth for part-time work. Many of these farmers expressed satisfaction at being able to hire local people and contribute to the local economy. On the other hand, focus groups of southern Oregon farmers said they needed skilled, year-round workforce, but that labor was expensive and it was challenging to find affordable worker housing (Stephenson et al., 2012).

Another aspect of the cost equation is the need for crop rotations and diversity in organic cropping systems. This can result in producers raising crops that have either no market value or receive a minimal premium (Klonsky and Greene, 2005). These crops can still provide benefits to the farm through increased soil fertility and decreased incidence of disease and pests, but these outcomes are hard to quantify.

Whether approaching conversion through the lens of input substitution or system redesign, losses during transition can be discouraging. During transition, operations with higher-input levels before transition tend to have a more substantial reduction in yield than operations with lower inputs (Lamine and Bellon, 2009). While studies cite yield losses as major challenges or disincentives to transitioning (Strochlic and Sierra, 2007; Johnston, 2010; Lau et al., 2010), it has been suggested that after conversion, the increased experience and knowledge of the producer can result in an increase in yields. Indeed in 2000, following a comprehensive review of comparative economic studies in Europe, Offermann and Neiberg (2000) concluded that, on average, farmers making the transition to organic were financially successful. Adding to this body of evidence, Delbridge and associates (2011) analyzed farm performance during the transition to organic for Minnesota production systems. Looking at 18 years of farm management and crop yield data revealed that organic production systems of corn and soybean were more profitable and carried less risk of low returns than conventional system. Building on this analysis, planning tools were created that allow farmers to look at ratios comparing transitional and organic yields to average conventional production in the state (Delbridge et al., 2015). Knowing this information provides data and decision-making tools for producers considering transition. Currently, this is the only tool with this level of

research-based detail and specific information creating the opportunity for additional research in other regions and with other production systems.

The financial burden of transitioning to organic can be intimidating, but organic farming is multi-targeted in its aims, so the true costs and benefits can be difficult to assess from a purely economic standpoint. In many studies, organic farming is evaluated solely through yield, and benefits, such as improved environmental health and product quality, do not factor into the analyses (Lamine and Bellon, 2009). Accounting for these other factors can provide a more holistic understanding of the true costs of organic transition and production.

Barriers and Challenges: Production

As noted above, there are different approaches to transitioning to organic production. Depending on their situation, farmers can do a full, gradual, immediate or split transition as well as approach their transition with the mindset of either a system redesign or input substitution. Depending on the farmer's experience and the crop produced, different production challenges may be encountered. Interestingly, many technical production techniques and factors "internal" to the farm were perceived as less of a barrier than factors "external" to the farm such as the organic market and policies (Cranfield et al., 2009; Sahm et al., 2012; Stephenson et al., 2012).

In the literature on production challenges, studies have compared the perception of production barriers of organic or transitioning farmers to those of conventional farmers (Johnston, 2010; Lau et al., 2010; Sierra and Strohlic, 2007). Other studies have examined only the perceptions of certified organic farmers (Cranfield et al., 2009;

Stephenson et al., 2012) while some studies focused on deregistered farmers or those who reverted to conventional (Koesling et al., 2012; Sahm et al., 2012).

Studies show that conventional farmers with no interest in transitioning to organic perceive production challenges as more severe than organic farmers who are working in those production systems (Johnston, 2010; Lau et al., 2010). Examining farmers in New York, Johnston (2010) reports that of conventional farmers with an interest in some level of organic production, 39% identified disease-related production losses as a severe barrier to organic transition while 57% of conventional farmers with no interest in organic noted this as a severe barrier. In contrast, only 6% of organic or transitioning farmers identified disease-loss as a severe barrier. Throughout the study, Johnston (2010) sees the trend of conventional farmers identifying more severe barriers to transition than the farmers who are already certified organic or are actively transitioning.

Focusing on farmers in organic production or transition, weed management is the agronomic issue consistently noted as a significant challenge (Cranfield et al., 2009; Lau et al., 2010; Sahm et al., 2012; Stephenson et al., 2012). Categorizing respondents by production system yields more informative results showing that indeed weed management is the most significant challenge for plant-based production systems, but that input availability and cost are more challenging for livestock and dairy producers (Lau et al., 2010; Stephenson et al., 2012).

Reduced yields are a discouraging prospect to those considering transition (Johnston, 2010; Lau et al., 2010). Data show reduced yields with organic production (McBride and Green, 2015), but is not a highly ranked obstacle for Canadian organic

producers (Cranfield et al., 2009). Only 26% of 408 organic growers in the Pacific Northwest ranked yields as a barrier to production and profitability (Stephenson et al., 2012).

Limited technical assistance specific to organic production is a recurring barrier to transition (Cranfield et al., 2009; Duram, 1999; Johnston, 2010; Strohlic and Sierra, 2007) and more university research on organic challenges would be useful (Johnston, 2010). Strohlic and Sierra (2007) note the literature views this barrier includes: limited access, and thus availability, of technical assistance for organic producers, limited awareness of how to access assistance when available, discouragement of organic production by traditional sources of technical assistance and high cost of technical advice from private entities. When 10 Oregon State University researchers involved in organic agriculture were interviewed about organic research needs, not only did technical production topics arise, but also the need to determine effective and appropriate ways to keep information up-to-date and disseminate it to all experience levels of farmers (Stephenson et al., 2012).

Barriers and Challenges: Marketing

If farmers can manage their cost and production challenges, marketing and economic barriers are the final hurdles to a successful operation. Examining studies from across Europe, Sahm et al. (2012) determined that economic problems are the main reason farmers revert from organic back to conventional production.

Market barriers and challenges can be divided into two spheres of influence. First, there are farm-scale market factors that are directly influenced by the farm and farmer

such as distance to nearest market, avenues of promotion, business management skills and proximity to organic processing facilities (Cranfield et al., 2009). While these are definite challenges, larger external market factors such as governmental policies, trade regulations, market prices and the influence of industrial food corporations make up the next sphere of market barriers and can be significant impediments to organic production (Cranfield et al., 2009).

Currently, there are no federal programs in the U.S. that incentivize the transition to organic production and the National Organic Program explicitly does not promote organic systems as better than conventional (Strochlic and Sierra, 2007). In contrast, in the European Union, organic production is viewed as one way to mitigate environmental concerns and thus has been supported through various programs including market-based policies promoting price premiums and “green” payments for organic conversion. While national incentives are yet to be implemented, there are examples of state-based programs (Minnesota Department of Agriculture, 2015) and encouragement from private businesses such as Organic Valley.

Narrowing down to the farm-scale, market challenges can include: lack of marketing networks, lack of farmer interest or ability to aggressively market their products, difficulty obtaining organic price information and geographic isolation or distance to available market (Cranfield et al., 2009; Johnston, 2010; Lau et al., 2010; Strochlic and Sierra, 2007). Johnston (2010) notes organic product buyer directories, local/regional market development and consumer education about organic are services farmers identify would be useful to tackle some of these farm-scale market challenges.

Obtaining adequate yet competitive prices for organic products is a barrier that is affected by both farm-scale and large-scale market influences. Critics of conventional farming systems claim the true costs of conventional production systems are “externalized” and is thus one reason conventional food is cheaper than organic. This externalization means the negative impacts on health, the environment and society are not reflected in the cost of the food and, in fact, may even be subsidized. Reganold and Wachter (2016) reviewed studies on both conventional and organic farming in relation to four key sustainability metrics: productivity, environmental impact, economic vitality and social wellbeing. If conventional farming accounted for its impact on these systems, the price of conventional products would reflect their true cost and potentially the difference in price between conventional and organic produce would be smaller.

Barriers and Challenges: Social

Historically, organic farming has had a tumultuous relationship with the agricultural sector. Organic farming was promoted through contrast and criticism of conventional farming resulting organic farming being seen as an attack on rural values (Padel, 2001). For experienced conventional farmers, moving to organic practices requires a shift that can strain family and social networks (Duram, 1999). Older generation farmers may have an unwillingness to adopt new techniques, negative pressure from other farmers can be ostracizing and there may be reluctance to turn away from established markets and relationships (Cranfield et al., 2009; Duram, 1999; Strohlic and Sierra, 2007). For some, there is a fear that by shifting to organic, they are admitting to themselves, their family and their community that the conventional methods

they have been using are inferior and have potentially even been detrimental (Duram, 1999). This shift in social perspective and self-identity can be a significant barrier to overcome.

Wider Implications of Organic Transition

According to a U.S. National Academy of Sciences report (2010), any farm, whether organic or not, can only be deemed sustainable if it produces adequate amounts of quality food, enhances the environment and resource-base, is economically viable and promotes the well-being of farmers and their community. An interdisciplinary approach to agricultural research and analysis was suggested by the report to better understand the connections and relationships between different farming systems and the four key areas of sustainability.

In 2016, Reganold and Wachter analyzed studies across multiple disciplines and determined if organic farming contributed to the sustainability goals of production, environment, economics and social well-being. They concluded that when combined with other sustainable agricultural approaches, organic farming could feed the world while greatly reducing agriculture's impact on the environment.

More emphasis and promotion of organic farming as a part of a sustainable food system is an approach to increasing awareness and policy around organic transition. In order to scale up organic production, governmental policies could be used to actively promote and support organic transition and farming. With increased domestic organic production, substituting local products for those previously imported has the potential for substantial economic development on a local level (Swenson, 2009). A whole system

change to the way the inputs and externalities of organic versus conventional farming are accounted for in commerce would be an important strategy to encourage increased adoption of organic production (Norse and Tschirley, 2003; Reganold and Wachter, 2016).

The U.S. National Academy of Sciences report (2010) concluded an accelerated rate of progress toward more sustainable agricultural practices is needed to ensure adequate food supplies can be maintained amid the challenges of climate change and declining natural resources. For organic farming to play a more significant role in the move toward a more sustainable agricultural future, more farmers will need to be encouraged and supported to pursue the organic transition process.

CHAPTER III: FARMER TYPOLOGIES, MOTIVATIONS AND CHALLENGES IN THE TRANSITION TO ORGANIC AGRICULTURE

Abstract

Despite significant domestic market demand for organic products, there is a shortfall in domestic organic production. More farmers transitioning to organic production would help meet this consumer demand, provide increased economic opportunity and reduce agricultural impact on the environment. This study uses quantitative methods to investigate farmer perceptions on the transition to organic production among Oregon farmers. The analysis creates three categories of farmers based on their years of experience: *Experienced Organic Farmer*, *Beginning Organic Farmer* and *Experienced Farmer Beginning Organic*. Findings provide insight into farmers' reasons for transitioning to organic including economic/market motivations and ideological/philosophical motivations. Barriers and challenges to organic transition fall into three broad categories including economic, production and marketing obstacles. This study increases awareness about what may motivate or challenge the spectrum of transitioning and organic farmers with implications for research, education and outreach.

Introduction

Market demand in the United States for certified-organic products has shown double-digit growth almost every year since the implementation of the National Organic Program and the of the “USDA Organic” label in 2002. In 2014, certified organic food sales increased 11% totaling \$35.9 billion while non-food sales increased 14% to \$3.2 billion. Almost 5% of total US food sales are certified organic (Organic Trade Association, 2016).

Despite the growth in market demand, there is a lag in the growth of domestic organic production with only 0.83% of total US cropland being certified organic in 2011 (Greene, 2013). Farmers may be reluctant to transition their land and production systems to organic due to a number of obstacles, either real or perceived (Cranfield et al., 2009; Johnston, 2010; Lau et al., 2010).

Focusing on the state of Oregon, the 2014 Organic Survey indicates there was a total of 203,555 certified organic acres and 525 certified organic farmers. This accounted for 5.6% of U.S. certified acreage and 3.7% of its farms (USDA, 2016). In 2014, Oregon ranked fifth in certified organic acreage after California, Montana, Wisconsin and New York and ranked ninth in the number of certified organic farms (USDA, 2015). In 2015, there was actually a 14% decrease in Oregon organic acreage with 175,675 acres of certified organic farmland (USDA, 2016).

When transitioning acreage from conventional to certified organic production, the United States Department of Agriculture's National Organic Program requires a three-year transition period. During this time, farmers must comply with all organic regulations, abstain from using prohibited inputs, create an organic system plan and finally complete the certification process (U.S. Government Publishing Office, 2015).

DiGiacomo and King (2015) identified four transition strategies farmers can follow. "Full" transition involves transitioning crops, land and livestock all at the same time. A "gradual" approach involves transitioning one parcel at a time with the eventual goal of certification for all parcels whereas "split" operations have some land managed conventionally and some organically. "Immediate" transition is an option for land that has been fallow, under conservation easement or can be proven to have received no prohibited inputs in the previous three years. This latter strategy does not require the three-year transition period and can result in immediate certification.

As farmers transition, understanding their motivations, attitudes and decisions can help advocates better communicate and support their transition. Comparative studies have focused on how differences in farmer values, paradigms and perspectives influence

the decision to farm organically (Best, 2008; Beus and Dunlap, 1990; Cranfield et al., 2010; Stofferahn, 2009). An overarching distinction has been found between economic-motivated farmers and values-motivated farmers.

Taking these broad motivations and farmer decision-making into consideration, the literature shows farmers categorized along a spectrum of pragmatism to idealism (Darnhofer et al., 2005; Fairweather, 1999; School and Te Grotenhuis, 1999). The varying perspectives and motivations of farmers influence whether they approach transition with an input substitution paradigm or through system redesign (Lamine and Bellon, 2008). Farmers' paradigms, perspectives and approaches to transition then influence what challenges they may face during transition.

Reviewing the literature on farmer obstacles to organic transition and production, four broad categories of challenges can be extrapolated: economic challenges, production challenges, marketing challenges and social challenges (Cranfield et al., 2009; Duram, 1999; Johnston, 2010; Koesling et al., 2012; Lau et al., 2010; Sahm et al., 2012; Sierra and Strohlic, 2007; Stephenson et al., 2012). The perception of these challenges differs between conventional and organic farmers (Johnston, 2010; Lau et al., 2010).

Objectives

This study focused on better understanding the motivations and challenges Oregon farmers face when transitioning to organic agriculture. Objectives for this study included:

- Identify what motivates farmers to make the transition to organic agriculture
- Determine economic, production and marketing barriers and challenges that farmers face when transitioning to organic agriculture

Methods

Participant Selection

This study focuses on Oregon farmers who have recently transitioned some or all of their land to organic production and received organic certification. For this study, the term “organic” will refer to only *certified organic* farms, methods, inputs, etcetera and does not include farms that may practice organic methods but lack certification.

As part of their longstanding partnership, the Oregon State University (OSU) Center for Small Farms and Community Food Systems and the organic certifier Oregon Tilth, Inc., collaborated on this study. As a non-profit organization that focuses on education and advocacy in addition to certification, Oregon Tilth, Inc. is interested in learning more about what motivations, barriers and challenges farmers face with organic transition, so they can tailor their education programs and advocacy efforts to meet farmer needs. Similarly, the OSU Center for Small Farms & Community Food Systems is also interested in the research and educational needs of transitioning farmers.

Oregon Tilth, Inc. provided a list of all farms that were actively transitioning or had certified new land to organic between January 1, 2014 and July 31, 2015. During the same period of this study, the OSU Center for Small Farms & Community Food Systems and Oregon Tilth, Inc. were conducting a national transition survey of farmers in the Environmental Quality Incentives Program (EQUIP) through the Natural Resources Conservation Service (NRCS). To avoid confusing participants, the selection criteria were refined to exclude any farms that had participated in the national survey.

Farmer participants were selected utilizing purposive sampling, a type of non-probability sampling (Bernard, 2013). Purposive sampling is considered nonrandom

because participants are selected because of certain criteria. Purposive sampling is useful for exploratory research that is intended to generate new ideas that can later be tested (Salant and Dillman, 1994).

Additionally, only farms located in the state of Oregon were included in the sample to ensure data were not influenced by barriers, challenges and motivations that may be found in other states due to state specific regulations, policies or markets. Oregon is known for having a diverse and thriving agricultural economy and understanding motivations, barriers and challenges specific to Oregon can allow for targeted policy, regulations and research regarding organic transition in this state.

The final sample included 33 farms. Of these 33 farms, two declined to participate in the survey and one had incorrect contact information resulting in a final response from 30 farms.

Survey Research

To maximize the survey response rate, Salant and Dillman (1994) recommended a basic survey procedure that includes at least four separate mailings sent at specific intervals. Informed by this protocol, this study commenced with a similar procedure, but with timelines adjusted to avoid mailings during the winter holidays.

During November 2015, a letter of introduction to the survey and the questionnaire were mailed to the 33 farms. The introductory letter was crafted by Oregon Tilth, Inc. and introduced the OSU Center for Small Farms & Community Food Systems as a partner in research. The Oregon Tilth, Inc. education director and I both signed the letter. In addition, I signed a hand-written post-it note saying “thank you for helping me

with my research” and attached it to the introduction letter. Garner (2005) reports that a post-it note request results in significantly higher survey return rates than surveys without a post-it note message.

A reminder postcard was mailed two weeks after sending the introduction letter and survey. Four weeks after the postcard, another letter and copy of the questionnaire were mailed with another letter requesting participation. At this point, 24 surveys had been completed and returned. Follow-up calls commenced in January 2016 resulting in an additional six surveys being completed over the phone, bringing the sample size to 30 and the response rate to 91%

Survey Content

The questionnaire was designed to be short in order to improve response rate. It fit on one page with questions on both front and back. The questions are similar to those included on the previously mentioned national survey of organic challenges administered by OSU Center for Small Farms and Community Food Systems and Oregon Tilth, Inc. The questions were reviewed by the Oregon State University Survey Research Center to ensure no bias or ambiguity were present in the survey research tool.

The questionnaire had four distinct sections (Appendix A). The first section collected basic farm and farmer demographic information. The second section consisted of a list of motivations related to transitioning to certified organic production. The third and fourth sections asked about barriers and challenges to organic transition and production. In these sections, respondents were asked to indicate whether each factor was “a major obstacle,” “a minor obstacle,” “not an obstacle,” or “not applicable/not

sure.” For both the motivations and barriers and challenges sections, factors identified in published literature helped shape the questions (Cranfield et al., 2009; Johnston, 2010; Lau et al., 2010; Stephenson et al., 2012; Strohlic and Sierra, 2007). Finally, two open-ended questions were asked about what advice farmers had for those considering transition and if there were any additional comments about their transition to organic.

This study was conducted with approval from the Oregon State University Institutional Review Board to ensure the rights and welfare of the participants. Participation was voluntary with protocols utilized to protect identities. A research agenda and confidentiality agreement was also established between Oregon State University Center for Small Farms and Community Food Systems and Oregon Tilth, Inc.

Data Analysis

Data were compiled into and analyzed using IBM SPSS software. Consultation and guidance provided by the Oregon State University Statistics Department ensured proper statistical tests were utilized. Initial analysis utilized descriptive statistics including frequencies and cross tabulations to get a broad understanding of the data. Examining the three farmer typologies, Fisher’s exact test was used to compare a binary response among the groups. Usually this test is used to compare two groups, but it can be utilized in some instances to compare three groups. Emphasis is placed on the fact that Fisher’s exact test was used to detect significant differences in the proportion of responses, not to prove a hypothesis.

Study Constraints

The sample size is small. The statistical analysis was limited to those calculations most appropriate to small sample sizes. Given the selection criteria and the diverse nature of the sample population, purposive sampling was used which limits the extent to which the findings can be applied to other farmer populations. In particular, limiting the sample population to farms certified by Oregon Tilth Inc. did not take into consideration the viewpoints of farmers who utilize other organic certifiers. However, these farms represent a wide spectrum and similar motivations, barriers and challenges that may be found with other farms throughout the state and nation.

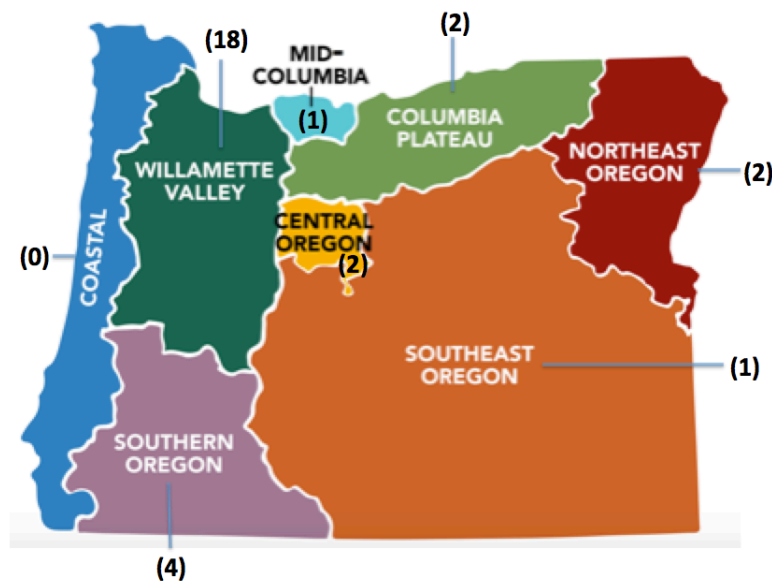


Figure 3.1 Number of survey respondents from each Oregon agricultural zone.

Image adapted from Oregon Department of Agriculture (n.d.):

<https://www.oregon.gov/ODA/shared/Documents/Publications/Administration/ORGrowingRegions.pdf>

Results

Study Population Characteristics

Oregon has a diverse agricultural economy partly because of the differences in bioregions throughout the state. The Oregon Department of Agriculture defines eight distinct agricultural zones (Figure 3.1). In western Oregon, the temperate Willamette Valley is a hub for agricultural productivity and contains the major population centers along with the majority of the surveyed farmers (60%). The other regions were less represented, but that may be due to fewer, but likely larger, organic farms operating in those areas.

While the “quintessential” organic farm conjures up images of a small, diversified vegetable operation, organic production incorporates a broad scope of farms and farmers. The farms surveyed ranged in size from one third of an acre to 4,000 acres. The most common production system was vegetables followed by tree fruit, nuts and berries (Table 3.1). While the majority of farms focused on only one type of production system, nine farms integrated two or more production systems (Table 3.2).

Table 3.1 Farm production systems

Production System	Number of farms with this production system*
Vegetables (includes vegetable seed and cut flowers)	12
Tree fruit/nuts/berries	9
Grain/legumes/forage	3
Livestock/dairy	4

*Total number of farms equals more than 30 due to some farms integrating multiple production systems.

Table 3.2 Number of farms with multiple production systems

# of production systems integrated on farm	Farms with this # of production systems
1	21
2	6
3	2
4	1

Of the 30 farms surveyed, 50% had their entire operation certified organic while 40% of respondents managed a split operation with part certified organic, part non-organic. Ten percent of respondents were in the process of transitioning all or part of their farm to certified organic, but had yet to receive certification.

Respondents range in age with 20% in the youngest group of 26 – 35 years old, 43% age 35 years or less and 47% identified as being 56 years or older (Table 3.3). According to the 2012 Census of Agriculture, the average age of an organic producer is 53.4 years (USDA, 2014). Unfortunately, comparison to this national number is not possible as continuous data were not collected for farmer age, but rather respondents identified within an age category.

Table 3.3 Age range of respondent farmers

Age range (years)	# of farmers in this age range	% farmers in this age range
26 to 35	6	20%
36 to 45	7	23%
46 to 55	3	10%
56 to 65	8	27%
66 to 75	5	17%

The numbers of years of farming experience ranged from 1 to 44 years. The United States Department of Agriculture defines a beginning farmer or rancher as an individual who “has not operated a farm or ranch, or who has operated a farm or ranch for not more than 10 consecutive years” (Ahearn and Newton, 2016). Using this definition, 13 respondents (43.3%) are beginning farmers.

Farmer Typologies

Three farmer typologies were generated based on the farmers’ number of years farming and the number of years experience with organic and conventional production.

Using the USDA definition of 10 years or less experience as the dividing line between beginning and experienced farmers, and using the same criteria for beginning or experienced organic farmers, the study population fell into three distinct farmer typologies when the “how many years have you been farming?” was cross-tabulated with “how many years farming have you been using ‘organic’ methods?” (Table 3.4).

Table 3.4 Farmer typologies and sample size

		Number of years farming using organic methods	
		0 – 10	11 or more
Number of years farming	11 or more	Experienced Farmer Beginning Organic (10 farmers)	Experienced Organic Farmer (7 farmers)
	0 - 10	Beginning Organic Farmer (13 farmers)	n/a

By cross-tabulating the data, a *Beginning Organic Farmer (BOF)* was defined as a farmer with 10 or fewer years of farming experience and who has been farming organically for that same period of time. An *Experienced Organic Farmer (EOF)* has been farming and farming organically for 11 or more years. The group of most interest for this study is the *Experienced Farmer Beginning Organic (EFBO)* who has 11 or more years of production experience, but who would be considered a beginning farmer regarding their organic farming experience. This clear division between producers and their experience allowed for more detailed analysis of demographics, motivations, barriers and challenges based on farmer typology.

The 13 farms in the Beginning Organic Farmer group have an average of 4.7 years of farming experience and the same number of years (4.7) of organic farming experience. The seven farmers in the Experienced Organic Farmer group have an average of 34.1 years farming experience and 27 years farming using organic methods. The 10 farmers in the Experienced Farmer Beginning Organic group have an average of 25.8 years farming experience, but only 3.7 years of organic experience (Table 3.5).

Table 3.5 Average years of farming and average years of farming using “organic” methods for each farmer typology

Farmer typology	Average years of farming experience	Average years of farming using “organic” methods
Beginning organic farmer (BOF)	4.7	4.7
Experienced organic farmer (EOF)	34.2	27.0
Experienced farmer beginning organic (EFBO)	25.8	3.7

There is a difference in the ages of the farmers in the different typologies. The EOF group includes six out of seven farmers (86%) who are over 56 years while the EFBO group has six out of ten (60%) who are over 56 years old. The BOF group has two farmers (15%) who are over 56 years old, but overall this group is younger than the other typology groups with nine of the thirteen farmers (69%) in under the age of 45 years and 38% under 35 years. This age difference is to be expected since the typologies are determined based on years of farming experience.

The average size of farm is notably different between farmer typologies. In very general terms, the more experience one has, the larger the farm though this is likely due to the cropping systems of the different farms. Nine of the ten farmers within the EFBO group have 100+ acres with an average 1,232 acres. The EFBO farms range in size from 30 – 4,000 acres.

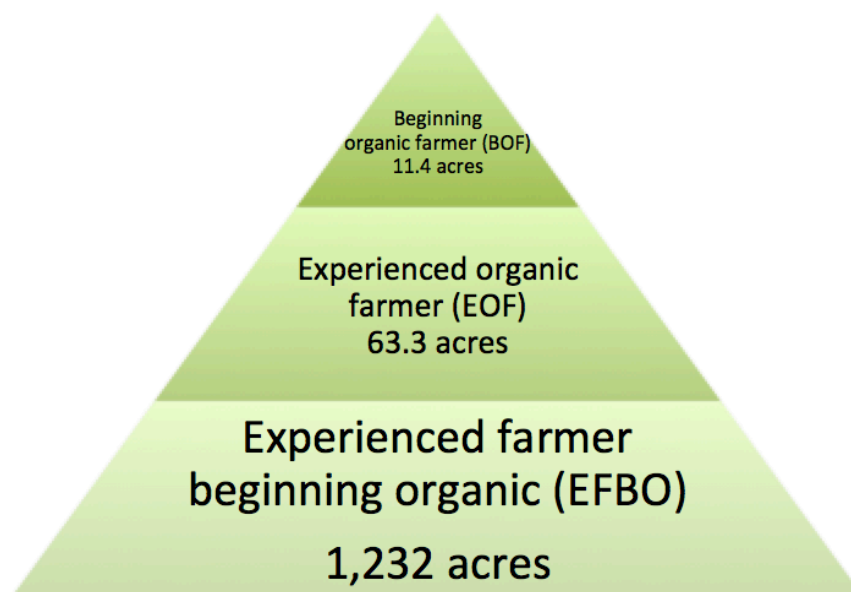


Figure 3.2 Average farm acreage for each farmer typology

The EOF farms range in size from 1 – 380 acres with the average size being 63.3 acres and only one farm having 100+ acres. The BOF farms range in size from 0.3 – 56 acres and have the smallest average farm size at only 11.4 acres (Figure 3.2).

Examining farm status with organic certification (Table 3.6), the BOF group had a high percentage of farms that had their entire acreage certified organic (77%) whereas the EFBO group had high percentage (70%) of respondents who operated split operations.

Table 3.6 Farm status with organic certification

Farmer typology	Entire operation certified organic	Split operation with part certified organic, part non- organic	Transitioning all or part of their farm to certified organic
Beginning organic farmer (BOF)	10 (77%)	3 (23%)	0 (0%)
Experienced organic farmer (EOF)	1 (10%)	7 (70%)	2 (20%)
Experienced farmer beginning organic (EFBO)	4 (57%)	2 (29%)	1 (14%)
Aggregate	15 (50%)	12 (40%)	3 (10%)

Farmer Motivations to Transition to Organic

Respondents were asked to consider when they first decided to pursue organic certification and to indicate whether or not each listed motivation was a factor in their decision to transition. For analysis, two broad categories of motivations were identified; motivations related to economic/market values and motivations related to ideological/philosophical values (Figure 3.3). Economic/market motivations included “potential increase in profit,” “access to expanding market for organics,” and “specific

market opportunity or contract from buyer.” Ideological/philosophical motivations were “concerns about human health,” “concerns about the environment,” and “fits my and/or my family’s values.” One motivation, “potential enhancement of farm sustainability” was considered during the analysis to be somewhat vague to be included in either category since the term “sustainability” has various interpretations. Participants were also asked to provide other motivating factors for transition. Aggregate and farmer typology responses to each motivation are recorded in Table 3.7.

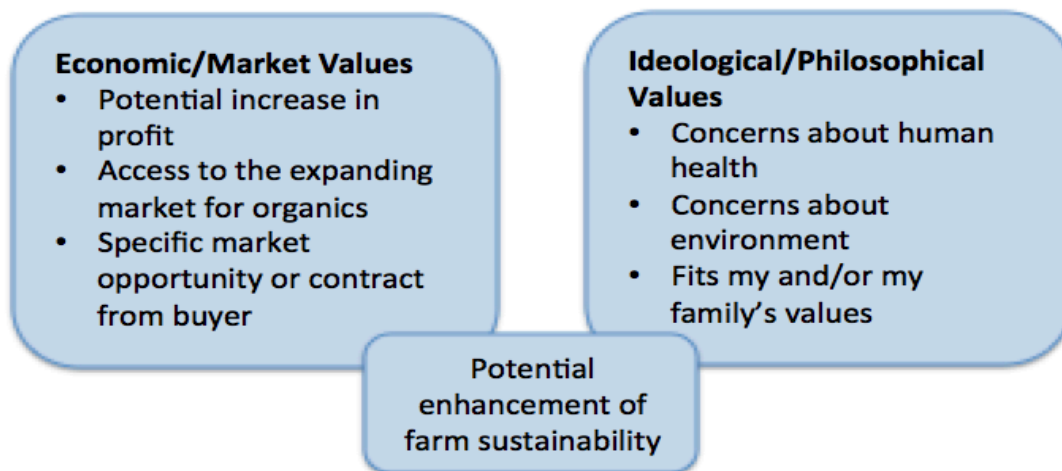


Figure 3.3 Farmer motivations to transition to organic

Examining the two categories of motivations, economic/market values were noted by the aggregate as less frequent motivations to transition than the ideological/philosophical values. When the respondents are separated by farmer typology though, the EFBO group expresses economic/market motivations more frequently than ideological/philosophical values. With 80% of the EFBO group indicating “Specific market opportunity or contract from buyer” as a motivation, this was the most commonly stated transition motivation for these farmers (Table 3.7).

Examining aggregate motivations, ideological/philosophical motivations appear to be significant for organic production and rank higher than any economic/market motivations. By examining these motivations by farmer typology, only one farmer in each of the BOF and EOF groups does not list these factors as important. For the BOF and EOF groups, these ideological/philosophical motivations were of more importance in their decision to pursue organic certification than economic/market factors.

Within the EFBO group, far fewer list the ideological/philosophical values as motivation to transition. This contrast in motivations can be seen with a statistically significant difference in the typology response to all three of ideological/philosophical motivations.

The “potential enhancement of farm sustainability” factor, which can incorporate both economic/market values and ideological/philosophical values, was the same as “fits my and/or my family’s value” factor as the most frequently noted motivation to transition for all farmers. The “fits my and/or my family’s value” motivation gains its ranking from the strong importance EOF and BOF farmers place on it, despite the EFBO group having a statistically different relation to this factor.

Other motivations to transition to organic offered by the farmers included “getting a new farm (EOF),” “changed farm business partnership (EOF),” “to have a voice (BOF),” and “sustainable nutrient cycling (EFBO).”

Table 3.7 Number and percentage of farmers indicating if a factor was a motivation in their decision to pursue organic certification

	Aggregate	Beginning Organic Farmer	Experienced Farmer Beginning Organic	Experienced Organic Farmer
	N=30	n=13	n=10	n=7
Fits my and/or my family's values	22 (73%)	12 (92%)	4 (40%)	6 (86%)
Potential enhancement of farm sustainability	22 (73%)	11 (85%)	5 (50%)	6 (86%)
Concerns about environment	21 (70%)	12 (92%)	3 (30%)	6 (86%)
Concerns about human health	20 (67%)	12 (92%)	2 (20%)	6 (86%)
Specific market opportunity or contract from buyer	18 (60%)	7 (54%)	8 (80%)	3 (43%)
Access to expanding market for organics	16 (53%)	6 (46%)	5 (50%)	5 (71%)
Potential increase in profit	15 (50%)	4 (31%)	7 (40%)	4 (57%)

Bold values significantly different at the $p < 0.05$ level between the responses of the Beginning Organic Farmer and Experienced Organic Farmer groups versus the Experienced Farmer Beginning Organic group

Barriers and Challenges in the Transition to Organic

Respondents were asked to indicate to what extent specific factors were obstacles to their transition to organic and/or organic production. Challenges were grouped into three main categories including cost, production and marketing. Choice of responses to each factor included “a major obstacle,” “a minor obstacle,” “not an obstacle” or “not applicable/not sure.” Due to the small sample, responses were grouped together for ease of analysis with “a major obstacle” and “a minor obstacle” responses indicating the factor to simply be an obstacle and “not an obstacle” or “not applicable/not sure” indicating a factor to not be an obstacle. Obstacles were first analyzed through aggregate data (Table 3.8) and then responses from each farmer typology were examined and compared (Table 3.9).

Table 3.8 Barriers to organic transition ranked

	Aggregate
	N=30
Cost of labor	22 (73%)
Record keeping requirements of organic certification	22 (73%)
Cost of organic certification	21 (70%)
Weed management	21 (70%)
Pest or disease control	18 (60%)
Cost of organic inputs*	16 (55%)
Learning process	16 (53%)
Availability of labor	16 (53%)
Managing soil fertility	14 (47%)
Finding buyers/market for my organic products	14 (47%)
Access to knowledgeable technical expertise on organic production	12 (40%)
Obtaining adequate prices during transition*	11 (38%)
Availability of organic inputs (seed, fertilizer, etc.)	11 (37%)
Availability of organic processing facilities	11 (37%)
Planning crop rotations	7 (23%)
Reduced yields	5 (17%)

* N=29 due to non-response

Barriers and Challenges: Aggregate

Fifty percent or more of the farmers ranked eight of the sixteen issues as obstacles to organic transition (Table 3.8). The most highly ranked barriers on the survey were “cost of labor” and “recordkeeping requirements of organic certification.” Both were identified as either a major or minor obstacle by 73% of farmers.

The “cost of organic certification” (70%) and “weed management” (70%) were the second most noted obstacles followed by “pest or disease control” (60%). Other obstacles noted by over 50% of farmers included “cost of organic inputs” (57%), “availability of labor” (53%), and “learning process” (53%).

Each economic barrier on the survey was highly ranked as an obstacle by the aggregate as demonstrated by the first, third and sixth highest ranked obstacles being related to costs. The other five obstacles noted by the majority of the aggregate were considered production challenges. No marketing challenges were identified as obstacles to organic transition by 50% or more of the farmers.

Five of the eight major obstacles noted by the aggregate could be considered external to the farmer. These obstacles (“cost of labor,” “recordkeeping requirements of organic certification,” “cost of organic certification,” “cost of organic inputs” and “availability of labor”) are influenced by factors beyond the farmers’ direct control including policies, market forces and international affairs.

Barriers and Challenges: Beginning Organic Farmers

The BOF typology ranked “cost of labor” (77%), “recordkeeping requirements of organic certification” (69%) and “cost of organic certification” (62%) as the highest ranked issues in the same order as the aggregate (Table 3.9). Also aligning with the aggregate was the BOF typology perception of “learning process” (54%) and “availability of labor” (54%) as obstacles. A majority of this typology ranked “access to knowledgeable technical expertise on organic production” (54%) as an obstacle whereas only 40% of the aggregate identified it as a challenge.

The challenges of “weed management,” “pest or disease control,” “cost of organic inputs” and “managing soil fertility” were noted by 46% of the BOF as obstacles. Similar to the aggregate, marketing challenges were not identified as obstacles by a majority of the BOF typology.

Of the six obstacles identified by over 50% of the BOF group, only one (“learning process”) could be considered internal to the farmers. The other five obstacles all relate to external factors that could be considered beyond the farmers’ sphere of influence.

Barriers and Challenges: Experienced Farmers Beginning Organic

Over 50% of the EFBO group identified 14 out of 16 issues as obstacles to organic transition (Table 3.9). The only challenges not noted by the majority were “access to knowledgeable technical expertise on organic production” (30%) and “planning crop rotations” (30%).

“Weed management” was acknowledged as major obstacle to organic transition by 100% of the EFBO group. There was statistically significant difference between the

EFBO response and the BOF response with only 46% of the BOF group identified weed management as an obstacle (Table 3.9).

“Reduced yields” was another obstacle with statistical significance between the farmer typologies. None of the BOF or EOF farmers noted reduced yields as a barrier, but 50% of the EFBO group did. Additionally, when the BOF and EOF groups were grouped together and compared to the EFBO group, “availability of organic inputs (seed, fertilizer, etc.)” was another barrier that though not statistically significant, had substantial differences in response. The EFBO group had 70% respondents highlight availability of organic inputs as an obstacle compared to only 14% of the EOFs and 23% of the BOFs. Other obstacles were not noted to be statistically significant between groups (Table 3.9).

Marketing obstacles (“finding buyers/market for my organic products,” “obtaining adequate prices during transition” and “availability of organic processing facilities”) were identified by the majority of the EFBO group in contrast to the other typologies and aggregate. Interestingly, 60% of the EFBO group noted “finding buyers/market for my organic products” as an obstacle, while 80% had listed “specific market opportunity or contract from buyer” as a motivation for transitioning to organic.

Barriers and Challenges: Experienced Organic Farmers

All seven of the obstacles highly ranked by over 50% of the EOF group were also highly ranked by the aggregate though in a different order (Table 3.10). The only obstacle that the majority of the aggregate identified that the EOF group did not was “learning process.”

Only two of the seven obstacles (“weed management” and “pest or disease control”) could be considered internal to farmers and their operations. The other five obstacles highly ranked by the EOF group could be considered external obstacles.

Table 3.9 Number of farmers within each typology ranking issue as a barrier

	Aggregate	Beginning Organic Farmer	Experienced Farmer Beginning Organic	Experienced Organic Farmer
Cost of labor	22 (73%)	10 (77%)	7 (70%)	5 (71%)
Record keeping requirements of organic certification	22 (73%)	9 (69%)	8 (80%)	5 (71%)
Cost of organic certification	21 (70%)	8 (62%)	7 (70%)	6 (86%)
Weed management	21 (70%)	6 (46%)	10 (100%)	5 (71%)
Pest or disease control	18 (60%)	6 (46%)	8 (80%)	4 (57%)
Cost of organic inputs*	16 (55%)	6 (46%)	6 (67%)	4 (57%)
Learning process	16 (53%)	7 (54%)	7 (70%)	2 (29%)
Availability of labor	16 (53%)	7 (54%)	5 (50%)	4 (57%)
Managing soil fertility	14 (47%)	6 (46%)	7 (70%)	1 (14%)
Finding buyers/market for my organic products	14 (47%)	4 (31%)	6 (60%)	2 (29%)
Access to knowledgeable technical expertise on organic production	12 (40%)	7 (54%)	3 (30%)	2 (29%)
Obtaining adequate prices during transition*	11 (38%)	3 (25%)	6 (60%)	2 (29%)
Availability of organic inputs (seed, fertilizer, etc.)	11 (37%)	3 (23%)	7 (70%)	1 (14%)
Availability of organic processing facilities	11 (37%)	3 (23%)	5 (50%)	3 (43%)
Planning crop rotations	7 (23%)	3 (23%)	3 (30%)	1 (14%)
Reduced yields	5 (17%)	0 (0%)	5 (50%)	0 (0%)

*N=29 due to non-response

Bold values significantly different at the $p < 0.05$ level between the responses of the Beginning Organic Farmer group versus the Experienced Farmer Beginning Organic group (for weed management) and the Beginning Organic Farmer and Experienced Organic Farmer groups versus the Experienced Farmer Beginning Organic group (for reduced yields)

Table 3.10 Barriers of concern for majority of each farmer typology

Rank	Aggregate	Beginning Organic Farmer	Experienced Farmer Beginning Organic	Experienced Organic Farmer
1	Cost of labor	Cost of labor	Weed management	Cost of organic certification
2	Recordkeeping requirements of organic certification	Recordkeeping requirements of organic certification	Recordkeeping requirements of organic certification	Cost of labor
3	Cost of organic certification	Cost of organic certification	Pest or disease control	Recordkeeping requirements of organic certification
4	Weed management	Learning process	Cost of labor	Weed management
5	Pest or disease control	Availability of labor	Cost of organic certification	Availability of labor
6	Cost of organic inputs	Access to knowledgeable technical expertise on organic production	Cost of organic inputs	Pest or disease control
7	Availability of labor	-	Learning process	Cost of organic inputs
8	Learning process	-	Managing soil fertility	-
9	-	-	Availability of organic inputs (seed, fertilizer, etc.)	-
10	-	-	Finding buyers/market for my organic products	-
11	-	-	Obtaining adequate prices during transition	-
12	-	-	Availability of labor	-
13	-	-	Reduced yields	-
14	-	-	Availability of organic processing facilities	-

Bold issues are those identified as obstacles common to all farmers

Discussion

This study focused on Oregon farmer perceptions of the motivations, barriers and challenges to organic transition. While the literature has identified differences in perceptions of motivations and challenges to organic farming between organic and conventional farmers (Johnston, 2010; Lau et al., 2010), by gathering and cross tabulating demographic data, this study identified distinct farmer typologies among organic producers. The clear delineation between the “beginning organic farmer (BOF),” “experienced organic farmer (EOF),” and “experienced farmer beginning organic (EFBO)” was a surprising finding and allowed for a more comprehensive interpretation of differing perceptions.

When farmers were asked to consider their motivations to transitioning to organic, differences between farmer typologies emerged. The BOF and EOF groups placed more emphasis on the ideological/philosophical motivators while the EFBO identified economic/market values as more significant motivators to transition. Surprisingly, a higher percentage of the EOF group was more motivated by access to expanding markets and the potential for increased profit than the EFBO group (Table 3.7). This may be attributed to the respondents falling along different levels of the farmer spectrum identified by Darnhofer et al. (2003). Following up with EFBO farmers after they have practiced organic techniques for a number of years could provide insight into whether farmer perceptions change once they have more experience using organic techniques. Further research is needed to determine whether concern for environmental and human health would increase after practicing organic methods, if economic and market values

would still dominate decision making for this typology and if they would maintain split operations or move all production to organic.

The potential enhancement of farm sustainability and fits my and/or my family's values were both ranked as the most frequently noted motivation for organic transition. The term "sustainability" could mean the economic and financial sustainability of a farm and business, the environmental and biological health of a farm or a holistic view of considering multiple factors. Without further clarification of this response, it is difficult to know what aspects of "sustainability" may be motivating farmers to transition and allows for further speculation and research.

When examining barriers to organic transition identified by the aggregate, eight obstacles were noted by more than 50% of farmers (Table 3.9). Of the eight obstacles, five could be considered externally influenced by factors outside the direct control of farmers such as policy, market dynamics and foreign affairs. These external obstacles included cost of labor, recordkeeping requirements of organic certification, cost of organic certification, cost of organic inputs and availability of labor. This aligns with the work of Stephenson and colleagues (2012) who found similar external obstacles were of major concern for organic farmers in Oregon.

Of the eight barriers highly ranked by the aggregate, each typology identified some as obstacles and others as not obstacles (Table 3.10). Four obstacles were consistently highly ranked across typology: cost of labor, recordkeeping requirements of organic certification, cost of organic certification and availability of labor.

The cost of labor was the most noted obstacle to organic transition with strong agreement between each typology. This aligns with the overall agricultural trend that

labor costs are a significant operational output. In fact, cost of labor was the second highest production expense for organic farmers according to the 2012 Census of Agriculture (USDA NASS, 2015). Out of the \$4 billion that organic farmers spent on production costs that year, \$917 million, or 23%, went to hired labor (USDA NASS, 2015). Nationally, labor expenses represent approximately 17% of total variable farm costs and up to 40% of costs in vegetables, fruits and other labor-intensive crops (USDA, 2014). This is a serious consideration for farmers examining the financial sustainability of their business and may influence their decision making around scaling up. As one EFBO noted, the future availability of farm labor may also become an obstacle and has been noted as a concern in the literature (Taylor et al., 2012).

The economic obstacles of cost of labor, cost of organic certification and cost of organic inputs were each highly ranked by all typologies. Organic certification is a cost only imparted on certified organic producers and each typology agreed this was an obstacle with 70% of the aggregate stating this was a barrier to transition. There is a federal subsidy available for farmers receiving certification, and this was utilized by some respondents with one stating, "...with the government cost share program, it [cost of certification] is not that expensive."

Cost of organic inputs has been noted in literature as a potential obstacle for organic farmers (Cranfield et al., 2010; Johnston, 2010; Lau et al., 2010) and over half of the aggregate (57%) noted this as an obstacle. Other cost-related obstacles noted by respondents included the cost of infrastructure and equipment. As an EFBO wrote, obtaining "no-till drill, chipping equipment, compost turner and wagon for compost"

were significant cost-related obstacles to transition. A BOF echoed this cost challenge noting the cost of “farm start-up and equipment” as a substantial obstacle.

Among production obstacles, weed management was highly ranked. This is definitely a challenge for all producers, but it was interesting to note that only 46% of the BOF group ranked this as an obstacle while 100% of the EFBO and 71% of the EOF noted it as a challenge. While it is understandable that weed management may be more of a challenge for the EFBO who have had to recently forego synthetic management options, there are other factors that may be contributing to this outcome. The BOF group may be working relatively new ground with a small weed seed bank that does not yet necessitate substantial management. Another possible explanation is farm size. The BOF group has the smallest acreage of the three typologies (averaging 11.4 acres), whereas, the EFBO group has the largest (averaging 1,232 acres). The more acreage to manage, the more difficult weed control can be. An EFBO managing 4,000 acres emphasized the importance of weed management and the land that is transitioned stating, “get ground that’s not ‘dirty’ with hard-to-control perennial weeds.”

Reduced yield has been identified as a concern for farmers considering the transition to organic (Cranfield et al., 2009; Johnston, 2010; Lau et al., 2010). While none of the BOF and EOF respondents identified reduced yields as a challenge, 50% of EFBO respondents did. This results in a statistically significant difference in the responses of the BOF and EOF groups versus the EFBO group (Table 3.9). Considering the EFBO group most recently transitioned, are coming from conventional production and may still be learning how to incorporate organic techniques, this response can be expected. Follow-up with these farmers after they have had more time to practice

organic techniques would be interesting to determine if yields stayed suppressed or if they rose with increased experience and/or changes in soil health as has been noted in the literature (MacRae et al., 1990; Smukler et al., 2008)

Within the EFBO group, 70% identified managing soil fertility as an obstacle, but only 47% of the aggregate noted it. Although many issues were greater obstacles for the aggregate, properly managing soil fertility and health is a key tenet of organic farming and its importance was emphasized when farmers were asked to share advice or comments about their transition. Soil health was the most frequently addressed issue after recordkeeping. Comments were remarkably similar and included “work on soil health first,” “invest in your soil first” and “there are few shortcuts to soil that is ready to grow!”

While weed management and cost of labor are challenges that could plague both conventional and organic farmers, recordkeeping requirements of organic certification is a challenge unique to organic production. This task was noted by all typologies as an obstacle, and when asked what advice they would share with transitioning farmers, respondents frequently addressed recordkeeping. As one respondent wrote, “The paperwork and inspections are still sort of on the steep part of the learning curve for me but I do feel the records the certifier require me to keep are pretty much all important in running a farm business.” The sentiment about paperwork being an obstacle, albeit an important and useful one, was echoed by other farmers stating, “I would say you should be keeping the records regardless of certification (if that is an obstacle)” and “Becoming certified has been good for my farming practices. It was an additional nudge to keep better records and be very deliberate about everything I do.” The difference in perception

of recordkeeping as an obstacle may be explained by farmers' preference for actual farming. Recordkeeping may be more of a philosophical obstacle because as one beginning organic farmer noted, "...my entire profits for 2015 go to pay to prove I don't use chemicals. Why should organic farmers bear the burden of proof?"

The majority of farmers did not perceive market obstacles, but these were important to the EFBO group. Finding buyers/market for my organic products, obtaining adequate prices during transition and availability of organic processing facilities were all noted by 50% or more of the EFBO group as barriers to organic transition.

More research on these typologies within larger organic producer groups could allow for a better understanding of the different motivations and barriers of transitioning organic farmers. To build a more robust understanding of these issues, expanding the sample size and increasing geographic inclusivity would be important. In the state of Oregon, the vast majority of organic farmers reside within the Willamette Valley, and this is where the majority of survey respondents (60%) are located, but Oregon contains seven other distinct agricultural zones. Having adequate representation from each of these zones would bolster understanding of the motivations, barriers and challenges faced by organic producers throughout Oregon.

Conclusion

This study identified three distinct typologies not previously recognized within organic farmer populations: experienced organic farmers, beginning organic farmers and experienced farmers beginning organic. In addition, this work explored differences between those typologies. Using this information can inform more in-depth research and

allow for more targeted educational and outreach efforts to specific subsets of the organic farmer population and to the spectrum of farmers contemplating transition.

In addition to adding more new beginning organic farmers, more experienced farmers will likely need to transition to organic to increase the availability of domestic organic products to meet market demand. Outreach and education programs for those considering transition should focus more on economic/market opportunities than ideological/philosophical ideas. In particular, highlighting specific market opportunities may help motivate transition.

There are obstacles to organic transition and production that span all farmer typologies. Many of the obstacles could be considered external to the farmer and their operation. These external barriers (i.e. recordkeeping requirements of organic certification or cost of organic inputs) are influenced by factors beyond the farmers' control including policy, market forces and foreign affairs. These can be challenging to address, but increasing farmer awareness about these factors and how to moderate their impact through skills such as business planning, recordkeeping and accounting could be useful for all farmer typologies. Additionally, the emphasis on these obstacles suggests a need for more research and analysis on how farmers are affected by external factors and how they mitigate those impacts.

In order to reach experienced farmers interested in transitioning to organic, education and outreach programs should address obstacles that farmers of all typologies agree on, but also on obstacles specific to the Experienced Farmer Beginning Organic typology. Production obstacles addressed should include weed management, pest or disease control, soil fertility management and yield reduction. Providing tools and

resources to help this farmer typology tackle market obstacles will be important and should address how to find buyers/markets for organic products, obtain adequate prices during transition and access organic processing facilities. Economic obstacles are of concern for every typology and include cost of labor, cost of organic certification and cost of organic inputs. These economic and market obstacles could be considered external factors. A well-informed farmer will have a better chance of making it through the three-year transition period if they are aware of, and can address, these challenges.

Providing farmers with mentorship and support through their transition could also be a tactic for increasing organic transition and fostering success. The aggregate, beginning organic farmers and experienced farmers beginning organic all ranked the learning process as an obstacle. Creating farmer networks or mentorship programs could provide ways for farmers to learn from, and support, each other. These networks could also provide avenues for technical expertise to reach those who express a need for it, particularly beginning organic farmers.

While more in-depth investigation is needed to further understand the motivations, barriers and challenges faced by the diversity of organic and transitioning farmers in Oregon, this quantitative study provides information that can be compared to national trends. This work also provides initial insight into these topics and raises more complex questions that can then be fleshed out with more qualitative research approaches. Collaborating with and learning from farmers and their experience will provide necessary insight to help more farmers successfully transition. As one respondent farmer stated, “the more farmers who transition to organic . . . the more we can make it successful for more people.”

CHAPTER IV: FARMER PERSPECTIVES ON THE TRANSITION TO ORGANIC PRODUCTION

Abstract

The motivations, barriers and challenges farmers face when transitioning to certified organic farming methods can vary greatly depending on the production system, agricultural region, market influences and more. While quantitative studies have contributed to the literature on motivations and barriers to transition, a qualitative approach can add depth and richness to the findings. To take advantage of insights available from farmers, a case study format was utilized to connect with, and enhance, previously completed quantitative research. In-person interviews were conducted on six Oregon farms drawn from 30 farms that participated in a survey on organic transition. These interviews were compiled into case studies. Farmers with different cropping systems and varying levels of organic farming experience were interviewed. Analysis of the case studies demonstrated a spectrum of economic and ideological motivations for organic transition and production. Obstacles identified by the farmers fell into four broad categories: economic challenges, production challenges, marketing challenges and social challenges. Findings increase awareness about these issues and provide information that can aid in organic transition outreach, education, policy and research.

Introduction

Market demand in the United States for certified-organic products has shown double-digit growth almost every year since the implementation of the National Organic Program and the introduction of the “USDA Organic” label in 2002. In 2014, certified organic food sales increased 11% totaling \$35.9 billion while non-food sales increased 14% to \$3.2 billion. Almost 5% of total US food sales are certified organic (Organic Trade Association, 2016).

Despite the growth in market demand, there is a lag in the growth of domestic organic production with only 0.83% of total U.S. cropland being certified organic in 2011 (Greene, 2013). Farmers may be reluctant to transition their land and production systems to organic due to a number of obstacles, either real or perceived (Cranfield et al., 2009; Johnston, 2010; Lau et al., 2010).

Focusing on the state of Oregon, the 2014 Organic Survey indicates there was a total of 203,555 certified organic acres and 525 certified organic farmers. This accounted for 5.6% of U.S. certified acreage and 3.7% of its farms (USDA, 2016). In 2014, Oregon ranked fifth in certified organic acreage after California, Montana, Wisconsin and New York and ranked ninth in the number of certified organic farms (USDA, 2015). In 2015, there was actually a 14% decrease in Oregon organic acreage with 175,675 acres of certified organic farmland (USDA, 2016).

When transitioning acreage from conventional to certified organic production, the United States Department of Agriculture's National Organic Program requires a three-year transition period. During this time farmers must comply with all organic regulations, abstain from using prohibited inputs, create an organic system plan and finally complete the certification process with accredited certifying agents (U.S. Government Publishing Office, 2015).

DiGiacomo and King (2015) identified four transition strategies farmers can follow. "Full" transition involves transitioning crops, land and livestock all at the same time. A "gradual" approach involves transitioning one parcel at a time with the eventual goal of certification for all parcels, whereas "split" operations have some land managed conventionally and some organically. "Immediate" transition is an option for land that has been fallow, under conservation easement or can be proven to have received no prohibited inputs in the previous three years. This latter strategy does not require the three-year transition period, but can result in immediate certification.

As farmers transition, understanding their motivations, attitudes and decisions can help advocates better communicate and support their transition. Comparative studies

have focused on how differences in farmer values, paradigms and perspectives influence the decision to farm organically (Best, 2008; Beus and Dunlap, 1990; Cranfield et al., 2010; Stofferahn, 2009). These studies have identified an overarching distinction between economic-motivated farmers and values-motivated farmers.

The literature shows farmers categorized along a spectrum of pragmatism to idealism based on their broad motivations and decision-making (Darnhofer et al., 2005; Fairweather, 1999; School and Te Grotenhuis, 1999). The varying perspectives and motivations of farmers influence whether they approach transition with an input substitution paradigm or through system redesign (Lamine and Bellon, 2008). Farmers' paradigms, perspectives and approaches to transition then influence what challenges they may face during transition.

Reviewing the literature on farmer obstacles to organic transition and production, four broad categories of challenges can be extrapolated: economic challenges, production challenges, marketing challenges and social challenges (Cranfield et al., 2009; Duram, 1999; Johnston, 2010; Koesling et al., 2012; Lau et al., 2010; Sahm et al., 2012; Sierra and Strohlic, 2007; Stephenson et al., 2012). The perception of these challenges differs between conventional and organic farmers (Johnston, 2010; Lau et al., 2010).

Methods

While quantitative studies have contributed to the literature on motivations and barriers to transition (Cranfield et al., 2009; Johnston, 2010; Lau et al., 2010), a qualitative approach can add depth and richness to the findings. To take advantage of insights available from farmers, a case study format was utilized to enhance this research.

Participant Selection

Six case study farms were selected from the pool of 30 Oregon farms that had participated in a survey examining motivations, barriers and challenges to organic transition that was conducted by the Oregon State University Center for Small Farms & Community Food Systems in cooperation with Oregon Tilth, Inc. These farms were transitioning or had certified new land with Oregon Tilth, Inc. between January 1, 2014 and July 31, 2015. The quantitative analysis placed producers into three different farmer typologies: Beginning Organic Farmer, Experienced Organic Farmer, and Experienced Farmer Beginning Organic.

A *Beginning Organic Farmer (BOF)* is defined as a farmer with 10 or fewer years of farming experience and who has been farming organically for their entire farming experience. An *Experienced Organic Farmer (EOF)* has been farming organically for 11+ years. The *Experienced Farmer Beginning Organic (EFBO)* has 11+ years of production experience, but has 10 or fewer years of experience farming organically. In other words, these farmers would be considered a beginning farmer regarding their organic experience. This classification is based on the United States Department of Agriculture's (USDA) definition of a beginning farmer or rancher being an individual who "has not operated a farm or ranch, or who has operated a farm or ranch for not more than 10 consecutive years" (Ahearn and Newton, 2016). Since the focus of this research is on the experience of transitioning to organic, the case study emphasis was on experienced farmers who have recently transitioned with three of the six case studies being a part of the EFBO group. For comparative purposes, the other three case studies included two EOFs and one BOF.

This study utilized purposive sampling, a type of non-probability sampling (Bernard, 2013), to select which of the 30 farms were invited to interview. Purposive sampling is considered nonrandom because participants are selected because of certain criteria. Purposive sampling is useful for exploratory research that is intended to generate new ideas that can later be tested (Salant and Dillman, 1994).

For case study research, it is recommended to choose cases that are likely to illuminate the research questions (Yin, 2014) and thus purposive sampling allowed for selecting farms that fit specific farmer typologies, had differing production systems and were located in different agricultural zones. These selection criteria were utilized to capture a wide-range of experiences thus providing a more comprehensive understanding of the spectrum of motivations, barriers and challenges that Oregon farmers face when transitioning to organic.

This study was conducted with approval from the Oregon State University Institutional Review Board to ensure the rights and welfare of the participants. Participation was voluntary and participants provided verbal consent allowing their stories and identities to be shared.

Case Study Approach

A case study approach has been utilized in agricultural research to highlight unique adaptations and innovations by farmers (DePhelps et al., 2005; USDA, 1980; Western Extension Marketing Committee, 2003). Notably, the USDA's 1980 Report and Recommendations on Organic Farming utilized a case study approach to gain understanding of organic farming systems in the U.S. Since reliable information on

organic farming was limited during that time, the 69 case studies in the report would influence future policy and set off a national debate about organic farming (USDA, 1980; Youngberg and DeMuth, 2013).

Yin (2014) emphasizes case studies are useful and appropriate for answering “how and why” questions while providing “insight into explanatory processes.” Key to the case study were questions examining why farmers decided to transition to organic and to learn about the challenges they face and how they overcome them.

The six case studies for this research were collected in-person while visiting each farm during June of 2016. The farm visit included a semi-structured interview with the primary farmer(s), a brief tour or overview of the farm, opportunities to take photographs, and extensive informal conversation. Conducting the case study in the farm setting provided further detail and insight through observation and opportunities for follow-up questions stimulated by being onsite. Each case study interview required approximately one to two hours of farmer contact time plus travel time to reach each farm ranging from 2 to 14 hours round trip.

Semi-structured Interviews

Semi-structured interviews were utilized allowing for open-ended questions that followed a general script (Bernard, 2013). The interviews were guided by questions that fell into four distinct categories (Table 4.1). The questions were informed by a review of the literature, a similar transition case study with Minnesota farms by DiGiacomo and King (2015) and the transition survey these farmers had previously completed. Since this research was conducted after preliminary data analysis of the transition survey, the case

study approach also provided the opportunity to ask clarifying questions regarding the initial survey results.

As the graduate student researcher, I took extensive notes during each interview. In addition, four of the six interviews were audio recorded. Recording did not occur for two interviews as the farmer and I were touring fields and the terrain and movement was not conducive to recording.

Table 4.1 Survey content (Chapter III) that informed case study interview questions

Category	Question Topics
Demographics	<ul style="list-style-type: none"> • Years farming • Years farming organic • Age • Acres • Production system/crops • Farm status • Transition process • Transition financial support/incentives/premiums
Motivations	<ul style="list-style-type: none"> • Organic motivations • Transition motivations • Timeline • Confidence
Challenges and Obstacles	<ul style="list-style-type: none"> • Learning curve • Greatest challenge and how it was overcome • Yields • Specific market opportunity • Weed and pest management • Cost of certification • Recordkeeping • Technical expertise
Positive Outcomes, Advice and Outlook	<ul style="list-style-type: none"> • Better than expected • Most proud • Scaling up • 20/20 hindsight • Transition advice

Data Analysis

Analysis of the interview data followed grounded theory methods (Corbin and Strauss, 2014; Glaser and Strauss, 1967). This inductive approach to data analysis involves coding information and doing comparisons looking for similarities and differences between each piece of data. Themes within the data are uncovered and can eventually lead to theories (Corbin and Strauss, 2014).

Many of the responses easily fell into the broad categories of motivations, challenges and advice because of the structure of the interview questions. From there, responses were coded to better understand themes within the broad categories and to compare the data.

Study Constraints

Given the specific selection criteria, purposive sampling was used which limits the extent to which the findings can be applied to other farmer populations. In particular, limiting the sample population to only farms that had worked with Oregon Tilth, Inc. doesn't take into consideration the viewpoints of farmers who utilized other organic certifiers.

With Oregon's robust agricultural economy, there are many more types of production systems utilized in the state than were highlighted through farmer interviews. Additionally, only four of the eight designated agricultural zones in Oregon were represented.

Results

Farmer Case Studies

Three case studies were completed with Experienced Farmers Beginning Organic, one with a Beginning Organic Farmer and two with Experienced Organic Farmers. Each case study begins with brief background information about the farm followed by the motivations and challenges farmers experience during organic transition and production. The case studies conclude with advice from the farmers to those who may be considering transition. These stories provide a valuable contribution to a growing body of knowledge that will aid farmers as they make the transition from conventional to organic production.

Transitioning the Dairy

The Christiansen Family of Meadowood Farm

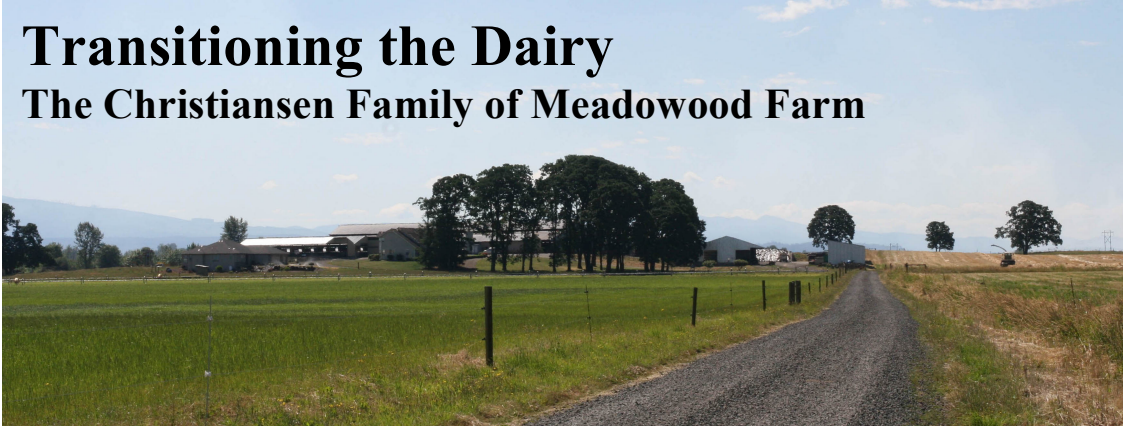


Figure 4.1 Meadowood Farm near Turner, Oregon

Background:

In the mid 1980s, the Christiansen family moved from Northern California to 140 acres near Turner, Oregon. The family started with only a small milking barn, mobile home and 115 cows on land that had previously produced peppermint. Now the family has 230 pastured cows on 270 acres with multiple barns, outbuildings and two beautiful houses onsite.

Motivations to Transition:

While the Christiansen family was doing well enough with their high-producing, registered Holsteins, the volatility and low prices of the conventional milk market would make it difficult for Brian Christiansen, the son taking over the farm, to make payments to his parents. In addition, there was a strong desire to make it easier on the cows. “We don’t have to get every last drop [of milk]” from the cow if we’re getting the higher organic milk price.

What gave Brian the confidence to transition? First, the necessity of having to make a change to remain financially sustainable helped motivate the transition. Second, they met with farmers who had made the transition successfully and had positive support from both their livestock nutritionist and veterinarian. Their nutritionist, in particular, really emphasized and encouraged transition as he worked with,



Figure 4.2 Farmer and dairyman Brian Christiansen

... both conventional and organic operations and noticed that all the organic operations were prepaying their bills at the end of the year while the conventional guys didn’t have any money I was wondering if you could really do it and keep the pedigree, but I’m hoping that if the animals aren’t pushed for every last drop [of milk] then they’ll have less health issues and decreased illness.

Brian was feeling confident from the production and marketing perspective that organic was the way to go, but the cost perspective of buying organic feed for the transition year, while still receiving conventional prices, was not going to be viable. When the opportunity arose to join the Organic Valley cooperative, even though conventional prices were high at the time, Brian jumped at the chance to become a member. “Folks thought I was crazy at the time [because conventional prices were so high], but I had no hesitation because I knew the volatility of the market.” A benefit of being a member of Organic Valley is the opportunity to take advantage of incentives during the transition year. For every 100 pounds of transition milk, the Christiansen’s were receiving the conventional price, in addition to an extra \$3.50 from Organic Valley. This incentive helped cover the bank loan the farm had to take out to purchase organic feed during the transition. Brian reflects that if it were not for the incentive, he likely wouldn’t have made the transition or would have transitioned only half his herd and sold the other half.

Challenges to Transition:

Reduced yield is a frequent concern when making the transition from conventional to organic production. Brian’s Holsteins were producing 78 pounds of milk per day per cow, but “that was really pushing them.” With the organic feed they’re seeing 66lbs per day, but that is actually 6lbs higher than Brian originally expected. He thinks they’ll get up to 70lbs, but doesn’t want to go any higher than that as he wants “to be comfortably profitable without pushing the animals.”



Figure 4.3 In the calf barn

Finding organic feed is another oft-cited challenge for livestock producers and while admitting it is “a little tricky,” Brian thinks it is useful being on the West Coast with access to ports and foreign imports. While he wants to support domestic producers, the economics of it doesn’t work out at this time, which he admits is “crazy!” This is due

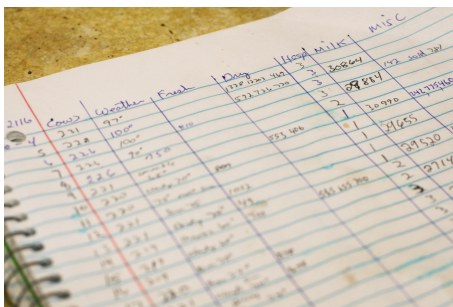


Figure 4.4 The dairy's simple record log

to imported certified organic feed currently being more affordable than organic feed produced domestically. The Christiansens have always had pastured cows, so producing high-quality pasture and silage is part of their success equation. Last year they grew sudex in pasture for the first time and were surprised to see a definite bump in milk production.

At first, the recordkeeping seemed daunting, but Brian realized it didn't require much more than what they were doing. His wife helps, and there are systems in place to make it efficient and routine including a filing box on top of the office desk to hold all the feed load slips and a simple daily diary, which they've been keeping for years. The only real new thing added was a log regarding their heifers. With conventional production, the heifers weren't out in the fields, but now they have to be on grass starting at six months, so their movements are tracked too.

Again, their veterinarian and nutritionist played a role, helping with recordkeeping and providing guidance about what products and treatments are available for organic.



Figure 4.5 Holstein calf

Advice:

For those dairies considering transition, Brian suggests having ground ready and certified before making feed.

That way the day you're ready to transition or membership is open for joining a cooperative, "your feed is ready and it's just 365 days to transition the cows."

A recurring theme with Brian was the importance of mentors and his appreciation of the knowledge others were willing to share. All the farmers he talked to "were open and willing to share as they've all been through the 'gosh what do I do?' stage" during their farming experience. Having people on your team – like a veterinarian and nutritionist – that are supportive and knowledgeable can make a big difference when navigating the transition.

The interview with Brian occurred with just 10 days left of his transition year, just 10 days until he was certified organic. There was definite excitement for the day to come and for the realization that he'd be getting about \$20 more per hundredweight "for the same amount of work."

Finding the Farm's Future

Matt Battilega of Big B Farm



Figure 4.6 North Willamette Research and Extension Center

Background:

Since 1988 Frank Battilega has been farming fresh market produce along the Willamette River in Aurora, Oregon. For over two decades, the focus had been on conventional production, but five years ago some certified organic and fallow land at Oregon State University's North Willamette Research and Extension Center (NWREC) became available for lease. After watching the conventional market be flooded by cheap California produce, Frank's son Matt, who had recently graduated from Oregon State University, recognized the market potential of certified organic produce. With his encouragement, the family began a split operation with most of their certified organic production occurring on NWREC land and their conventional produce two miles down the road on their family farm. Currently, they have 30 acres in production with approximately 60% certified organic and 40% conventional production. They've found the split operation is working well as some crops, such as Brussels sprouts, are challenging to do organically.

Motivations to Transition:

As Matt and his two brothers began to consider farming as careers and contemplated taking over their family farm, they knew they would need to change the farming model to be able to support their families through full-time farm income. The profit margin and market demand for organic was a motivating factor to transition as this would help the sons achieve the goal of financial sustainability for the farm and their families. Matt shares, "Dad would have closed up shop if it wasn't for going organic."



Figure 4.7 Farmer Matt Battilega

Having the land at NWREC already certified organic or fallow and ready to go was another motivating factor. Being second-generation farmers of that area, the sons already had all the equipment needed. They just switched out their fertilizers and pesticides. While this sounds easy, the costs of the organic inputs are double to triple the costs of their conventional inputs. This has meant they have put effort into micromanaging pesticides and fertilizer inputs, which Matt admits is “making us better farmers.”



Figure 4.8 Shared equipment and storage at NWREC

Challenges to Transition:

Like many farmers, Matt sees the availability and cost of labor as significant challenges. To attract quality employees, the farm generally pays workers \$1 to \$2 more per hour than other area farms. They will start new employees at \$10 per hour, over Oregon’s minimum wage, and bump them up to a higher rate as soon as they prove themselves. Matt believes, “other farmers don’t understand how important good farm workers are” and so aren’t increasing their pay. By paying better wages, the family retains quality workers.

The bigger profit margin from their organic sales has helped provide the funds to have more employees in the field hoeing to keep down weeds, another obstacle. Sometimes, they will hire crews from neighboring fields to come over for a day or two to hoe the fields. However, as they’ve gained more organic experience, Matt reflects that they’re getting better at managing weeds with a cultivator.

Being fresh produce growers provides another challenge. “You have to move produce within a week,” Matt emphasizes. One useful advantage to having the split operation is that if the farm has to sell organic produce into the conventional market, they have conventionally marked boxes. Tied into this issue is also the challenge of marketing. Matt is grateful that the “stars kind of aligned” thanks to networking with local growers and the farm was able to contract with New Seasons Market their first season of organic production. This contract along with a later one from Charlie’s Produce has allowed the farm to quickly expand their organic production. Without this contract though, Matt believes it would have been more difficult to find a big, steady buyer for their organic produce.

While his Dad still is the farm owner and manages hiring and finances, Matt shares that for many families the “older generation is a challenge...Older generation likes crops they can grow well, even if they’re not necessarily making money on them.” Matt feels lucky that, “it’s not that bad in our family,” in terms of how decisions are made and appreciates that his dad is allowing the brothers to take charge of some things. He has

witnessed other families where the younger generation has a hard time “changing things up” from the older generation and shares that his dad now feels good about the move to organic.

Advice:

Starting small is what Matt suggests. The Battilega’s started their experiment with one acre, then two, then five and now 10 acres, basically doubling production size every year but one. This allowed them the opportunity to first focus on quality production, secure a contract and learn what organic inputs worked best. “It takes micromanaging to ensure a good profit,” and Matt advises, “don’t plant too much . . . it’s easy to grow too much and go overboard.” By working through the transition learning curve on a small-scale, cost and energy inputs can be kept reasonable.



Figure 4.9 North Willamette Research and Extension Center

By growing for the organic market and with plans to eventually expand to 50 acres, the farm would be able to support the brothers’ families and provide each with the Oregon median income of approximately \$50,000 per year. Matt realizes that with farming, “It’s a lifestyle . . . you like playing in the dirt or plowing ground . . . and feeding the community . . . you’re not here to get rich.”

Reflections on the Ranch

Fred Justesen of Justesen Ranches



Figure 4.10 Dryland farm field north of Tygh Valley, Oregon

Background:

Equipped with a crop science degree from Oregon State University, Fred Justesen started farming the drylands of the Columbia Plateau over four decades ago. Centered around the Tygh Valley and Grass Valley areas, his ranch consists of 1,500 – 2,000 acres of conventional wheat, a small livestock operation and now 300 acres of certified organic barley. Thousands of additional acres are currently in the Conservation Reserve Program, and his family also provides lodging and recreational opportunities for hunting enthusiasts.

Motivations for Organic Production:

Fred first trialed organic barley production about 30 years ago, receiving certification through Oregon Tilth's then newly formed certification program. When some land recently came out of the Conservation Reserve Program, it qualified for organic production without the three-year transition time. This, along with his desire to "not work with chemicals," provided inspiration for more experimentation.

Another motivation came through a slice of toast. One day while eating Dave's Killer Bread, Fred noticed they were using organic barley and through a few phone calls, found out from which grain miller they sourced product. Selling to the grain miller and an organic dairy for feed has provided Fred with a market for his organic barley that increases his profit while also adding diversity to the ranch's income stream. Fred shares that morally he would like to farm everything organically, but having a financially sustainable business is more important, thus the chance to increase profits through organic production was definitely a key motivation.



Figure 4.11 Farmer Fred Justesen

Challenges to Organic Production:

From his initial experimentation, Fred knew “they could get seven years of good yield before [he would] start seeing a yield decrease due to nutrient decrease.” Armed with that knowledge, organic barley has again made its way into Fred’s management plan and while he desires to farm everything organic, he feels there isn’t yet “a feasible way to do it” on his scale. Without a cheap source of organic nitrogen available, his low soil nitrogen results have him worried. He admits that fertility is one of the most significant challenges he faces and observes, “we have as much to learn about the soil as we do outer space.”

Fertility is not his only soil health concern, but also erosion. Currently, his production practice involves tilling the land twice before sowing spring barley. This repeated tilling and focus on early germination is key to reduce weed competition, another significant challenge, but he admits it isn’t the best for soil health. Despite the challenges of weeds and fertility, yields for the three growing seasons have been better than expected, and the organic premiums beat conventional prices by “quite a bit.” Even with the significant profit margin, a major concern to growing organic commodities is crop insurance being unavailable for organic prices.



Figure 4.12 Roadside sign north of Tygh Valley, Oregon

With his focus on production related obstacles, Fred admits to having “not too much creativity” when it comes to marketing. Marketing though is key to a successful business and his awareness of the challenge is the first step to overcoming it.

Advice:

“Don’t be afraid to try it,” Fred suggests. His first year he “chickened out” due to worrying soil test results and didn’t end up planting the full acreage he originally intended. It is a regret as he received twice the price per acre for that crop as subsequent crops (due to drought the next year). Having this willingness to experiment and explore opportunities has opened up a new way to both increase profits and diversify the ranch’s income stream. People are “always afraid of the unknown,” but with the way commodity prices are currently, Fred urges that one has to “look around and do a lot of things.”



Figure 4.13 Chicory (*Cichorium intybus*) growing at Brad Smith's farm

Background:

There is a rich seed story to the land of Brad Smith. In 1974, the very first seed farm in the Rogue and Applegate Valleys of Southern Oregon grew on what is now his acreage. Pioneers in organic seed production lived and learned on this land, and now Brad continues the tradition of growing organic seed.

The USDA considers a “beginning” farmer as one with less than ten years of experience. Going into his fourth year of production, Brad is thus considered a “beginning” farmer. Previously he, his father and brother (who also live on the land), worked as fishermen in Alaska. Brad had been interested in the concepts of permaculture and started looking for land for the family, stumbling across these 14 acres that not only met their criteria for price, location, size, etc. but also was intriguing with its history as a seed breeding hub. He states, “I like the history of the land and turning back into a seed farm” and shares this is one of the things that makes him most proud. Brad has three acres he hopes to eventually bring into production, but currently is only farming an acre or so.

Motivations for Organic Production:

Why does Brad focus on certified organic seed production rather than food production? He shares his worry about the “take over [of seeds and seed breeding] by the chemical industry” and wants seeds “in the hands of people for security.” These social and ideological motivations inspire him to keep growing despite the challenges of being a solo farmer.



Figure 4.14 Farmer and seed grower Brad Smith

Even with his strong ethical reasons for organic production, Brad recognizes the financial draw of certified organic seed production stating, “...and economically, \$3 per packet of seed makes sense.” He admits that being located on the old seed farm and having previously worked with a local organic seed grower gave him an “in” with a local seed company. This made his decision to focus on seed production easier as he didn’t have to work to create a niche market or drum up customers.

Challenges to Organic Production:

Enthusiastically Brad jumped into farming and learned some hard lessons those first few seasons. Emphasizing the importance of soil health, he admits that the first season he plowed too deep and brought up subsoil, a mistake with which he continually has to contend. He's now nourishing the soil with cover crops, homemade compost, compost tea and some organic amendments.



Figure 4.15 Brad Smith in his field

Finding the scale of operation that both pays the bills and is energetically sustainable for Brad has been difficult. With his focus on seed production, he hasn't been able to grow as much food for his family as he'd like and has found "watering takes A LOT of time." In addition to the time intensive physical work of farming, he's found all the details of recordkeeping for his organic certification "can be overwhelming." Though he believes "recordkeeping is good for farming" and "makes them [organic certifiers] happy," he doesn't philosophically agree with certification because why should organic farmers "bear the burden of proof" that they're not using chemicals. Considering these points "Makes me want to take a break from organic certification while I scale down." While he shares his considerations regarding taking a break from certification, he knows it would only be a temporary thing, and he would again pursue certification once he has proper infrastructure in place.

Brad faces many challenges, and he shares that it can be "overwhelming to be spread so thin." Thinking back to his first couple of seasons he realizes that it would have been prudent to start smaller and focus first on farm infrastructure and building community. Having infrastructure in place to house a seasonal assistant would have allowed Brad to share the burden of farming. Right now, though, Brad bears that burden alone and ruminates that the "challenge is maybe mentally" and "having help would help mentally."



Figure 4.16 Rows of seed crops

Advice:

Despite the challenges, Brad is positive and enthusiastic about what the future holds. He knows the best move forward is actually to scale down. His focus will be to build the infrastructure and systems needed to grow the farm in a way that will not deplete his mental and physical capacity. Brad encourages other farms to start small and really consider what is realistic before they jump in over their heads and of course, to "start with growing your soil."

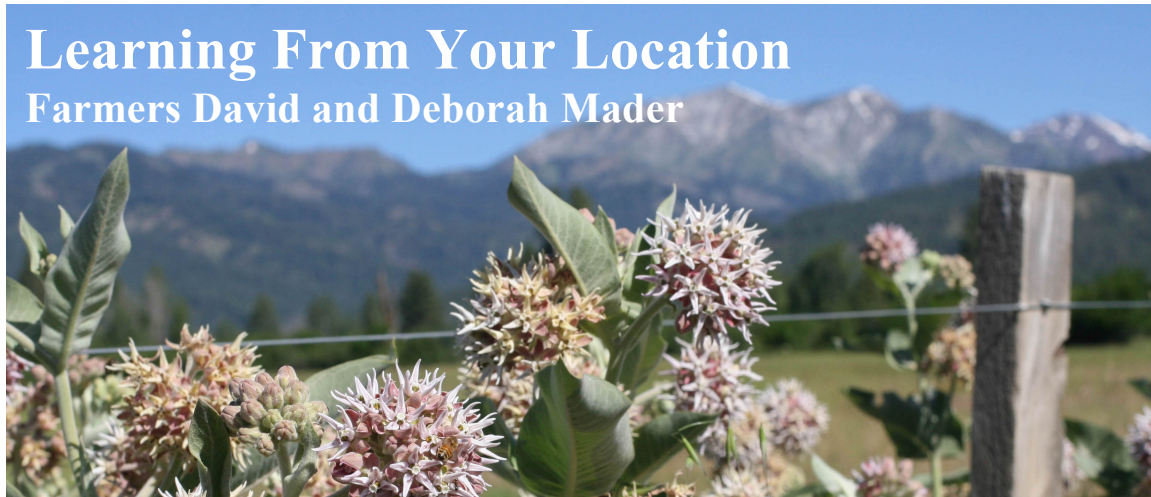


Figure 4.17 Milkweed and the Wallowa Mountains near the Mader's farm in Halfway, Oregon

Background:

David and Deborah Mader moved to the rural town Halfway in Northeastern Oregon during the 1970s “back to the land” movement. They have nearly four decades of farming experience and first received organic certification in the early 1990’s. Their operation has included a variety of ventures through the years including offering a produce CSA to Baker City residents, growing organic alfalfa for an herb company, producing seed garlic, raising and training draft horses and most recently, raising beef cattle.

Motivations for Organic Production:

The Maders motivation to farm organically is propelled by their ideals. Since the 1970s they’ve been eating and farming organically for both the health of humans and the health of the planet. “People like to eat, expect to eat,” so by providing food that is grown and raised in a responsible manner, the Maders feel they are positively contributing to social change.



Figure 4.18 Farmers David and Deborah Mader

There is an understanding that change cannot occur in isolation and the Mader’s address this issue by educating youth and other farmers. For over 20 years, they have hosted apprentices/interns who have stayed a minimum of six months each. With pride, the Maders share that the interns currently on the farm will take home a team of horses that they have trained from being untouchable to a now functioning draft team. Through their apprenticeships and participation in regional farmer forums, the Maders reflect that “information is a nutrient that we’re recycling” and they enjoy it.

Challenges to Organic Production:

“Location, location, location. Market, market, market.” These words come from the Maders as both advice to aspiring farmers and as a reflection of the challenges they have faced. Location and market are intricately tied and when the Maders first moved to Northeast Oregon they admit that from a business standpoint they were “oblivious to the area.” Offering a mixed vegetable CSA in Baker City they found they were “not business people” and had a hard time gaining membership as well as finding people who could afford a CSA in their a small rural community.



Figure 4.19 Looking over the Mader's alfalfa fields and pasture



Figure 4.20 Cattle grazing in Halfway, Oregon

There were other frustrations with farming in their area. “Climate, slope and inconsistent water” significantly influenced production choices and the Maders were unable to find mentors who could counsel them on vegetable production in their region. “When we need advice on cattle, we can ask a local, but not for crops” because people aren’t growing organic vegetables in the region. “This land is best suited for a specific cropping style, and we tried to ignore it,” the Maders reflect. They feel there is a far bigger difference between raising

organic crops compared to conventional crops in their region, whereas, there is a much smaller difference between raising organic versus conventional cattle. This contributed to the farm evolving away from crop production and focusing instead on cattle and draft horses.

With the focus now on livestock, the Maders again faced market demand and distance to market challenges. They had a flourishing draft horse business, providing trained draft teams to farms across the region, but then the recession dampened that market. With their cattle, the Maders found little demand for organic beef in their region. They have only sold one steer as “organic” in the last three years. Others were sold at auction for good prices due to their quality, but they



Figure 4.21 A small section of the Mader's acreage

did not fetch a premium for being certified organic. Thus they have decided to give up their organic cattle certification even though they will still be using only approved organic methods and inputs. Their pasture and alfalfa will remain certified organic. The Maders would like “more infrastructure or social structure” for small-scale operations to collaborate in their area and aspire to be part of a more viable distribution model, cooperative or aggregation scheme.

Advice:

While the Maders enjoy helping to “spread the word about organic to young people,” they are finding it hard to justify financially and admit that “the human contact stuff is important, but we’ve had some financial limitations.” With these reflections, the Maders encourage aspiring farmers to be realistic about evaluating a farm location, market distance, product demand and the farming knowledge and resources available because “it matters what your neighbors are doing.”

Despite the obstacles the Maders have faced, they enjoy farming organically on their challenging and beautiful land, sharing their goal to “age in place.”

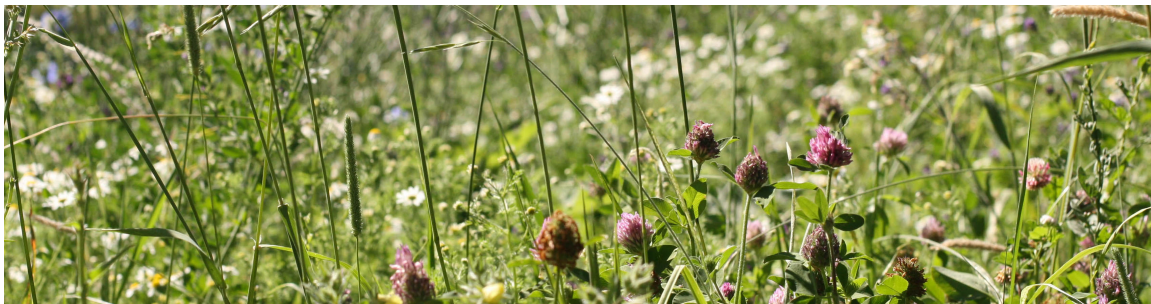


Figure 4.22 Diverse forbs and grasses in the Mader's pasture

Quality Over Quantity

Yocum & Sun Farm



Figure 4.23 View over the Rogue Valley from Yocum & Sun Farm

Background:

“You’ll notice I don’t have a tractor,” Bill mentions. He doesn’t need one. Bill’s farm, Yocum & Sun Farm, is located on the dry, rocky slopes of a ridgeline outside of Ashland, Oregon. There are two certified organic acres and a home with a view of the distant mountains and valley surrounded by 81 additional acres managed as a reforestation/agroforestry project and classified as “open space reserve.”

First certified organic in 2010, Bill has been an avid gardener and farmer his whole life, practicing organic production methods for over 30 years. He focuses on tomatoes, selling about 1,500 pounds last season, but also grows other produce including chard, cilantro and cucumbers, and he’s recently planted fruit trees. He sells produce direct to community members, at a neighboring farm stand and to a local Asian market, which is his largest buyer.

Motivations for Organic Production:

Being retired from a forestry career, Bill is motivated to farm not necessarily to make money, but instead to “provide a service to my community” because “if they’re not getting good produce, then they’re getting cardboard.” His focus is on “quality food, flavorful food,” and he isn’t afraid to undercut conventional grower prices to get his produce to the people.



Figure 4.24 Farmer Bill walking through his lower field

This drive to provide quality food to his community ties into his broader, ideological perspective on the state of agriculture. He is simply “not into corporate farm crops” and is doing his part to provide local food to local people.

Challenges to Organic Production:

Bill feels confident in his production practices but shares some key insights into business decisions and challenges he has faced. Regarding his crop choice, he observes, “If you want to make money, it’s not in produce. Produce is a time bomb... the key is to unload it fast.” Maintaining freshness and flavor through proper postharvest handling is

important to any produce grower, but this challenge also relates to another obstacle for Bill, marketing.

“Marketing is a hassle,” Bill states. Many farmers express they would rather focus on farming than on managing the logistics of where and when to sell their produce and this is true for Bill as well. Without any on-farm postharvest storage capacity, he has to have buyers lined up and ready to accept each harvest. Despite this challenge, he knows that “fresh is best” and won’t compromise flavor and quality by picking and marketing under ripe produce.

It is possible that Bill would be able to increase his profit and expand his markets by scaling up. When asked about this possibility though he stated, scaling up “isn’t going to happen here.” He once hired a family member, but found “paperwork and cost mushroomed” as he had to consider the cost of unemployment, workers’ compensation, etc. This is a telling statement regarding the extra hassle needed to scale up because Bill is no stranger to paperwork. He utilizes the organic certification cost share subsidy and maintains meticulous records for organic certification, sharing that “recordkeeping isn’t a burden...have to do it for income taxes anyway.” He’s in a catch-22 of wanting to provide more local food for his community but not wanting to overburden his time, energy and resources.

Advice:

With a spectrum of different projects around his acreage, Bill demonstrates that he follows his own advice to “manage for a multitude of things” and that “diversity makes the land stronger.” In addition to management suggestions, Bill reminds others “you are what you consume” and is supportive of the organic certification program and process. Considering these suggestions and his goal to provide healthy food to his community, Bill concludes, “I’m fortunate to have quality produce, so I share it.”



Figure 4.25 Tomatoes are the focus at Yocum & Sun

Study Population Characteristics

Purposively selecting participants resulted in the opportunity interview a diverse sample of farmers with a range of experience, production systems, locations and perspectives (Table 4.2). Farmer participants ranged in age with two participants in the 26 – 35 age range, one participant age 36 – 45 years and three participants 66 – 75 years. Five of the six farm interviews were with male farmers with the sixth visit involving a male and female couple who had spent their entire farming experience working together. The six farmers had an average of 25.2 years of farming experience. The focus was on experienced farmers who recently transitioned, so five out of the six participants have 11 or more years experience and thus fit into the USDA’s category of “experienced” farmer (USDA, 2016). Under this definition, only one case study farmer was considered a “beginning” farmer.

If considering only the organic experience of the farmer, four out of the six interviewees would be considered beginning organic farmers using the USDA’s definition of a beginning farmer. The average number of years of farming using “organic” methods for these four farmers is 3.5 years with the average for all six interviewees equaling 12.2 years. Cross-tabulating the years of farming experience with the years of farming using “organic” methods allowed for placing farmers into the typologies of *Beginning Organic Farmer (BOF)*, *Experienced Organic Farmer (EOF)* and *Experienced Farmer Beginning Organic (EFBO)*.

To obtain a diverse perspective on organic transition and production in Oregon, farmer participants were selected to represent varied production systems and agriculture regions. Six different production systems were represented including dairy, pasture,

grain, mixed vegetable, livestock and vegetable seed. Four of the eight agriculture regions designated by the Oregon Department of Agriculture were represented (Figure 4.1). Farm size was influenced by production system and locations and ranged from 4 to 3,000 acres.

The EOF and BOF farmers had their entire operations certified organic; whereas, two of the three EFBO farmers managed split operations. The other EFBO farmer was actively transitioning, having already certified his pasture and being just 10 days away from receiving organic certification for this dairy operation.

Table 4.2 Demographics of case study farms and farmers

	EFBO dairy	EFBO grain	EFBO mixed veg.	EOF mixed veg.	EOF livestock/ pasture	BOF veg. seed
Years of farming experience	15	44	20	30	39	3
Years of farming using “organic” methods	4	3	4	30	29	3
Typology	EFBO	EFBO	EFBO	EOF	EOF	BOF
Age range (years)	36 - 45	66 - 75	26 - 35	66 -75	66 - 75	26 - 35
Organic production system(s)	Dairy, pasture	Grain	Mixed veg.	Mixed veg.	Livestock, pasture	Veg. seed
Ag. region*	Will. Valley	Columbia Plateau	Will. Valley	Southern Oregon	Northeast Oregon	Southern Oregon
Acres	270	3,000	30	10	380	4
Farm status	In transition (entire farm)	Split operation	Split operation	Certified organic (entire farm)	Certified organic (entire farm)	Certified organic (entire farm)

* Agriculture region as designated by the Oregon Department of Agriculture (Figure 4.1)



Figure 4.26 Case study farm locations indicated with yellow stars within Oregon agricultural regions as designated by the Oregon Department of Agriculture. Image adapted from Oregon Department of Agriculture (n.d.): <https://www.oregon.gov/ODA/shared/Documents/Publications/Administration/ORGrowingRegions.pdf>

Farmer Motivations to Transition

Whether preserving the family farm, making a social statement or improving the bottom-line, the reasons producers transition to organic are as varied and diverse as the farms and farmers themselves. The motivations expressed by the farmers were categorized into three broad themes: economic motivations, ideological motivations and environmental and health motivations (Figure 4.2).

As analysis of the interviews proceeded, I observed that farmers expressed both primary and secondary motivations. Primary motivations were those consciously noted by the interviewee as a motivator for transitioning and farming organically. Secondary motivations were extrapolated based on the content of the whole interview and not just the questions about motivations. These secondary motivations were most often expressed when farmers were asked about their outlook for the future or when sharing advice for

those considering transition. For some farmers, these secondary motivations were so inherent to their underlying values that despite not being explicitly stated, they were made clear during the interview.

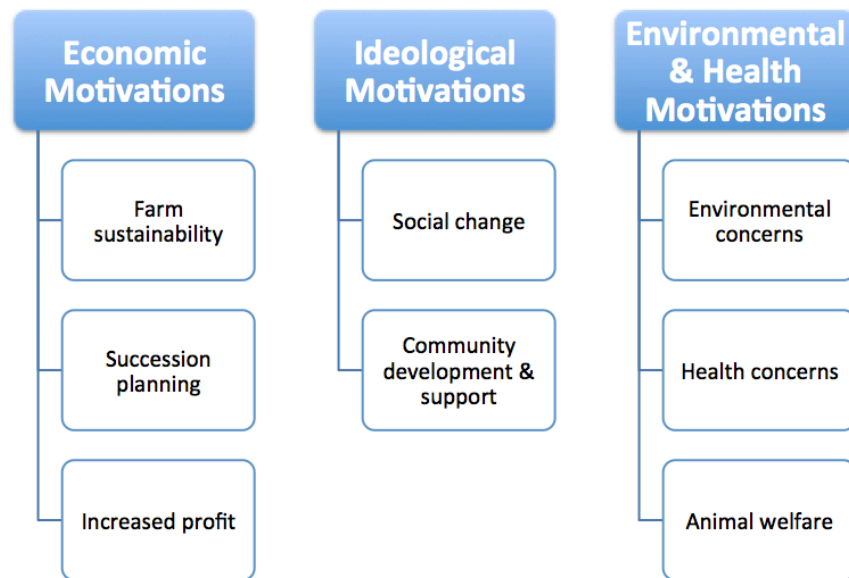


Figure 4.27 Motivations of case study farmers to transition to organic

Economic Motivations

Three economic factors motivated farmers to transition to organic: increased profit, sustainability and succession planning.

The key motivator for the three farmers in the EFBO group was ***increased profit***. For two of these farms, transitioning to organic was expressed as a financial “necessity.” This need was wrapped into the realization that without increased farm profitability, the succession of the farm to the next generation would be difficult, if not impossible.

One example emerging from the case studies was from the EFBO dairy. With the volatility of the conventional milk market, the EFBO dairy needed the stability and

premiums of the organic market in order to financially transition the farm from the parents to the son. With current prices, the EFBO dairy expressed, “for the same amount of work,” there is a \$20 difference per hundredweight between conventional and organic milk. This increased profit will help the son make payments to his parents in order to purchase the farm.

For the EFBO split operation vegetable farm, a son reflected that, “Dad would have closed up shop if it wasn’t for going organic.” By transitioning, two of the sons realized there is the possibility of supporting both their families through full-time farm income. They’re now actively working to make that goal a reality.

For both these operations, profitability was entwined with the idea of *farm sustainability* and thoughts regarding *succession planning* from one generation to the next.

The EFBO split operation grain farmer also expressed concerns about farm sustainability noting the family has worked to diversify the income stream not only through various agricultural products (hence the organic barley), but also by offering recreational opportunities on their land and hosting events. For him, increased profitability is still the largest motivating factor for organic production. As he stated, “if I wasn’t making more money, then it’s a bit of a moral issue, but not that much.” Morally he believes in farming organically, but the need to make money is more important.

Although the economic themes of farm sustainability, succession planning and increased profit were the most significant motivators for the three farmers in the EFBO group, economic motivations were not highlighted by the EOF or BOF interviewees.

These farmers did mention their financial status and the challenges and benefits they face in their operation, but when asked about their motivations for farming organically, no explicit economic reasons were stated. Only the BOF implied profit as a potential motivator saying, “\$3 per packet of seed makes sense.” This though was stated as a motivator to focus his operation on seed production rather than fresh produce and was not his reason for farming organically.

Ideological Motivations

While making a living is a key component of a farm business, improved financial opportunity was not the only inspiration to transition and farm organically. Many of the farmers expressed motivations for organic production that could be categorized as ideological or philosophical motivations including social change and community development and support.

Spoken with resolve and passion, ideological motivations were stated by the two EOFs and one BOF. For these three farmers, the idea of *social change* was a key motivation for their farming practices while no EFBO respondent expressed motivations in this category. This theme was expressed in comments such as “I’m not into corporate farm crops,” (EOF mixed vegetables) and I’m motivated by the “take over by the chemical industry” and want seeds “in the hands of people for security” (BOF seed). Similar thinking inspired the EOF livestock/pasture farmers who began farming with high ideals during the “back to the land” movement of the 1970’s. For these farmers, choosing organic farming methods was an expression of their ideals and a way to create positive changes while making a statement against the current state of agriculture.

The theme of social change incorporated ideas and concepts that were large in scope such as corporate agriculture and the state of the food system. Motivations that focused more on tangible, local ideals were categorized as *community development and support*. Responses were placed in this category if the farmer mentioned wanting to contribute, in some way, to the local community. These contributions were varied and included pride in “providing a service to my community . . . and providing a service to someone for their table” (EOF mixed veg) and in educating to “spread the word about organic to young people” (EOF livestock/pasture) through apprenticeships and participation in regional farmer forums. The creation of community through apprenticeships and networking was a significant source of pride for the EOF livestock/pasture couple. Although not specifically mentioned as a motivator, it was evident this was a continuing inspiration for this farm couple. The BOF seed grower also didn’t specifically mention building a farm community as a motivator, but this was a big focus and goal for him. The specific details and execution of these motivations varied, but the overarching theme involved positively creating and/or contributing to a community.

Environmental and Health Motivations

The category of environmental and health motivations contains both very concrete and more abstract motivations. These could also be considered part of the ideological category though a significant difference between the environmental and health motivations and the ideological motivations is a sense of the tangible versus abstract. For the environmental and health motivations, distinct outcomes were expressed such as

limiting exposure to chemicals or increasing the quality of food whereas ideological motivations were more broad and abstract such as improving the community.

Health concerns were the most explicitly expressed motivational theme in this category. Health included quality of food and limiting pesticide/herbicide exposure. For the EFBO grain farmer, “not working with chemicals” was a significant stimulus while the EOF and BOF farmers focused on the health and quality of the food they were producing.

Animal welfare includes health concerns for livestock, but also included animal well-being. This was a significant motivator for the EFBO dairy who hoped that with the organic milk premiums, they wouldn’t have to “get every last drop [of milk]” thus making it “easier on the cows.” The EOF livestock/pasture couple also expressed concern for their animals’ well being. Even though they were letting their organic animal certification lapse (due to cost and a lack of demand for organic meat in their area), they intend to adhere to organic husbandry methods and will keep their pasture and crops certified organic.

Environmental concerns were motivations definitively linked to the state of the environment. Although not a primary motivation for the EFBO grain farmer, he was aware of the importance of caring for the environment sharing his observation that, “I know the climate is changing...last year was the first time in my life I saw the river go turbid due to drought.” He also recognized the importance of soil health stating, “We have as much to learn about the soil as we do outer space.”

Only the EOF livestock/pasture couple explicitly mentioned the environment as a key motivator to their organic production. For the other EOF and BOF farmers,

environmental and health concerns were not explicitly stated and were considered secondary motivations as they appeared inherent to their more abstract ideological motivations.

Table 4.3 Primary and secondary motivations identified by case study farmers

		Farmers					BOF seed
		EFBO dairy	EFBO grain	EFBO mixed veg	EOF mixed veg	EOF livestock/ pasture	
Economic motivations	Increased profit	X	X	X			
	Farm sustainability	X	X	X			
	Succession planning	X	x	X			x
Ideological motivations	Social change				X	X	X
	Community development & support			x	X	x	x
Environmental and health motivations	Animal welfare	X				X	
	Environmental concerns		x		x	X	x
	Health concerns		X		X	X	x

X indicates primary motivation

x indicates secondary motivation

Farmer Barriers and Challenges to Transition and Organic Production

When transitioning to organic production, farmers may face challenges that differ from obstacles they've previously encountered. How farmers perceive those challenges, and the actions they take to overcome them, can provide insightful information for others considering transition. Challenges were categorized into four different groups: economic, production, market and social obstacles (Table 4.4)

Table 4.4 Barriers and challenges to organic transition and production

Barriers: Economic	<ul style="list-style-type: none"> • Cost of organic inputs (seed, fertilizer, etc.) • Cost of labor
Barriers: Production	<ul style="list-style-type: none"> • Availability of organic inputs (seed, feed, fertilizer, etc.) • Weed management • Pest or disease control • Soil fertility management • Oversight of irrigation • Recordkeeping requirements of organic certification • Place-based production challenges (climate, slope, etc.)
Barriers: Marketing	<ul style="list-style-type: none"> • Marketing • Distance to market • Time-sensitive products
Barriers: Social	<ul style="list-style-type: none"> • Sole farmer • Interpersonal challenges • Lack of collaborative community

Bold concerns were also identified as obstacles by the majority of farmers in the survey research chapter (Chapter III)

Barriers and Challenges: Economic

There are costs to doing business and those costs can be significantly different between organic and conventional production. The EFBO vegetable farmer found the ***cost of organic inputs*** (fertilizer, pesticides, etc.) is double to triple the cost per acre than that of their conventional acreage. Tied in with larger scale commodity production is the challenge that farmers cannot insure their organic crops at organic prices, but only at conventional prices.

The EFBO dairy also found a significant difference in the cost of organic feed during their transition year and the conventional milk price they were receiving. If he had not received a transition subsidy from Organic Valley Cooperative, he doubts he would have made the transition. Couple the cost of organic feed with its limited availability and the EFBO dairy found they had to take out a significant loan to cover feed costs during their transition year despite having their own certified organic pasture and silage.

The ***cost of labor*** is another challenge all farmers face, but with organic production relying more heavily on manual weeding, labor adds a significant cost especially in vegetable systems. To attract quality employees, the EFBO vegetable farm generally pays workers \$1-2 more per hour than other area farms. They will start new employees at \$10 per hour, over Oregon's minimum wage, and bump them up to a higher rate as soon as they prove themselves. The farmer believes, "other farmers don't understand how important good farm workers are" and so aren't increasing their pay. By paying better wages, the family retains quality workers.

The EOF vegetable farmer discovered that by hiring an employee, there was not only the cost of their wages, but also unemployment and workers' compensation to cover. Finding that "paperwork and cost mushroomed" with an employee, he has determined not scale up his operation.

Barriers and Challenges: Production

For large scale commodity cropping, the EFBO grain farmer found not only cost, but also ***availability of organic inputs*** as an obstacle. Currently, he doesn't have an organic nitrogen input that is viable both financially and for this scale of production.

All the farmers except the EFBO dairy expressed challenges with ***weed management***. For the small BOF seed farm and EOF mixed vegetable farm, weeds were a regular task for these solo farmers. For the larger scale EFBO vegetable farm, weeding required a significant input of time and resources. Sometimes, large crews from neighboring fields would be hired to come over for a day or two to hoe the fields. As he has gained more organic experience, the EFBO mixed vegetable farmer reflected that the farm is getting better at managing weeds with a cultivator thus reducing labor needs.

Tenacious weeds presented issues for the EOF livestock/pasture farmers who contended with dodder (*Cuscuta spp.*) in their perennial alfalfa fields and the EFBO grain farmer who dealt with cheatgrass (*Bromus tectorum*) and goatgrass (*Aegilops cylindrical*). While the EFBO grain farmer enjoyed "not working with chemicals," he struggled with the damage he was doing to his soil by tilling his land early and then tilling again to reduce weed competition for this organic plantings.

Only two farmers mentioned *pest and disease control* as challenges. The EFBO dairy farmer expressed interest in having an effective organic mastitis treatment while the EFBO mixed vegetable farmer noted that only now in their fifth year are they producing organic lettuce and chard, two vegetables that have more significant pest issues. The EFBO mixed vegetable farmer also noted that they saw a slight reduction in yields their first year of organic production due to pests, but once they implemented their organic pest management strategies, this has not been a problem.

Soil fertility was a concern for the EFBO grain farmer. With his land coming out of fallow, he saw a good “bump” of fertility, but worries that without a financially viable source of organic nitrogen, they will only have about seven years of good production. He also did not like having to till his soil for organic weed management and knew this practice influences his soil health. While the other farmers didn’t mention soil fertility as a specific challenge, the importance of it did come up. The EOF mixed vegetable farmer expressed an intimate knowledge of the different soil types around his property and how they influenced crops. The BOF seed farmer advised other beginning organic farmers to “start with growing your soil...grow soil fertility early and grow compost.” The EFBO mixed vegetable farmer also believes they’ve had such great yields because of “better organic matter management” now that they’re practicing organic farming methods.

While the act of irrigating wasn’t mentioned as a production challenge, the time involved in the *oversight of irrigation* was a challenge for both the BOF seed farm and the EOF livestock/pasture farm. “Watering takes *a lot* of time,” emphasized the BOF farmer while the EOF livestock/pasture farmers considered irrigation “a time-consuming business.”

All farmers acknowledged *recordkeeping* as being important for good business. Despite this acknowledgement, there was a range of perspective on the practice. The BOF seed farmer found all the details of recordkeeping for organic certification “can be overwhelming.” Though he believes “recordkeeping is good for farming” and “makes them [organic certifiers] happy” he doesn’t philosophically agree with certification because why should organic farmers “bear the burden of proof” that they’re not using chemicals.

The EFBO dairy shares that recordkeeping at first seemed “daunting, but not overwhelming.” The farm has systems in place to make recordkeeping efficient and routine. In fact, the farm was already keeping a simple daily log, filing feed load slips and tracking pasture rotation. The only new piece of information to track with certification was field rotation for the heifers as they were previously not on pasture. The EFBO dairy also found their livestock nutritionist was a great resource for recordkeeping, supplying necessary information and helping keep track of pivotal information.

The EFBO grain farmer found recordkeeping easy along with the EOF mixed vegetable farmer who shared, “recordkeeping isn’t a burden....have to do it for income taxes anyway.” The EFBO farmer shared he was, “25 years old and college educated” when he filled out his initial organic certification paperwork so didn’t find it a challenge.

Other production issues mentioned include *place-based production challenges* that can affect any farm regardless of production system. Highlighting the challenges of climate, slope and inconsistent rainfall, the EOF livestock/pasture couple reflected, “this land is best suited for a specific cropping style and we tried to ignore it.” The EFBO grain farmer shared how for the first time in his life he saw the local river go turbid in

2015 due to drought exacerbated by low snowfall and the recession of the glacier that provides the river's headwaters.

Based on literature stating reduction in yields is a potential obstacle in the transition to organic (Johnston, 2010; Lau et al., 2010), the EFBO farmers were asked if they saw any reduction in yields. Each mentioned that yield was actually higher than projected. During conventional production, the EFBO dairy achieved 78 pounds of milk per cow per day, pushing the cows for “every last drop.” During the transition year, the dairy reached 66 pounds per cow per day, which is 6lbs higher than expected. The EFBO dairy farmer believes they will get to 70 pounds per day per cow, but doesn't want to go any higher as he hopes to be comfortably profitable without pushing the animals.

Both the EFBO grain farmer and EFBO mixed vegetable farmer expressed surprise that organic yields were higher than expected. The EFBO mixed vegetable farmer saw a slight reduction in yields his first season as pest management strategies were figured out. He has now seen an actual increase in organic production over his conventional yields due to “better organic matter management.”

Barriers and Challenges: Marketing

Despite each having shown initiative and ingenuity when securing their current contracts and buyers, each farmer either explicitly or figuratively, expressed the challenge of **marketing**. With a focus on production challenges, the EFBO grain farmer admitted to having “not too much creativity” when it comes to marketing. The EOF mixed vegetable farmer stated most bluntly, “Marketing it a hassle.”

Linked with marketing is the obstacle faced by those with a significant *distance to market*. The EOF livestock/pasture farmers in particular lamented how far they are from consumers who are interested in, and able to afford, organic products. “Location, location, location. Market, market, market.” These words came from the EOF livestock/pasture couple as both advice to aspiring farmers and as a reflection of the challenges they have faced in rural northeast Oregon.

The mixed vegetable farmers both emphasized the challenge of selling a *time-sensitive product*. “Produce is a time bomb...key is to unload it [produce] fast,” stated the EOF mixed vegetable farmer. The EFBO mixed vegetable farmer also acknowledged this challenge stating, “you have to move produce within a week.”

Though not perishable in the way fresh produce is, the beef of the EOF livestock/pasture operation was also linked to a timeline. Given their scale of operation, they realistically could provide one cow a week to market, but because of their distance to market, this is not a viable option. They “need cooperators...more infrastructure or social structure” for smaller scale operations to collaborate in their area.

Barriers and Challenges: Social

The majority of challenges noted by the farmers easily fell into the categories of finances, production or marketing, but other, less straightforward interpersonal relationship and social issues were also expressed.

Being the *sole farmer* is a challenge for the BOF seed and EOF mixed vegetable farmers. “[It’s] overwhelming being spread so thin....challenge is maybe mentally...having help would help mentally,” the BOF seed farmer shared. To work

through this challenge, the BOF seed farmer plans to scale down his production while he builds infrastructure to house future farm employees.

Not wanting to deal with the paperwork and costs of having an employee, the EOF mixed vegetable farmer has found the growth of his business limited by the amount of work he can accomplish independently. One year he tried scaling up and found he “had no time” so now better understands what he can realistically undertake on his own.

While there are significant issues to face as a solo farmer, established farming families can face *interpersonal challenges*. When asked about the barriers to organic transition, the EFBO mixed vegetable farmer stated, “the older generation is a challenge.” He shared, “Dad wouldn’t do it [transition] unless we took the ball and ran with it” and continued, “the older generation likes crops they can grow well, even if they’re not necessarily making money on them.” He has witnessed other families where the younger generation has a hard time “changing things up” from the older generation and shares that his dad now feels good about the move to organic.

Stepping outside self and family, a *lack of collaborative community* was a challenge. The EOF livestock/pasture farmers found this a particular challenge in their rural northeast Oregon community. “When we need advice on cattle, we can ask a local, but not for crops” because people aren’t growing organic vegetables in the region. They wished for “more infrastructure or social structure” for smaller scale operations to collaborate in their area. All the other farmers emphasized the importance of networking and mentors, for both advice and marketing opportunities, so it is presumed that without that community of collaborators, more challenges would arise.

Discussion

This collection of six case studies sought to gain a more rich, in-depth understanding of what motivates farmers to transition and engage in certified organic farming. In addition, the challenges faced by these farmers during certified organic transition and production were identified and examined.

These farmers decided to go into organic production for a variety of reasons, with multiple motivations influencing each individual's decision. This is consistent with other research highlighting different rationales for transition to, and production of, certified organic products (Cranfield, 2009; Darnhofer et al., 2005; Fairweather, 1999; Sutherland, 2013).

Motivations for organic transition and production were grouped into three broad categories including economic, ideological and environmental and health motivations. Seeing experienced conventional farmers transitioning to organic for financial purposes aligns with other research findings on the motivations to transition (Cranfield et al., 2009; Darnhofer et al., 2005; Fairweather, 1999; Flaten et al., 2006). With the case study approach, farmers' narratives illuminated deeper reasons for transitioning to organic than just increased profitability. Underneath the desire for increased profits, these three EFBO farmers expressed motivations related to farm sustainability and family succession planning. Wanting to continue to farm, while supporting family, was the underlying theme that influenced the need for increased profits.

The BOF and EOF farms did not mention economic motivations as influencing their decision to farm organically, but were instead guided by ideological motivations. These motivations involved both large, abstract themes of social change and more

tangible themes around community development and support. Environmental and health concerns were also motivating factors for the BOF and EOF farms even if not plainly mentioned in the interview, they were inherent in their stories and reasoning. Seeing these ideological motivations for organic production in well-established and beginning organic farms aligns with findings in the literature (Cranfield et al., 2009; Darnhofer et al., 2005; Flaten et al., 2006). The EFBO farmers expressed a mix of philosophical, environmental and health motivations though these were not their primary influence to transition to organic.

Utilizing the case study approach allowed the opportunity for secondary motivations of the farmers to be extrapolated from the interviews. While not explicitly stated, these secondary motivations were apparent through the interview answers and conversation and would not have been revealed in survey research. Listening to the farmers, and gaining a better comprehension of their stories and practices, achieved a greater depth and understanding of their reasons for organic transition and production.

The challenges faced during organic transition and production fell into four broad categories including economic, production, marketing and social challenges. Farm size, production system and location were influencing factors on what challenges farmers faced and how they addressed those obstacles. Economic challenges included the cost of organic inputs and farm labor. Production challenges were significantly influenced by cropping system and included weed management, pests and diseases, soil fertility, availability of organic inputs, oversight of irrigation, recordkeeping and place-based challenges. Financial and production challenges are commonly perceived as barriers to

transition by conventional farmers (Johnston, 2010; Lau et al., 2010), but case study farmers also frequently mentioned marketing and social obstacles.

Each of the six farms explicitly mentioned marketing as a challenge. They also each shared a story about how networking, mentors and creativity had positively influenced their marketing and overall production. The exact opposite equation was also discussed: when farmers lacked supportive networks or knowledgeable mentors, the challenges they faced were amplified. This points to the importance of positive human interactions and supportive relationships in creating successful business opportunities and overcoming the litany of challenges faced by farmers. This connection would not have been identified were it not for the case study format and opportunity to hear farmers share their stories.

Conclusion

These case studies share the motivations and challenges faced by six certified organic producers in Oregon who have found their way to organic production through various paths. Utilizing a case study approach allowed farmers to share in-depth insights that provide an enhanced understanding of the issues faced by organic and transitioning producers.

Farmer motivations for organic transition and production fell into three broad categories: economic, ideological and environmental and health motivations. Those working with farmers considering transition should keep in mind that while there may be an explicit, primary motivation for transition, deeper, secondary motivations are often present and can be addressed once identified. For farmers, having awareness of what is

motivating them to transition can help clearly define goal and objectives for their operation.

While all farmers face challenges in their work, those faced by organic farmers are distinct and require a different set of tools and techniques to overcome them. Challenges identified in these case studies fell into four broad categories: economic, production, marketing and social challenges. Factors such as cropping system, farm size, farming experience and location influenced the challenges faced by farmers.

Having a realistic understanding of what challenges may be present with organic transition and production allows both farmers and their support network to be prepared and educated. These case studies also highlight that certain preconceived notions about organic challenges, such as reduced yield, may not be significant issues. Further qualitative information and insights about preconceived versus real challenges would be of significant service when working with farmers considering transition.

Market demand for organic products has experienced double-digit growth each year, but there is a lag in organic transition and domestic organic production. The hesitancy to transition to organic production may be due to a number of real or perceived challenges. Having a better understanding of farmer motivations and real challenges allows for increased farmer education and support through the organic transition process and beyond. For farmers, having clearly defined goals and an understanding of potential organic challenges and solutions can empower them to take advantage of the organic market opportunity and create a successful farm and business. While this research

focused on producers within the state of Oregon, it is hoped the insight provided by these farmers adds to and deepens the national conversation about motivations and challenges domestic farmers face in their transition to organic agriculture.

CHAPTER V: GENERAL SYNTHESIS AND CONCLUSIONS

This research investigated the motivations, barriers and challenges farmers face when transitioning to organic agriculture. Both quantitative and qualitative research methods were utilized and organic farmers from around Oregon, with varying levels of experience, contributed their insights. Through the combination of survey research and case studies, a more comprehensive understanding of farmer perspectives on organic transition was achieved, with implications for research, education and outreach.

Through analysis of quantitative data, three distinct farmer typologies were identified based on farming experience: BEGINNING ORGANIC FARMERS, EXPERIENCED FARMERS BEGINNING ORGANIC and EXPERIENCED ORGANIC FARMERS. Using these groups as a lens to analyze the data, differences and similarities among the farmer typologies were illuminated.

Farmer motivations for organic transition and production fell into three broad categories: economic, ideological and environmental and health motivations. Both the quantitative and qualitative aspects of this study found those who were EXPERIENCED FARMERS BEGINNING ORGANIC were primarily driven by economic motivations. EXPERIENCED and BEGINNING ORGANIC FARMERS were more motivated by ideological and environmental and health concerns. Those working with farmers considering transition should keep in mind that while there may be an explicit, primary motivation for transition, deeper, secondary motivations are often present and can be addressed once identified.

Through interviews with farmers, it was evident that motivations to transition could also be categorized as abstract or concrete. The economic motivations and many of the environmental and health motivations were tangible (e.g. increased profit or limiting pesticide exposure). The ideological motivations and some environmental and health motivations were more abstract (e.g. social change or improved environmental quality). Knowing to appeal to either very specific goals or more expansive ideals can help those encouraging farmer transitions to communicate a more resonant message. For farmers, having awareness of what is motivating them to transition can help clarify goals and objectives for their operation. Understanding farmer obstacles to organic transition can help education and outreach programs better address farmer concerns. Through quantitative research, three broad categories of obstacles were determined: economic, production and market obstacles. The case studies allowed for more in-depth conversation and exploration and a fourth category was determined: social obstacles.

Five obstacles were identified as substantial in both the quantitative and qualitative research and included: cost of labor, recordkeeping requirements of organic certification, weed management, pest or disease control and cost of organic inputs. These five obstacles were either economic or production obstacles and were of highest concern in the quantitative section. While economic and production challenges were still highlighted in the case studies, the significance and impact of marketing and social obstacles were expressed to a greater extent.

Of the significant obstacles, most were externally influenced by factors beyond direct control of farmers such as policy, market dynamics and foreign affairs. Obstacles

internal to farm management and operation (e.g. weed management and pest or disease control) were in the minority.

Each farmer typology had a different perception of the obstacles faced when transitioning to organic. The EXPERIENCED FARMERS BEGINNING ORGANIC listed the greatest number of obstacles, while the BEGINNING ORGANIC FARMERS listed the least. The EXPERIENCED ORGANIC FARMERS aligned with the obstacles acknowledged by the aggregate. This difference in perception of obstacles could be due to a number of influencing factors including: production system, acreage, number of employees, farming mindset and more.

Education about organic transition should address the challenges determined in this study and be tailored to meet the needs of each typology. Providing the skills, knowledge and connections needed to address these obstacles will help more farmers successfully transition to organic production. By increasing the number of farmers who are motivated and prepared to transition, there is a greater opportunity to meet the growing market demand for organic products.

Realizing farmers fall along a spectrum of experience and perception, actions taken to meet farmer needs should be tailored for each distinct typology. Having a better understanding of farmer motivations and challenges will allow for more effective outreach efforts, targeted research, creation of appropriate policy and increased farmer education and support through the organic transition process and beyond.

REFERENCES CITED

- Ahearn, M. and D. Newton. 2009. *Beginning farmers and ranchers*. USDA Economic Research Service, Economic Information Bulletin Number 53. Retrieved from: http://www.ers.usda.gov/webdocs/publications/eib53/9417_eib53_1_.pdf
- Bernard, H.R. 2000. *Social Research Methods – Qualitative and Quantitative Approaches*. Thousand Oaks, CA: Sage Publications, Inc.
- Best, H. 2008. Organic agriculture and the conventionalization hypothesis: A case study from West Germany. *Agriculture and Human Values* 25: 95-106.
- Beus, C.E. and R.E. Dunlap. 1990. Conventional versus alternative agriculture: The paradigmatic roots of the debate. *Rural Sociology* 55(4): 590-616.
- Corbin, J. and A. Strauss. 2014. *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. Thousand Oaks, CA: Sage Publications, Inc.
- Cranfield, J., S. Henson, and J. Holliday. 2010. The motives, benefits, and problems of conversion to organic production. *Agriculture and Human Values* 27: 291-306.
- Darnhofer, I., W. Schneeberger, and B. Freyer. 2005. Converting or not converting to organic farming in Austria: Farmer types and their rationale. *Agriculture and Human Values* 22: 39-52.
- DePHELPS, C., C. Williams, J. Foltz, J. Potter, A.S. Agenbroad, and K. Faunce. 2005. Northwest direct farm case studies. Retrieved from: <http://www.nwdirect.wsu.edu/studies/index.html#oregon>
- Duram, L. 2000. Agents' perceptions of structure: How Illinois organic farmers view political, economic, social, and ecological factors. *Agriculture and Human Values* 17: 35-48.
- Fairweather, J.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.
- Flaten, O., G. Lien, M. Ebbesvik, M. Koesling, and P.S. Valle. 2006. Do the new organic producers differ from the 'old guard'? Empirical results from Norwegian dairy farming. *Renewable Agriculture and Food Systems* 21(3): 174-182. doi: 10.1079/RAF2005140
- Garner, R. 2005. Post-It® note persuasion: A sticky influence. *Journal of Consumer Psychology* 15(3): 230-237.

REFERENCES CITED (Continued)

- Greene, C. 2013. Growth patterns in the U.S. organic industry. *Amber Waves*. Retrieved from: <http://www.ers.usda.gov/amber-waves/2013/october/growth-patterns-in-the-us-organic-industry/>
- Glaser, B.G. and A.L. Strauss. 1967. *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Chicago: Aldine Publishing Company.
- Heckman, J. 2005. A history of organic farming: Transitions from Sir Albert Howard's *War in the Soil* to USDA national organic program. *Renewable Agriculture and Food Systems* 21(3): 143-150. doi: 10.1079/RAF2005126
- Johnston, S. 2010. Assessing farmer interest in transition to organic production and barriers to expansion of organic production in New York state. Department of Agriculture and Markets, Albany, New York.
- Klonsky, K., and C.R. Greene. 2005. *Widespread Adoption of Organic Agriculture in the US: Are Market-Driven Policies Enough?* Paper presented at the American Agricultural Economics Association Annual Meeting, Providence, Rhode Island 24 – 27 July. Retrieved from: <http://purl/umn.edu/19382>
- Koesling, M., A. Loes, O. Flaten, N.H. Kristensen, and M.W. Hansen. 2012. Farmers' reasons for deregistering from organic farming. *Organic Agriculture* 2: 103-116. doi: 10.1007/s13165-012-0030-y
- Kristiansen, P. and C. Merfield. 2006. Overview of organic agriculture. In: Kristiansen, P., A. Taji, and J. Reganold. *Organic Agriculture: A Global Perspective*. Collingwood: CSIRO Publishing. 1-23.
- Lamine, C. 2011. Transition pathways towards a robust ecologization of agriculture and the need for system redesign. Cases from organic farming and IPM. *Journal of Rural Studies* 27: 209-219.
- Lamine, C. and S. Bellon. 2009. Conversion to organic farming: A multidimensional research object at the crossroads of agricultural and social sciences. A review. *Agronomy for Sustainable Development* 29: 97-112. doi: 10.1051/agro:2008007
- Lau, M., R. Hanagriff, D. Constance, M. York, B. VanDelist and L.M. Higgins. 2010. Discerning differences among producer groups and organic adoption barriers in Texas. *Journal of Food Distribution Research* 40(2): 124-164.
- MacRae RJ, Hill S.B., Henning, J., and Mehuys, G.R. 1990. Farm-scale agronomic and economic conversion from conventional to sustainable agriculture. *Advances in Agronomy* 43: 155-198.

REFERENCES CITED (Continued)

- McBride, W. and C. Greene. 2015. Despite profit potential, organic field crop acreage remains low. *Amber Waves*. Retrieved from: <http://www.ers.usda.gov/amber-waves/2015/november/despite-profit-potential-organic-field-crop-acreage-remains-low/>
- Norse, D. and J. Tschirley. 2003. Agriculture and the environment: Changing pressures, solutions and trade-offs. In: Bruisma, J. *World Agriculture: Towards 2015/2030. An FAO Perspective*. London: Earthscan Publications and Food and Agriculture Organization of the United Nations. 331-356.
- Oregon Tilth, Inc. 2016. *Certification Process*. Retrieved from: <https://tilth.org/certification/certification-process/>
- Organic Trade Association. 2016. *U.S. Organic: State of the Industry*. Washington D.C.: Organic Trade Association. Retrieved from: http://ota.com/sites/default/files/indexed_files/OTA_StateofIndustry_2016.pdf
- Padel, S. 2001. Conversion to organic farming: A typical example of the diffusion of an innovation? *Sociologia Ruralis* 41(1): 40-61.
- Sahm, H., J. Sanders, H. Nieberg, G. Behrens, H. Kuhnert, R. Strohm, and U. Hamm. 2012. Reversion from organic to conventional agriculture: A review. *Renewable Agriculture and Food Systems* 28(3): 263-275.
- Salant, P. and D.A. Dillman. 1994. *How to Conduct Your Own Survey*. New York: John Wiley & Sons, Inc.
- Smukler, S. M., L.E. Jackson, L. Murphree, R. Yokota, S.T. Koike, and R.F. Smith. 2008. Transition to large-scale organic vegetable production in the Salinas Valley, California. *Agriculture, Ecosystems & Environment* 126: 168–188. doi:10.1016/j.agee.2008.01.028
- Stephenson, G., L. Gwin, M. Powell, and A. Garrett. 2012. *Enhancing organic agriculture in Oregon: Research, education and policy*. Corvallis, OR: Oregon State University.
- Stofferahn, C. 2009. Personal, farm and value orientations in conversion to organic farming. *Journal of Sustainable Agriculture* 33: 862-884. doi: 10.1080/10440040903303595
- Strochlic, R. and L. Sierra. 2007. *Conventional, mixed and “deregistered” organic farmers: Entry barriers and reasons for exiting organic production in California*. California Institute for Rural Studies.

REFERENCES CITED (Continued)

- Sutherland, L. 2013. Can organic farmers be ‘good farmers’? Adding the ‘taste of necessity’ to the conventionalization debate. *Agriculture and Human Values* 30: 429-441.
- Taylor, J.E., D. Charlton, and A. Yunez-Naude. 2012. The end of farm labor abundance. *Applied Economic Perspectives and Policy*. 34(4): 587-598.
- USDA. 1980. *Report and recommendations on organic farming*. Retrieved from: https://pubs.nal.usda.gov/sites/pubs.nal.usda.gov/files/Report%20and%20Recommendations%20on%20Organic%20Agriculture_0.pdf
- USDA Agricultural Marketing Service. 2015. *Organic certification cost share programs*. Retrieved from: <https://www.ams.usda.gov/sites/default/files/media/OCCSP%20Fact%20Sheet.pdf>
- USDA National Agricultural Statistics Service. 2015. *Organic farming: Results from the 2014 organic survey*. Retrieved from https://www.agcensus.usda.gov/Publications/2012/Online_Resources/Highlights/Organics/2014_Organic_Survey_Highlights.pdf
- USDA National Agricultural Statistics Service. 2016. *Data release: 2015 certified organic survey*. Retrieved from: https://www.nass.usda.gov/Newsroom/Executive_Briefings/2016/09_15_2016.pdf
- US Government Publishing Office. 2016. Electronic Code of Federal Regulations: Certification. Retrieved from: <http://www.ecfr.gov/cgi-bin/text-idx?SID=32556056877698845ce1db45a5b00db9&mc=true&node=sp7.3.205.e&rgn=div6>
- Veldstra, M.D., Alexander, C.E., and Marshall, M.I. 2014. To certify or not to certify? Separating the organic production and certification decisions. *Food Policy* 49(2): 429–436. doi:10.1016/j.foodpol.2014.05.010
- Western Extension Marketing Committee. 2003. *Western Profiles of Innovative Agricultural Marketing: Examples from Direct Marketing and Agri-Tourism Enterprises*. Cooperative Extension, The University of Arizona. Publication AZ1325.
- WHO and FAO. 2007. *Organically Produced Foods*. 3rd edition. Rome, Italy: World Health Organization and Food and Agriculture Organization of the United Nations.
- Yin, R. 2014. *Case Study Research*. 5th edition. Thousand Oaks, CA: Sage Publications, Inc.
- Youngberg, G. and S.P. DeMuth. 2013. Organic agriculture in the United States: A 30-year retrospective. *Renewable Agriculture and Food Systems* 28(4): 294 – 328.

APPENDIX A: ORGANIC TRANSITION SURVEY CONTENT

Demographics	<ul style="list-style-type: none"> • Years Farming • Years farming using “organic” methods • Total acres in production • Farm production category • Farm certification status • Farmer age
Motivations	<ul style="list-style-type: none"> • Potential increase in profit • Access to expanding organic market • Specific market opportunity or contract • Concerns about human health • Concerns about environment • Enhancement of farm sustainability • Fits my and/or my family’s values
Barriers: Economic	<ul style="list-style-type: none"> • Cost of labor • Cost of organic certification • Cost of organic inputs
Barriers: Production	<ul style="list-style-type: none"> • Learning process • Planning crop rotations • Managing soil fertility • Pest or disease control • Weed management • Livestock health management • Reduced yields • Availability of organic livestock feed • Availability of organic inputs • Access to knowledgeable technical expertise on organic production • Availability of labor • Recordkeeping requirements of certification
Barriers: Marketing	<ul style="list-style-type: none"> • Finding buyers/market for organic products • Obtaining adequate prices during transition • Availability of organic processing facilities
Qualitative	<ul style="list-style-type: none"> • What advice would you give farmers considering the transition to organic? • What else would you like to say about your experience with the transition to organic?

APPENDIX B: SEMI-STRUCTURED INTERVIEW QUESTIONS

These questions below provided a guideline for the interview, but each question may not have been specifically asked of each case study farmer. Emphasis was on establishing good rapport and having a meaningful conversation with each farmer rather than following a script. If a question was not applicable, or if the farmer answered the question in the course of conversation, the question was not explicitly asked. Certain questions were asked only if a farmer was of a specific farmer typology. Typology specific questions are denoted with an EFBO (Experienced Farmer Beginning Organic), EO (Experienced Organic Farmer) or BOF (Beginning Organic Farmer).

Oral Consent:

Do you understand what participation entails and consent to participate in this study?

Demographics:

How many years have you been farming?

How many years have you been farming using “organic” methods?

How many acres are in production?

What production system or type(s) of crop best describes your farm?

Which best describes your farm:

Whole farm certified organic

Split operation: part certified organic, part non-organic

Transitioning all or port of farm to certified organic

Did you certify land that had been fallow, was already certified or did you have to go through the 3-year transition period?

EFBO - Did you receive any financial support/incentives when making the transition?
Did you receive premiums for your transitional crops?

EOF/BOF - Do you receive any financial support/incentives for farming organically or have you received any previously?

Motivations:

EOF/BOF - What motivates you to farm organically?

EOF - Access to expanding market for organics and a potential increase in profit was highly ranked as a motivation for pursuing organic certification among experienced organic growers. Could you share your insights on why this might be the case?

EFBO - What motivated you to transition to organic?

EFBO - How long had you considered transitioning before actually doing so?

EFBO - What gave you the confidence to make the switch?

Challenges and Obstacles:

EFBO - Please tell me about your transition “learning curve.”

EFBO - What is the greatest challenge you faced when first making the switch to organic management? How did you overcome this challenge?

EFBO - Reduced yields have often been cited as a concern when transitioning, do you think this is a legitimate concern?

EFBO - We found that many transitioning to organic were motivated by a specific market opportunity, buyer contract or to access the expanding organic market yet many of those same people listed finding buyers and/or a market for their organic products as a challenge. Could you share your insights on why this might be the case or if you experienced a similar challenge?

EOF/BOF - Please tell me about your organic farming “learning curve.”

EOF/BOF - What is the greatest challenge you face with your farm and business?

What’s your experience with weed management and pest and disease control? Do you have any tips to share? Do you have suggestions about what useful information or research you’d like to see in those topic areas?

The cost of organic certification along with the recordkeeping requirements of certification were highly ranked obstacles, could you share your thoughts on those concerns?

Other challenges or obstacles you’d like to mention?

Positive Outcomes:

What is going better than expected? (productivity, labor, profit, etc)

EFBO - What makes you most proud about your transition? What's been the most satisfying?

EOF/BOF - What makes you most proud? What's been most satisfying about farming organically?

Advice & Outlook:

BOF - Do you have any interest in scaling up? What would that farm and business operation look like to you?

EFBO - With 20/20 hindsight, what would you do differently if transitioning again?

What advice do you have for farmers who are considering making the transition to organic?

