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## Perceptions of the Underrepresentation of Women in Agriculture and Motives for Movement into the Industry

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# Perceptions of the Underrepresentation of Women in Agriculture and Motives for Movement into the Industry

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Honors Research  
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*In the U.S., agriculture has historically been a male-dominated industry. Women have been underrepresented in agriculture even as they have played important roles on and off the farm. In the last 25 years, however, women have been moving into agriculture and increasing their visibility in positions on and off the farm even in light of structural changes to agriculture and environmental concerns. Learning motives for moves into the industry can help supply information about the changing roles of women in agriculture and help determine whether agricultural trends follow other occupational trends. Giving a voice to women that have been underrepresented can help them continue to alter the roles expected of them and policies can be developed to support them. An in-depth literature review and 16 in-depth interviews were conducted in the Midwest region of the United States. Twelve interviewees had roles on the farm, 7 women had roles off the farm, and 3 women had roles on and off the farm. It was found that women have been underrepresented for a number of reasons including the social construction of gender, patriarchal households, documentation issues, cultural and familial changes. Regardless, women are changing the roles expected of them and opportunities are increasing, especially in the sustainable agriculture, locavore and local food movement. Agriculture does not follow the occupational trends of women moving into male-dominated industries and women have multiple reasons for moving into the industry. Technical and social barriers women experience when they enter agriculture have been overcome with networking.*

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## Introduction

In the United States, agriculture has been a male-dominated industry. In fact, for a large portion of history, farm operators have typically been men. Women have always operated farms but at lesser rates than men, and while they have been crucial members of family farms, information about their work on those farms is not readily available. However, agriculture is complex, consisting of farm production, processing, distribution and other sectors. Women have been underrepresented on and off the farm.

Interestingly, even though men still greatly dominate the agricultural industry, women have moved steadily into the industry for the last 25 years. Although the number has doubled in the last 25 years, only about 10% of principal farm operators are women ([www.ers.usda.gov](http://www.ers.usda.gov)). Today, 30% of U.S. farm operators (whether they are principal or not) are women ([www.ers.usda.gov](http://www.ers.usda.gov)). As women have increased their responsibilities on farms, they have gained recognition off the farm in leadership positions within agricultural organizations and have increased their visibility in other parts of the industry.

The agricultural industry has been declining in popularity over time, especially as a primary occupation. In fact, today farm production represents less than 2 percent of U.S. gross domestic product (GDP) (Antle, 2009, 1). One of the primary reasons for this is a number of structural alterations such as the large commercial farms dominating the market. As a result, small-scale farming is not as profitable as in the past. With large portions of subsidies dedicated to large commercial farms and small-scale farming becoming less profitable, farmers can no longer rely on farming as their primary occupation. Some farm families will rely on other occupations to supplement their incomes.

Along with the structural changes within the agricultural system, the environment it relies on is also changing. Changes in the weather can alter the success of growing seasons and changes in production (such as the heavy use of chemicals or monocropping) can affect the vitality of the soil. These changes will continue to affect agricultural productivity and society.

However, despite the changing dynamics of the industry, women have been entering positions on and off the farm. Women on farms have diversified their operations and involved themselves in the cultivation of sustainable food systems. Although trends of women moving into historically male-dominated industries have been studied, trends with agriculture have not. It is unclear whether the influx of women follows the occupational trends of women moving into male-dominated industries; when men explore other opportunities, women move into their former positions. Learning the reasons why women move into agriculture will allow for a better sociological understanding of women in agriculture as society changes. Gathering this

information will give a voice to the underrepresented women in agriculture and allow them to continue altering their expected roles. Additionally, society can develop policies and programs to more accurately support them.

## **Literature Review**

Subsistence farming, or growing enough food to support a family, was a characteristic of early agriculture because a farm could be smaller than an acre. Modern industrial agriculture in the United States is very complex. For example, farm production is not only the production of food for humans; some crops produced are used for industrial purposes such as ethanol and medicines (Banerjee, 2011). Furthermore, agriculture includes more than just production on the farm. It includes the transportation, processing, and distribution of food, not to mention the sectors involved in business, laws and regulations, research and more. According to a publication entitled *Resources For The Future*, farm production represents less than 2 percent of the U.S. gross domestic product (GDP) while the sectors involved with transportation, processing, and distribution represents more than 10 percent of GDP (Antle, 2009, 1). Although the actual farming portion of agriculture is small compared to the entire industry, it is central to the functioning of other sectors. This research will focus more closely on farm production.

The literature review will introduce the information available on women in agriculture and changes to the industry as well as what is known already about women moving into male-dominated industries. The report will then describe the methods used to conduct the research. The report will conclude with a discussion of the findings and results.

### ***Underrepresentation of Women in Agriculture***

Throughout U.S. history, the majority of farm operators have been men. In fact, in addition to racial minorities, the USDA describes women as “socially-disadvantaged farmers” because white men dominate the industry. However, over the last century, there has been an increase of women moving into the occupation. Some of these occupational transitions are mid-career changes. In the last 25 years, the number of women in principal operator roles has doubled. This means that the primary operators documented on those farms were women and there have been more female principal operators over time. Of the farms that reported more than one operator, more than 40 percent of the additional operators are women and spouses (www.ers.usda.gov). (See Appendix A for visual representation.) As this proportion of female principal operators has grown, women’s roles have typically been in the operation of smaller farms and they have diversified the types of farms they operate (www.ers.usda.gov). Furthermore, women are more likely to have inherited their farms and to be starting farming (as opposed to

continuing an existing operation) than men (Korb, 2004). Reasons behind these trends will be explored in more detail later.

There are off-farm industry examples of underrepresentation of women in agriculture. The numbers of women earning doctorates in agricultural sciences and those becoming faculty and deans of agriculture are growing. In addition, women are leaders of agricultural organizations and women with jobs on and off the farm are members of these organizations. Agriculture is still largely dominated by men, but women are increasing their numbers in the industry.

#### *Female Principal Operators*

According to the statistics published by the United States Department of Agriculture (USDA) census of agriculture, the number of farms primarily operated by women increased by 58% between the years of 1978 and 1997 and by about 45% between 1997 and 2007 (Korb, 2004; [www.agcensus.usda.gov](http://www.agcensus.usda.gov)).

In 2007, women principal operators owned 306,209 farms and 64,264,566 acres ([www.agcensus.usda.gov](http://www.agcensus.usda.gov)). These numbers are much lower than the farms and acres owned by men but they are increasing over time. Of the total number of farms owned by female principal operators in 2007, 85% of all female principal operators were full owners and 85% of the total was a family or individual operation ([www.agcensus.usda.gov](http://www.agcensus.usda.gov)). The most common farm size for women in 2007 was 10 to 49 acres, which was about 35% of farms; the least common was 500 acres or more. To compare these farm sizes, the largest farm size category on the census of agriculture is documented at 2,000 acres or more ([www.agcensus.usda.gov](http://www.agcensus.usda.gov)). This follows historical trends that women principal operators are more likely to operate smaller farms (Korb, 2004).

The types of farming in 2007 that women engaged in from most common to least common begin with 1) crop farming (not specified) 2) sugarcane, hay and all other crop farming, 3) beef cattle ranching and farming, 4) animal aquaculture and other production, 5) sheep and goat farming, etc. The other eight categories listed on the census of agriculture also dealt heavily with animal care as well as the production of fruits and vegetables, grains and more. This list may not be exhaustive but it shows that women are commonly handling animals, which follows historical trends that women have been increasingly specializing in animals care (Korb, 2004).

Of the total number of farms owned by female principal operators in 2007, just over 80% of farms with female principal operators were earning less than 25% of the total household income ([www.agcensus.usda.gov](http://www.agcensus.usda.gov)). The fact that female primary operators are not earning a large portion of household income is not surprising because farming is becoming less popular as a primary occupation for male and female farm operators. For all of the farm operators in the U.S.

in 2007, farming is 23% less likely to be a primary occupation than it was in 2002 ([www.agcensus.usda.gov](http://www.agcensus.usda.gov)). The census of agriculture did not define which types of other occupations were being held. However, it is likely that individuals were working in agriculture off the farm or in other businesses in order to receive health benefits. There are other reasons that the majority of farms with female principal operators were not earning large portions of household income. This could be due to the nature of the off-farm work of the women or the occupations of the others contributing to the household income. One source (Korb, 2004) suggested that the falling numbers of those farming for their primary occupation could be due to retiring operators. Although these trends regarding the increase in women and the types and success of farms they are operating can be gathered through the available statistics, the reasons behind them are not. This will be further analyzed later.

### *Female Operators*

The census of agriculture began collecting data on women as primary operators in 1978. Beginning in 2002, up to three operators were documented per farm by the census of agriculture and other census takers.<sup>1</sup> Before 2002, only the principal operator was counted per farm because the census of agriculture defined a farm operator as the single person who made managerial decisions on the farm, and this individual was typically the husband (Korb, 2004). This affected the documented number of women in agriculture.

Just about 34% of female farm operators in 2007 were farming as their primary occupation ([www.agcensus.usda.gov](http://www.agcensus.usda.gov)). Even though numbers of female farm operators are increasing, it is not surprising that farming is not more commonly their primary occupation. Historically, women have been less likely to report farming as their primary occupation (Korb, 2004). As of 2007, the two most common age groups for a female farm operator were 45 to 54 years of age and 55 to 64 years of age ([www.agcensus.usda.gov](http://www.agcensus.usda.gov)). All age groups grew between 2002 and 2007 except 34-44 ([www.agcensus.usda.gov](http://www.agcensus.usda.gov)). This may speak to historical trends that women are inheriting farms more than men and that younger women are farming more than they were before (Korb, 2004). Another characteristic of female farm operators that follows historical trends is that they are primarily White, at approximately 95% of farm operators ([www.agcensus.usda.gov](http://www.agcensus.usda.gov), Korb, 2004).

As of 2007, of the farms in the U.S. with up to three women operators, about 32.5% have female principal operators ([www.agcensus.usda.gov](http://www.agcensus.usda.gov)). In addition, while the percentages of male

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<sup>1</sup> These other censuses include the Agriculture Resource and Management Survey (ARMS) conducted by the Economic Research Service (ERS) and the National Agricultural Statistics Service (NASS) and the Agricultural Economics and Land Ownership Survey (AELOS) conducted by the NASS (Korb, 2004).

operators have increased by less than one percent and total acreage owned by men has decreased, the percentage of female operators has increased by almost 30% and the acreage controlled has increased by about 8.2% in the five years between 2002 and 2007.

Regardless of the strides women have made in farming as operators and a change in documentation, the number of farms and the acres occupied (although increasing) are still substantially less than what is occupied by males. For example, in 2007, males primarily operated 1,898,583 farms, about 86% of the total, while females were primary operators of 306,209 farms at about 14% of the total. However, the numbers of women on the farm and owning farms are growing.

#### *Institutions of Agriculture*

Women have become leaders in institutions of agricultural instruction, are receiving doctorates, and are becoming faculty and deans. The percentage of doctorates granted to women in agricultural sciences “has steadily increased over the past 40 years from less than 1 percent in 1966 to 36 percent in 2005” (Crow, Goldberger, 2009, 510), although the percentage remains lower than other academic fields. National-level data from 2003 shows that for U.S. scientists, 17% of agricultural/food scientists, 36% of biological scientists, and 17% of environmental life scientists are women” (Crow, Goldberger, 2009). Doctoral degrees have been increasing for women in general and for women in agriculture.

Women are faculty for institutions of agriculture and are increasing their visibility as educators. In 2007, secondary female agriculture teachers were 27% of the agricultural education field, and Future Farmers of America (FFA; a national agriculture education organization) had about 41% female student membership (Baxter, et. al, 2011, 13). Furthermore, an example of a leadership role women have assumed off the farm is as a dean of agriculture. Case studies have been conducted on these women and the factors that contributed to the success or failure of their careers.

#### *Women in Agricultural Organizations*

A common trend with women in agriculture, in addition to the increasing numbers on the farm, is the number of women leading agricultural organizations. Throughout history, women have been active in political and social organizations (Tanner, 1999) and this is especially true with the post WWII increase of women in agriculture.

An example of a successful female agricultural organization is Women in Farm Economics (WIFE). Unlike the farm organizations led by males, this organization, among others, “cultivated female authority on agricultural issues and placed women directly in the public realm of state and federal politics” (Devine, 2009, 117). This organization had incredible success in the

mid-1970s. Farm and ranch women came together from across the United States to “lobby politicians, educate the public, and raise awareness of economic hardship” (Devine, 2009, 118). These tactics worked well; in just one year, more women had been recruited, the organization had testified before Congress for the stabilization of commodity prices, and was getting recognized on numerous forms of media. There was not an immediate policy change (Devine, 2009) but their activism proved to be more or less successful due to the number of women organized and activities undertaken. This group portrayed themselves as average farm women but was later critiqued to be exclusive and had trouble maintaining membership. This should not take away the fact that the organization empowered many women and made progress for the family farm.

A modern example of this can be seen in a study on women in agriculture done in Arkansas in 2006. “Of all respondents [on and off the farm], 72% were in at least one organization, and 48% were in two or more; 42% of women were leaders in at least one organization, and 19% were leaders in two or more” (Albright, 2006, 1320). Characteristics of these leaders included youth residence (most lived on farms), birth order (first or oldest child), and parents’ education and occupation (typically high school or greater education, typically self-employed parents) (Tanner, 1999). One woman, Mily Treviño-Sauceda, founder of the Organización de Líderes Campesinas (a support network for women farm workers) in California, is an example of a leader in a successful organization. In 1975, Mily Treviño-Sauceda and her family became advocates for fair treatment for workers in the field and organized other families in the fight for “better wages, bathrooms, health insurance, and field sanitation.” The Treviño-Sauceda family even lobbied companies about their pesticide use to better the health of their family and community (Costa, 2010). In addition, they have held statewide conferences for farm worker women. The recognition women receive from their positions in these organizations helped them earn respect and gain access to more rights in the industry (Harcourt, 2012). These examples of women in agricultural organizations help portray off-farm roles for women.

#### *Reasons for Underrepresentation of Women in Agriculture*

Patriarchal relations, difficulty in documentation, and lack of educational opportunities have been suggested by different sources as reasons for the underrepresentation of women in agriculture. All of these reasons appear to have played a role in the underrepresentation of women.

Sachs (1996) stated that, “Patriarchal relations on family farms set the context for gender relations in rural areas, but with changes in family farms, patriarchal authority is shifting and loosening” (123). Historically, women have been vital members of the farm; their on-farm duties and tasks in the home were crucial for the survival of farm households (Sachs, 1996). However, the tasks women completed were not classified as work. The chores women would do were not

seen as great achievements even though the tasks could keep a farm from going out of business (Tanner, 1999). Fortunately, patriarchal authority over gender relations has been changing over time.

The lack of information available for women in agriculture may be due to a difficulty in documentation (Lobao, Meyer, 2001). As mentioned earlier, women's work on the farm and for the household has not always been documented with the census of agriculture. In 1978, data collection for women principal operators began. However, prior to 2002, the agriculture census only counted one person per farm as an operator (Korb, 2004). This eliminated other operators, especially women, who were out of the farm unit. Other familial and legal partnerships or relationships were not counted either. This affected the amount of information available about women farmers (Korb, 2004).

One source (Albright, 2006), recognized that there were many reasons for women increasing their visibility in off-farm roles. According to this source, women may take an off-farm job in order to supplement low earnings on the farm and to avoid risks associated with relying solely on a farm income. For those that have no background in agriculture, the expansion of educational opportunities may help increase female representation off the farm. For example, for many years, positions in agricultural organizations were held by men, "but because of the expansion of education opportunities, more women are choosing college programs that prepare them for important positions in agricultural fields" (Albright, 2006). Therefore, women may have been underrepresented in off-farm roles because of a lack of educational opportunities. A lack of educational opportunities and the other factors offered all contribute to the underrepresentation of women. While this section discussed some of the reasons behind the underrepresentation of women in agriculture, the next discusses occupational trends.

### ***Occupational Trends***

The social construction of gender assists in the development of male-dominated industries but gender roles are changing. Women face challenges as they move into male-dominated industries but find ways to overcome the social challenges and job stress by striving to succeed and seeking the support of their peers.

### ***Social Construction of Gender***

Male- and female-dominated industries come from the social construction of gender. That which is feminine and masculine are defined by society and then socialized to everyone. As a result, there is a difference between what is considered to be work for men and work for women. For example, we expect soldiers in the military to have "'masculine' traits – strength, aggressiveness, emotional detachment; we assume that nursing requires 'feminine qualities –

nurturing, caring, and passivity” (Williams, 1989, I). The male-domination of agriculture is a result of jobs that are socialized to be appropriate for males due to the physical requirements of work in the field and the leadership opportunities off the farm. Regardless of the male-dominated nature of agriculture, both genders are represented.

Men and women in the same industry can have different roles and tasks. This may lead to differential treatment and “stratification within the profession is often justified on the grounds that men and women bring unique abilities with them” (Williams, 1989, 70, 115). This can also lead to difference in payment. However, this is problematic because sexual stratification of work is not the result of the different personality traits held by men or women, but a product of an inability to accept women as equals (Williams, 1989, 141). Some women remark about how everyone has been conditioned to believe only men can do jobs in construction, for example, and have reminded male workers that it isn’t a man’s trade but merely a male-dominated trade” (Martin, 1988, 43, 64). The social construction of gender is apparent in farming because of the male-dominated nature of the industry and the expected roles for women. However, there is evidence that women’s role on the farm is changing and opportunities for women off the farm are increasing regardless of gender construction.

#### *Post World War II Women in Agriculture in the U.S.*

Perception of women in agriculture has changed in the U.S. over time. Women’s role on the farm, for example, changed during World War II when many men went into the military and today, women still hold main operating roles on the farm.

During World War II, many women went to work because men were drafted, and many went to work as farmers and farm workers. The post-war number of females in the workplace compared to the pre-war numbers had increased by about 173 percent (Carpenter, 2000), and agriculture followed the trend. Regardless of the success women had in the workplace, perceptions were not always positive. For example, publications at the time gave different opinions of women’s role on the farm. While one would state that women’s role out in the field was important to the family and vital to agriculture, another would offer that women were too busy in the house to work outside and that their choice to work outside would break up their marriages (Carpenter, 2000). Even women’s perceptions of women working were negative; “I don’t think a woman’s place is outdoors; only 13.5% of women surveyed thought that women should engage in field work” (Carpenter, 2000, 469). This is an example of how women’s role on the farm changed and some of the social stigmas that surrounded that change. Luckily, even with societal pressures, many women remained in their jobs and “moved toward acceptance of themselves as farm partners rather than homemakers” (Carpenter, 2000, 474). An increase in the

number of women in agriculture and changes in perception among members of society had helped to alter the role of women in agriculture today.

### *Occupational Trends*

Industry in the U.S. has undergone a number of changes in the last few centuries. In the early 20<sup>th</sup> century, a third of the labor force worked in agriculture; forestry or fishing. However, by the end of the century, this proportion was less than 4 percent. Even as agriculture was declining, service industries were growing (Reskin, Roos, 1990). The composition of the labor force changed as the main industries changed. Married women, and those with children, are some of the women that made up this growth in the labor force. Even though women had made progress into these male-dominated industries, it was only in some occupations and pay was not equal. Some of the occupations that were ‘feminized’ included clerical workers, telegraph and telephone operators, waiting occupations, public school teachers, and bank tellers (Reskin, Roos, 1990). Other examples of male-dominated industries women moved into included wilderness occupations and ‘hard-hatted’ positions in construction and firefighting. Regardless, in the early 1980s, when women were moving into occupations typically dominated by men, it was heavily documented by the media (Reskin, Roos, 1990) and their visibility increased. The industries listed above have not undergone the same development as agriculture but still offer information on occupational trends.

Trends in occupation began with a job being male-dominated and afterwards, women moved into the industry. Then, as women began to gain employment into some of those positions, men would leave the industry in search of new opportunities. This first step was called feminization, and masculinization of an occupation characterizes the movement of men into a new occupation. It was determined by these occupational trend researchers that movement of women into previously male-dominated positions does not always benefit women, occupationally or economically. This is because “by the time women gained access (to these occupations), the occupations had lost much of their attraction to men and were becoming less advantageous for women as well” (Reskin, Roos, 1990, 14). Furthermore, “when the wage gap did narrow, it was largely because of declines in men’s real earnings, and not increases in women’s [earnings]; women thus seemed to gain by default” (Reskin, Roos, 1990, 14). Although agriculture has declined in popularity over time, it is unclear whether agriculture follows occupational trends or whether the narrowing of the wage gap is true for the salaries of women entering agriculture.

Women have been disadvantaged when they moved into male-dominated occupations and may experience similar challenges when entering agriculture. Women were disadvantaged entering the industry, gaining acceptance or achieving economic gain while in the industry.

Breaking into the industry had been a challenge, as women were “less welcome, subjected to greater scrutiny and suspicion, and judged more harshly than their male counterparts” (Chetkovich, 1997, 157). Furthermore, employers did not expect the same level of work from women, and they assumed women would be transitory workers (Enarson, 1984, 41, LaBastille, 1980, 15). Once hired, since there were still fewer women than men, the hired women would get separated and distributed among different teams (Enarson, 1984, 8, 25, Martin 1988, 6). This separation would make it difficult for women to support each other. Furthermore, defining one’s identity within the occupation would be difficult for these women because if they embraced their femininity too much, they would be in direct opposition with men, and sex discrimination would not be uncommon (Enarson, 194, 62, Martin, 1988, 6). Over time, it was found that women gained acceptance in their roles but it did not come easily from male workers (Enarson, 194, 138). Although it is said that employers have lowered their bias against women since the 1970s, there is still evidence that industry-wide women are paid less than men. This section sets up some of the social and economic challenges women face when they enter industries while the next uses specific examples of challenges for women in agriculture.

#### *Women Moving into Agriculture*

Looking specifically at agriculture, Carmen Albright surveyed hundreds of women in Arkansas (a state where women are 28.6% of all operators) to understand what was limiting these women in their agricultural careers. She was trying to determine the challenges for on the farm and off the farm (working in agriculturally-related industries) positions. The most commonly identified issues were ‘networking with others,’ ‘gaining access to credit,’ ‘finding good information about best management practices for (their) businesses,’ and ‘completing loan forms and other important paperwork’ (Albright, 2006). It appears that making connections with others and learning the best ways to conduct business is difficult for many women. Regardless of these setbacks, most women in the study identified that they were taking on more responsibilities to expand their businesses and stated they would continue to do business even if they lost their connections with other operators. This helps demonstrate the commitment these women had to their new positions and some of the challenges women face after entering agriculture.

In another example, secondary female agriculture teachers experienced difficulties entering agriculture and deans overcame them with support from their families. Women in faculty positions have been reported as having different teaching styles than men and unfortunately, receive less support from the institution (Crow, Goldberger, 2009). Other challenges include stress and proving themselves as agricultural educators through the “sexism and resentment from

students and community” (Baxter, et al., 2011, 17). The severity of these challenges varied over generations but appear to be improving as women become more accepted as faculty. In a case study of deans in agriculture, the conditions by these women grew up, their background and experiences, as well as their personal drive, were factors that led them to their careers. The success of their careers was attributed to the support they received from their families and a large percentage attributed their success to the encouragement of their husbands (Kleihauer et al., 2012). Although they experienced challenges entering the industry, gaining acceptance eventually becomes possible and the support of others is important.

### *Job Stress*

Along with the stress of determining the best ways to manage their farming businesses, women with farming lifestyles can show symptoms of depression. Not only is farming physically dangerous, but the stress associated with the farm life can also cause mental health-related problems (Carruth, et al., 2002). Women have been studied and found to have even higher risk of depression because they were required to balance responsibilities on the farm and in the household (Carruth et al., 2002). The farm work might bring them fatigue, financial pressures, and the chemicals used in agriculture could affect their health. Women with the smaller farm sizes have been found to be more concerned with their finances. Depressive symptoms are positively correlated with age; the oldest women were almost twice as likely to experience the symptoms of depression as those just over 20 years of age (Carruth, et al., 2002). The farm life can be stressful. Men feel some of the same stresses that women do, but women have the added pressure of balancing both the farm and family.

Regardless of the stresses, some believe that farming can be a gratifying experience. One woman, Mona Lee Brock of the Farm Crisis Center, lost her farm and husband at one point but is still involved with the industry. She is quoted saying “Farming is a hard life. There’s got to be a love of land, because even though it is a hard life, it is a beautiful, satisfying, most gratifying life. The early years were wonderful. If I had it to do over, knowing what the outcome and the end was, if I thought that I would miss what I had up to that point, I’d still do it” (Anderson, 2004). For this individual, although farming was stressful later in her life and did not remain economically viable, it was still found to be a worthwhile experience. This section covered occupational trends of women moving into the industry and gender, the next will cover environmental threats to the industry.

### ***Environmental Threats to Agriculture***

Changes in water and climate have affected crop production. The nation’s water supply has been affected and projections for the rest of the twenty-first century are grim. These

environmental changes affect agricultural yields, food prices, and potentially the security of farms. Even though there is evidence that agricultural yields are negatively affected by climate change, there are still growing numbers of women moving onto the farm.

The Intergovernmental Panel on Climate Change (IPCC) has been studying average global temperatures, hydrological systems, and ecosystems to determine the current climate situation and predict future effects on society. It has been stated that the warming of the climate system is imminent and undeniable and patterns of precipitation will differ regionally (Cowell, Urban, 2010).<sup>2</sup> Additionally, climate is said to account for more than 10% of the change in agricultural yields (Lobell, Schlenker, Costa-Roberts, 2011). Therefore, climate change and changes in the available precipitation affect agricultural yields.<sup>3</sup>

According to one source, “Agriculture is arguably the human practice most vulnerable to the environmental chaos of climate change, and one of the most essential ingredients of our daily activities” (Costa, 2010, 204). Agriculture may suffer in light of environment threats, yet women are moving onto the farm. It is likely that these environmental concerns are encouraging the movement of women into sustainable agriculture and the local food movement.

### ***Structural Changes in Agriculture***

There have been a number of structural changes within the industry. Proposed reasons for structural changes include adapting to the changing environmental resources, access to technological advancements and population density. These alterations can affect communities and households and farming practices. If communities and households are affected by structural changes, the role of women on the farm is also reorganized.

Declines in farm population affect communities. Over the course of the 19<sup>th</sup> century, the number of Americans living on farms decreased from over one-third to less than 2% (Lobao, Meyer, 2001). Farm families that relied on the networking received from farming neighborhoods were eliminated (Costa, 2010). As a result small farms cannot sustain families and fewer large

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<sup>2</sup> Changes in precipitation will affect the ecological systems of United States regions in a variety of ways. For example, there will be drier summer conditions over much of the southern United States but there will be increased rainfall in northern regions (Cowell, Urban, 2010). Level of moisture or precipitation drives the predictability of agricultural yields from year to year.

<sup>3</sup> The effects of climate change on food prices and food availability will alter globally and in each country because of the sheer number of food products traded worldwide. Climate determined that “10 years of climate trend is equivalent to a setback of roughly 1 year of technology gains” (Lobell, et al., 2011, para.11) because the changing climate can have a negative effect on agricultural yields even as technology progresses. However, in their discussion, they said that the overall global changes did not all have a negative effect on yields in every country. In Hawaii, for example, increased greenhouse gases (such as CO<sub>2</sub>) that work to increase global temperatures, boosted some yields (Lobell, et al., 2011,). Therefore, each country or region is affected differently by climate change, but the changing agricultural yields can affect the yields of major crops. The changes in yields in these major crops will, in turn, affect food prices.

farms are rapidly expanding their shares of the market. The value of production from these large commercial farms in 2009 is about 7.5 times greater than that of middle-range farms, and almost 14 times greater than that of small, rural residence farms (U.S. Census Bureau, 2012). The advancement of larger farms and their ability to gain more acreage puts smaller farming operations at a disadvantage.<sup>4</sup>

As communities lose networks of farm families, the household is affected. Agricultural transitions affect households in the form of family work and the well being of its members. As mentioned earlier, the role of men and women on the farm vary, “Men participate more in direct farm production, and their work, whether on or of farm is more closely tied to enterprise scale and structure than is that of women” (Lobao, Meyer, 2011, 116). Changes in the scale of farms and in the structure of agriculture would affect the role of men and women in the family. One form of this role change is as smaller farms have gotten smaller and as the success of commercial farms has grown, both men and women are forced to engage in off-farm work more frequently. Livelihoods of households are threatened.<sup>5</sup>

Another recent trend in agriculture, discussed in the *Journal of American Culture* (2012) is locavorism, which is a movement that aims to get Americans food by reviving smaller farms and reconnecting animals with plants through sustainable agriculture.<sup>6</sup> Women are involved in this movement and desire equality in the farm roles in sustainable agriculture for men and women, a system not based on the nuclear family (male-dominated household) or patriarchy which was discussed earlier. One locavore stated that “We need to address the burdens of labor and not

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<sup>4</sup> According to one source (Costa, 2010, 47), “Family farming has been destroyed by factory farming, globalization, the free market economy and the World Trade Organization (WTO), which was put into place by the corporations to ensure their ability to expand their markets indefinitely.” This is particularly stressful on communities that struggle with urban and rural land use issues.

<sup>5</sup> There has been research conducted on the stress that farm households undergo. Depression is also a factor. The economic hardship and stress of the occupation can lead to negative mental health outcomes (Lobao, Meyer, 2001). Stress and depression differ depending on the person, for example, female, higher educated and younger farmers typically suffer greater mental health problems. Older farmers suffered less stress as long as they remained active and the quality of their physical health remained high. Emotional health of any farmer demographic improved after financial recovery. Households are affected by agricultural transitions, both emotionally and financially.

<sup>6</sup> This is one movement that women are actively supporting as a result of the changing structure of agriculture. Sustainable agriculture relies on the natural processes of production “that has been in existence on the planet for over 12,000 years” (Rudy, 2012, 27). The separation of plants and animals (so animals are fed by produced crops and not plants), has been achieved by ‘transnational corporations’ and ‘industrial, large scale, monoculture farms’ (Rudy, 2012). These large-scale farms emerged in the 1950s and 1960s and have industrial production practices that damage the environment through the use of harmful chemicals and the waste produced. This system is argued as unsustainable. In response, locavores engage in sustainable agriculture to sustain the environment and support a food system that will continue to function for future generations.

import conservative gender roles in our return to small sustainable farming” (Rudy, 2012, 35). Locavores argue that underrepresented populations, such as women, homosexuals, etc., are farming and need to be supported by an agricultural movement.

### ***Women and Sustainable Food Systems***

Women hold international importance in agriculture and had main roles on the farm before the European Invasion that offer examples of sustainable food systems. (See Appendix B for information on the international importance of women in agriculture and the indigenous people of North America). In U.S. history the role of women has changed over time and women are increasingly advocating for sustainable food systems.

### ***Sustainable Food Systems and the Local Food Movement***

The visibility of women in sustainable agriculture and the local food movement is arguably a result of structural in agriculture, environmental concerns and societal changes. Female participation on farms and in small-scale and sustainable agriculture operations is apparent “On the farm, women are one of the fastest-growing demographics to own and operate farms in the U.S, and they are tending towards diversified, direct-marketed food that create relationships with eaters” (Costa, 2010, 11). Although some would argue that their desire for a change in the food system is merely a result of their societally-defined roles as mothers of children and nurturers of health, structural changes and environmental concerns are also factors. Through these desires, women become advocates for social change and promote local and seasonal foods. Specialty farming can also be a way to support the local economy. These days, women are supporters of family farmers, the local food movement, farm worker rights, cultural diversity, and biological diversity (Costa, 2010).

The industrial food system makes it more difficult for women to get access to and control over their land, which has led to women’s interest in the sustainable agriculture movement. The sustainable agriculture movement began to develop in the late 1970s as a response to the “privatization, commercialization, and capitalization” of agriculture (Sachs, 1996). Interviews with fourteen successful women in sustainable agriculture (Anderson, 2004) revealed that the system could be achieved through a number of steps. These steps include; 1) create and conserve healthy soil, 2) conserve water and protect its quality, 3) manage organic wastes without pollution 4) manage pests with minimal environmental impact, 5) select crops and livestock adapted to the natural environment, 6) encourage biodiversity 7) conserve energy resources, and 8) increase profitability and reduce risk. The women in these interviews appeared to be less concerned with profit than with human health, the environment, and creating a food system that would last. Women have a key role in the sustainable agriculture movement and help organize small

communities (Sachs, 1996). Women have taken leadership roles and joined organizations for sustainable agriculture as well. In particular, women also worked organic farms, and got involved “as a result of their concern over the toxic effects of pesticides, their desire to take care of land and preserve ecosystems, and their dissatisfaction with the organization of the food system” (Sachs, 1996, 27). Their production choices challenge the conventional food production system. This trend of diversity toward women in sustainable agriculture emerged in the 1970s and has continued today.

An example of a woman that is aware of environmental changes and altering her farm practices as a result is Dana Jackson of Salina, Kansas. She is one of the individuals aiming for holistic management and is involved with a holistic management organization (Anderson, 2004). Farmers that practice holistic management are considering the land in the long-term, not just the yields of the following year. Holistic management involves considering the ecosystem of the farm and areas around it, the livelihood of the neighborhood, the community, and future generations (Anderson, 2004). Originally the ‘heartbeat’ of The Land Institute in Kansas, a non-profit research, education and policy organization dedicated to sustainable agriculture, Jackson moved onto The Land Stewardship Project. The Land Stewardship Project aims to promote sustainable agriculture and sustainable communities. Both of these organizations are geared toward holistic management. In her newest project, she worked to transition farm families from conventional grazing to managed intensive grazing, which allows portions of pasture to recover by managing the rotation of different animals (Anderson, 2004).

One way of advocating for family farms and self-sufficient systems is by women running or supporting Community-Supported Agriculture (CSA). In this program, customers pay upfront for fresh food that will be provided over the upcoming weeks and the money supports the farmer through the season. Research conducted on women involved in CSAs showed that women defined their work “as centered upon nourishing themselves and others” (Jarosz, 2011, 308). An account from Elizabeth Henderson, a farmer on an organic farm in New York, states “when you work to create a more equitable and sustainable food system, as you do when you join a CSA or other form of buying direct from farmers, you inevitably become an activist – an activist for a new type of food system... so that future generations too may enjoy this ethical and healthful eating” (Costa, 2010, 27). Emily Oakley, a farmer in Oklahoma, states that regardless of the equal division of labor she and her husband share on their farm and with their CSA, they do take on different roles. For example, she does a lot more marketing and feels that her husband utilizes his physical strength (Costa, 2010). Their motives were seen to be a transformation within themselves that made them feel more responsible for others (Jarosz, 2011).

Women are aiming for sustainable food production in cities as well. “With 80 percent of Americans living in cities, the reintegration of food production right where the majority of people live, work, and play is one of the best ways to rebuild our appreciation for local foods” (Costa, 2010, 163). A personal account from Erika Allen, an urban farmer and program coordinated from Chicago, IL, states that urban farming is important for the environment and human health. Urban farming can help address issues of food access, public health and nutrition, and ecological problems in areas that need it the most (Costa, 2010). She also states that there are a number of law and regulation challenges to sustainable food production in cities. Some women even are trying to transform the way people view food in urban areas through their art. This urban agricultural movement includes Britta Reilly, Leah Gautheir, and the “Living Concrete/Carrot City,” they’ve created. They try to get the urban public interested in agriculture and their food supply by influencing urban design getting greens into the design of the city effectively (Gilbert, Raviv, 2011). Whether on the farm, through different programs, or in the city, women are fueling the development of the sustainable agriculture and local food movements.

### **Summary of Literature Review**

Although women have been underrepresented in the male-dominated occupation of agriculture, they have been increasing their visibility in the industry, both on and off the farm. More women are holding principal operating and operating positions on the farm than ever before. Even if agriculture isn’t their primary occupation, they are still entering the industry. Women and men have typically held different roles on the farm. Now, women are taking greater responsibilities on and off the farm, and finding the best ways to run their businesses amidst challenges they have faced entering the industry. As agriculture has undergone a number of structural changes and there are environmental threats to agricultural yields, women continue to enter the occupation and a movement toward small-scale and sustainable agriculture has grown. The motives for this move are unclear. This research focuses on learning whether these trends can be attributed to individual career changes or actual industry occupational trends. The information gathered will allow for a better sociological understanding of women in agriculture.

### **Research Design**

#### *Overview of Purpose and Research Question*

The purpose of this research is to learn more about the underrepresentation of women in agriculture and to understand the motives of women moving into the industry. My research question is as follows: What are the reasons women have been increasingly moving into the

agricultural occupation over the last 25 years? This larger question was broken down into four sub-questions.

- 1) Why have women been underrepresented?
- 2) Are there differences in the experiences of women on and off the farm?
- 3) Do trends with women in agriculture follow the occupational trends of women moving into male-dominated industries?
- 4) What are the motives of women moving into the industry?

The data collected through this research will help gain a better understanding of women in agriculture.

### *Description of Research Methods*

Qualitative research methods were used to conduct this research. The information compiled into the literature review was used to assess the underrepresentation of women in agriculture and to explain what is understood about women in agriculture. The second part of this research included interviewing female farmers and women in non-farm roles who have made the transition into the industry. Interviews with women allowed me to learn firsthand about the underrepresentation of women and the movement of women into agriculture (Please see Appendix C for list of questions). These women were recruited into the research through snowball sampling. This meant that women were recruited through the suggestion of other participants (See Appendix D for sample recruitment e-mail). These interviews were conducted in person and over the phone so that interviewees could be representatives from all over the Midwest. The interviews were recorded and transcribed during the research process between the months of January and March 2013. Qualitative data from interviews were coded by content and by themes. These codes were grouped into larger categories to come up with conclusions.

### *Farming Facts of Study Location*

The Midwest region of the United States is an agriculturally productive area. Although its growing seasons and other characteristics vary from those on the East and West Coasts, or in the South, there are trends that can be seen nationwide. According to one source that looked at Farming Dependence (FD) and Agricultural Importance (AI) in the U.S., the Midwest region is agriculturally important by total sales and has high levels of agricultural production (Jackson-Smith, Jensen, 2009). These are also indicators that the farming sector in this area “is a significant contributor to regional and national agricultural output, regardless of whether the count is urban or rural, or whether the local economy is highly specialized or diversified” (Jackson-Smith, Jensen, 2009). Therefore, each region contributes regionally and nationally; each region plays a

role nationwide but may have differing precipitation rates and regional strengths. This study focuses on the Midwest because it is an agriculturally productive region and it is an opportunity to learn about the women on and off the farm that are making substantial contributions to regional and national agricultural input. Experiences described by women in the region can be considered specific to the Midwest but since Midwest agriculture contributes nationally, responses may have nationwide relevance.

## **Research Results and Discussion**

### ***Participants***

Sixteen women were interviewed for the purposes of this research. Interviews took between 30 and 60 minutes to complete (See Appendix C for Questions). The interviewees' ages ranged from mid-twenties to seventies. As a result there were women who have just moved into the industry, who have moved into agriculture in the last 25 years, and individuals who have been involved longer or who had recently retired that felt they could speak about women in agriculture. Although the women were primarily White, and this information was mainly gathered through observation, there was minority representation of race from at least 12.5% of women or approximately 2 of the 16 women. The ages and races of the women interviewed resemble industry trends. For example, as it was seen in Korb (2004) and [www.agcensus.usda.gov](http://www.agcensus.usda.gov), women in agriculture have been older, but younger women are moving into the industry. Also, female operators are primarily white.

Twelve women, or 75% of interviewees, were involved on the farm. Of these twelve women, three, or 25%, were involved with conventional agriculture (the production of corn and soy beans), while the other nine, or 75%, were involved with large- and small-scale specialty or sustainable farming. (See Appendix E for Visual Representation.) Some women were involved both on and off the farm. Their positions on the farm varied from farm wives, being in a partnership agreement for the ownership of their farm, working as sole proprietors of the farm, recently retired, and those hired or who volunteer labor on a farm. Regardless of the varied types of involvement women had on the farm, common themes arose. Interestingly, those involved with conventional farming were not as involved in the field as their husbands or other family members. This is not surprising as women typically have been operating smaller farms with diversified crops (Korb, 2004).

Seven interviewees, or 58%, of the women held off-the-farm agricultural occupations as soil conservationists and as directors of non-for profit organizations and foundations for farm production. Three of the women, or about 19%, currently held on- and off-farm roles. (See

Appendix E for Visual Representation). The variety of roles on and off the farm by interviewees follows industry trends. For example, according to the census of agriculture, women are operators on different types of farms of different sizes. Furthermore, Albright (2006) and Devine (2009), sources which review women's participation in agricultural organizations, show that women sometimes have both on- and off-farm roles. At times, I will refer to just the experiences of the women off the farm or to the experiences of women on the farm. Other times, I will discuss common themes from all sixteen women.

Half of the women, or 50%, that are involved on the farm (6 of 12) are primary operators of their farming operation whether that is small-scale organic or sustainable, small- or large- scale specialty, or a variety of operations. Five of the 12 on the farm women, or 42%, are farming as a family business, either as a partnership with their husbands or other family members; one of these women is retired and no longer works on the field but is still a co-owner with her siblings. One of the 12 women is hired help but stresses that she feels as though she is part of the family's business. (See Appendix E for Visual Representation). The participants interviewed have roles on the farm that resemble statistics shown in the census of agriculture. Furthermore, they have diversified operations of animals and crops of varying farm sizes, which is shown in the literature (Korb, 2004).

Nine of the twelve of the on-farm women identified farming as their primary occupation. The other three were also involved off the farm in agricultural positions. Farming was not the primary source of income for every one of these women's families. This also follows statistics published on women and general farm operators that farming is less likely to be a primary occupation and men and women are getting off-farm positions to supplement farm earnings (Korb, 2004). The experience for all women ranged from only one year to over twenty years.

The women interviewed had a variety of perspectives that helped me gain an understanding of the role of women in agricultural occupations on and off the farm to gather some of the motives behind women making the transition into the industry.

### ***Research Findings and Discussion***

#### ***Why have women been underrepresented?***

Women have been underrepresented in agriculture because of a lack of documentation, access to education, a patriarchal society and the construction of gender. However, women are increasing their visibility in the industry and altering expected roles as the result of cultural and familial changes and opportunities are increasing because of environmental concerns and structural changes to agriculture.

### *Underrepresentation of Women in Agriculture*

The underrepresentation of women in agriculture on and off the farm was a theme that arose in interviews. Furthermore, many women shared experiences or instances where they felt that the number of women was growing. Women on the farm stated that they still saw a lot of men on the farm, especially with commercial farming. However, women would also state that as time goes on, there are more women involved with sustainable agriculture. Two different women that worked on small-scale organic farms stated the following:

I want to say that maybe three quarters are male, and the few I have seen that are female, are partnered with a husband who is the main leading person. And if you look around the commercial farmers, it's men. Women tend to be in the background.

If you went to work the Midwest Organic Farming conference... You'd see at least 50% are women, minimum, if not more; women owners, women farmers, women in the food movement. And yeah, that has only increased.

These women identified smaller numbers of women in conventional farming and high numbers of women in organic or sustainable agriculture. The larger number of women in sustainable agriculture was also reflected in the demographics of interviewees.

All seven, or 100% of the women, working off the farm felt that there were more women entering the industry, and some were even able to give an example of where they saw increased numbers of women. In speaking of a specific program that trains women in agribusiness and agriculture communications at the University of Illinois, one woman stated that:

We just celebrated 50 years of that program; at first it was virtually all men, and now it is virtually all women.

Her quote helps identify a program that has increased numbers of women in the last few decades. Another woman who studied agriculture in school and was involved with Future Farmers of America (FFA) said that she noticed there were many girls in the national agriculture program. Furthermore, she noticed that there are increasing numbers of women in that program that did not grow up on the farm. This helps depict a growing interest in agriculture from women without agricultural backgrounds. These statements portray growing opportunities and an interest in agriculture from women that is mimicked by the statistics published by the census of agriculture and data from off-farm parts of the industry (Albright, 2006, 1320; Devine, 2009).

In the literature, Sachs (1996) and Tanner (1999) stated that women have always been vital members of the farm but tasks women completed were not classified as work. Sachs (1996) stated that patriarchal relations defined gender roles on the farm. The lack of education opportunities inhibited women from entering off-farm roles (Albright, 2006). In addition to the

role of women going unrecognized, their work on the farm was not paid. These realities assisted in the underrepresentation of women in agriculture and interviewees identified similar realities.

Interviewees offered up a number of potential reasons for women moving into the agricultural industry. Cultural and familial changes were identified as issues that affected women's role in agriculture. In terms of changes in culture, interviewees acknowledged that women have always been working on the farm but society didn't talk about it. Interviewees stated that as society changed, the roles for women changed. One woman in her seventies discussed how she had grown up on a farm but was encouraged to leave the farm and get a job that was available for women (such as teaching or a secretarial position). She mentioned how it was acceptable today for women to want to be main operators or to go to college to receive training for an off-farm position. One woman stated it this way:

It's now totally cool and totally accepted more than ever for women to be strong and fit and entering into professions that were historically male-dominated and farming is one of them.

Since women are allowed to hold positions that men have had, there are more women in agriculture. However, women made it clear that women were always on the farm, they just had different roles. Another cultural change described is the movement of women into small-scale farming, sustainable farming and specialty farming.

Familial changes were specific to women on the farm. For example, if farming was the family business and a father or a husband died, women might inherit the farm, which would inflate the number of women moving into farming. One woman said that even though more women are inheriting land, they are not always working in the field and are merely hiring laborers. This is certainly possible; there are women who allow others to cash rent their land. As a result of society becoming less patriarchal, a number of opportunities are arising for women.

Interviews helped provide information about the underrepresentation of women and some of the logic behind the increasing numbers. These can be attributed to issues with documentation, the patriarchal society and other cultural and familial changes. Interviews and the literature review shed light on the fact that the role of women in agriculture is changing.

#### *Environmental Threats to Agriculture*

Numerous sources have measured the changes in the environment as a result of climate change and some of the effects it can have on agricultural yields. Cowell and Urban (2010) pointed out that climate change will affect regions in different ways while Lobell, Shlenker and Costa-Roberts (2011) measured that more than 10 percent of agricultural yields in any area were affected by precipitation variability due to climate change. Therefore, environmental changes

affect agriculture. Twelve of 16 women, (75%), interviewed mentioned the health of the environment being a concern or important to them and the health of the environment was mentioned a combined 38 times. Women have been underrepresented in agriculture and are attaining roles that allow them to tackle environmental issues.

The following are two quotes from women on the farm that deal with the degradation of the environment and the need to take care of it.

We can't continue to abuse the earth and not have serious health consequences, because it doesn't take a rocket scientist to look around and see that we are a mess with unhealthy people and unhealthy soil and on and on.

And then I think knowing whatever we do impacts the land we live on, which is the largest living resource. If we do not take care of the land we have, we are affecting ourselves. Then, down the road, who is going to pay for it is our kids and grandchildren.

These quotes help demonstrate that on the farm, women recognize the changes in the environment and the threats it has to agriculture and the health of people. These environmental concerns are fueling their desire to work toward sustainable food systems.

Farmers that recognize environmental changes may transition their operations to holistic management for their cattle (Anderson, 2004) or to sustainable agriculture to consider the long-term health of their farms. The transition toward sustainable agriculture has been occurring since the 1970s but more women are getting involved today (Rudy, 2012, 35). The stories of Dana Jackson, Elizabeth Henderson, Emily Oakley, Erika Allen and Britta Reilly were offered earlier and help illustrate involvement in sustainable agriculture. The statements above also depict a desire from women to take care of the land. Since 5 out of 12 interviewees, or 42%, were involved with small-scale organic farming, they are five examples of women addressing environmental issues in their occupations.

An off-farm woman that helps conserve soil with the government is pleased to address environmental issues.

We work with new and beginning farmers and um, so we are able to give them technical advice and assist them in that way... At the same time we are addressing environmental resource concerns; like soil erosion, water quality, air quality.

Although the interviewee doesn't work on a farm, her statement shows that she recognizes environmental issues. In addition, through her off-farm work, she has the opportunity to address environmental threats to agriculture. Her position allows her to help farmers conserve their soil by altering their practices. One individual, who has positions on and off the farm in agriculture, is quoted saying:

I have worked and meddled in a lot of different things in agriculture. I have found what I am passionate about the soil and working to help maintain the soil and help it be more productive.

Environmental issues are apparent to women on and off the farm. In response to the effects this has on agriculture, women in both roles are addressing environmental concerns. Although men may also recognize and address environmental concerns in their work, women are fueling sustainable food systems on a greater level.

### *Structural Changes in Agriculture*

The growth of large commercial farms (U.S. Census Bureau, 2012) and the declining numbers of farmers (Labao, Meyer, 2001) are two structural changes that have affected the livelihood of farm families. Changes in the farm family affected the role of males and females. These structural changes were recognized by interviewees and they believe that opportunities for women are increasing in light of structural changes to agriculture.

Nine of sixteen women, (56%), brought up the change from family farms to corporate farms when asked about the changes they have seen in agriculture. Although not every woman had been involved with agriculture for decades, they still identified this change to the industry.

Although the number of farmers has been declining and family farms are less lucrative, structural changes have allowed for the expansion of the industry in other sectors (Antle, 2009). The complexity of agriculture was acknowledged by interviewees. Although farming has been declining, agriculture appears to be growing in other areas.

Nine out of 16 women, (56%), mentioned how complex the industry was today over 41 times, cumulatively. Interviewees appeared to believe that there are many types of jobs that one can have and for women to hold now. One woman that attended an agricultural charter school for her secondary education stated how she was unaware of all the opportunities in agriculture, at first. She is quoted saying the following:

I thought agriculture was just farming, but the school really tries to ingrain that it is so much more than farming... The five different career pathways [at the school] are agricultural mechanics and technology, horticulture, finance and agribusiness, animal science and food science.

Through her education she became aware of a variety of opportunities within agriculture. Another woman discussed the job creation potential of food aggregation, distribution and processing. She understood that there is more to agriculture than farm production and that opportunities are increasing for women.

According to interviewees off the farm, as a whole, agriculture is a strong industry with job availability. This does not follow the trends studied by Labao and Meyer (2001); however,

since agriculture is more than just farm production, it is possible that women may be recognizing the growth in other parts of the industry. This was one of the main benefits of agriculture described by off-farm women. One woman stated the following about job availability:

One of the things they drilled into us when I was there, [was that] without people that work in agriculture we wouldn't be able to eat... You can definitely find a job, and you should encourage people into agricultural careers, because without it we couldn't exist.

This quote acknowledges that agriculture will always be a viable industry because people need food. Another woman who worked with a large agriculture company with hundreds of employees stated that they are prosperous even in an economic crisis and their success is a reflection of the strength of agriculture. However, one woman who was the executive director of a small non-profit organization discussed financial challenges.

Large-scale organizations appear to have more stability and job security than the smaller organizations. Although the popularity of farm production has been changing over time, interviewees believed that agriculture is a strong industry with job availability. Many interviewees believed that opportunities for women are increasing in light of structural changes to agriculture.

*Are there differences in the experiences of women on and off the farm?*

Interviewees had a variety of different backgrounds in agriculture on and off the farm, which allowed for many perspectives. Interestingly, there were commonalities and differences across the experiences of interviewees.

#### *Benefits for Women in Agriculture*

As mentioned before, job stability and the strength of the agricultural industry were seen as benefits for women working off the farm. Women farmers had a long list of benefits they identified for their role in agriculture. Even though these twelve women have different roles on the farm and operate different types of farms, common themes arose. Benefits included being outdoors, providing the community with good food, flexibility, health, and seeing their finished product.

Eight women, (67%) of twelve, mentioned being outdoors, nine, (75%), mentioned providing the community with good food and four, (25%), mentioned seeing their product and (25%) mentioned health. Being outdoors was important to many of the women on the farm; they would describe their connection to the soil or the beautiful days they got to experience. Some women felt it was important to provide healthy food to the community. Seeing their end product

was a way of validating all of the hard work they put in during the season. The following quotes help to illustrate some of these points.

And when I think of the benefits, you are out in the air, getting the sunshine, you are active...

It is not very motivating for some people, but for me it is being outside with the plants and the soil and seeing people being able to eat your product... I have just grown to love being outside, working with the soil and grown to love working with people, help[ing] feed people directly.

But when you are actually out in the field, you are actually growing food and you are able to feed somebody; a family. There is a sense of fulfillment, and I think people, not just women, more and more feel like they want that sense of connection and fulfillment and [being] engaged in their community.

These statements portray the satisfaction women get on the farm, being outdoors providing the community with good food and seeing their end product. Additionally, flexibility and the ability to 'be one's own boss' were mentioned by eight women, (67%), as a benefit of farming. Women remarked that when their family members got ill it was nice to have the flexibility of farming so they could rearrange their schedules. Women used the phrase "being one's own boss" to describe the daily flexibility and the advantages of not having to report to a supervisor or boss.

#### *Challenges for Women in Agriculture*

Challenges differed for women on and off the farm. Off the farm, women were frustrated with the bureaucracy of their organizations. Some of the larger organizations, for example, operated under systems that made it difficult to complete tasks. Furthermore, their programs and policies would adapt slowly to the changes in the times. One woman described a situation where their off farm organization did not have the capacity to support a small-scale goat farming operation. Lacking the programming to support this new venture affected the woman's initial investment. Since the policies and programs change slowly and she was interested in beginning her work, the goat farmer was required to build her operation with the guidelines of a large-scale goat farming operation and paid a lot of money upfront. In general, women in smaller organizations stated that it could be difficult to consistently secure money for the organization.

Marketing, finances, difficulty in entering agriculture and other responsibilities and risks were mentioned as challenges on the farm. Seven of the twelve, (58%), on the farm women mentioned marketing as a challenge, eleven, (92%), mentioned finances, ten, (83%), mentioned difficulties entering the agricultural industry and eleven, (92%), mentioned responsibility and risks. Interviewees felt marketing was a challenge because it had to be done in conjunction with the actual farm production in a small window of time. One woman stated it was difficult to market because the scale of the business. She is quoted saying:

So there is this dilemma or challenge for small-scale producers. If too much is produced and venues like farmer's markets or CSAs are the only ones available, then canning or taking produce to the local pantries are the only options. Once the farm gets bigger, the whole production issue of getting items to market and providing to a few grocery stores becomes an issue. Also, trying to decide how to move the produce safely is an important. The scale of farm production affected the ability to market, which was a difficult task in general. Marketing is an important part of earning an income for the farm.

Finances were another challenge for women farmers. Interviewees mentioned that they have had to put down a lot of money up front in hopes of earning money later on. Then, after land is acquired the farmer has to make enough money to stay on the land. For farmers that didn't inherit land, it was even more difficult to acquire land and equipment was expensive for everyone. Acquiring land and worrying about equipment and the lack of security in funding is of concern. Therefore, finances are always a factor on the farm. Acquiring land and equipment can be challenging and make it difficult to enter farming. Furthermore, making a large up front investment for the farm is a large responsibility and a risk for the operator. These challenges and some of the benefits mentioned are characteristic of the experiences women have had in positions on and off the farm.

*Do trends with women in agriculture follow the occupational trends of women moving into male-dominated industries?*

Although agriculture appears to follow the trends of women moving into male-dominated industries at first, arguably, it does not. One of the reasons for this is the movement of women into sustainable food systems and the local food movement which were not areas males were occupying or leaving. Perhaps, if agriculture were compared to an industry that is undergoing the same changes and industrial development it would share occupational trends.

#### *Sustainable Food Systems and the Local Food Movement*

As seen in the section on the environment, interviewees have been addressing environmental concerns in their work on and off the farm. In addition, in the literature review, it was apparent that structural changes such as the transition to large commercial farms have fostered a movement toward small-scale agriculture, sustainable agriculture and the local food movement (Rudy, 2012). Combining information from the literature review and interviewees it can be seen that women are moving into these areas and driving its development.

It was stated a few times that sustainable farming existed before conventional farming (what we consider farming to be today – the production of one crop on large commercial farms), and the current movement is a return to practices in place for centuries. Regardless of the prevalence of sustainable farming in the past, interviewees mentioned that the current movement

toward local food systems and sustainable agriculture is nationwide; however timing differs among regions. In three interviews, statements were made that indicated the local food and sustainable agriculture movements started on the East and West Coast and that they reached the Midwest after. One example of this is:

The East Coast and West Coast were going quite a bit before that. It seemed as though it kind of started up in the 80s and 90s and then now it's just now getting going in the 2000s, you know, really recent around here. It's really new.

Although the local food, locavore, and sustainable agriculture movements are nationwide, it took longer to move to the Midwest. Even though regions would have different growing seasons and strengths, the consensus appeared to be that what is occurring in the Midwest is a result of a national movement.

Twelve interviewees discussed a growing awareness of the local food movement and sustainable agriculture. One woman mentioned how she felt a whole food movement has developed:

And I couldn't say that 10 years ago. And it's not just me. I think it's a whole food movement that has grown up. And I think people are starting to realize they can have these choices, and they can seek out and find a person to have their Thanksgiving turkey who grew it nearby, or go to their farmer's market or go to the CSA.

Along with this movement is the power to make different food choices and buy local food at different places. Some of the women interviewed were involved in this movement. Many of them identified that women are increasingly involved in this movement. One woman discussed the demand for food produced by specialty farming and sustainable agriculture. She said that people want diversity, they want to support the local farmer and they want fresh local produce. Another woman described it as people having higher standards for their food. There are many facets of the food movement and interviewees identified instances of how the movement was altering the perceptions of their food and affecting their food choices.

One woman, in a discussion of the local food movement and different types of farming, was quoted saying:

How has it changed? Yeah, [the changes are] huge, huge huge. There are a lot. There is more talk going on right now than I have ever seen ever in this area... It is the most exciting thing going on, where you can be a small grower or a medium-sized grower.

Not only were there changes in daily food decisions but the movement has allowed for the development of smaller growers. Small and medium-sized growers are indicative of the literature on the locavore movement (Rudy, 2012).

Six of the sixteen women interviewed took everything one step further and connected women in particular to the sustainable movement by discussing how women are the meal planners and make the decisions about how families are fed. Additionally, interviewees said that women have a connection to the earth because they are nurturers. Assuming the role of meal planners and having a connection to earth as nurturers relates back to the socially constructed roles that women are expected to hold.

These six interviewees identified women as important components of the sustainable food movement because of the qualities that women are socialized to believe they have. It should be recognized that some, like the interviewees, believe women are the right people to engage in the development of sustainable food systems because of societally-constructed roles. However, not every interviewee stated this as a reason for women's attraction to the movement and it should not be the only consideration for women's movement into sustainable agriculture and the locavore or local food movement. Other considerations may include the structural and environmental changes in the industry. Sustainable agriculture and the local food movement are areas of agriculture that women are entering and about which they are driving the development. Furthermore, their movement is not solely based on societally-constructed gender roles.

#### *Occupational Trends*

Analyzing whether agriculture follows the occupational trends of women moving into male-dominated industries was a bit difficult. At first, it seemed that women in agriculture were mimicking other industries. For example, when men leave a male-dominated industry, jobs open up and historically women fill them in, called feminization of an industry and masculinization occurs when men enter a new industry (Reskin, Roos, 1990). On a very basic level, it would seem that women were doing just that. Although there were not large percentages of men leaving the industry, the popularity of the industry was declining. At the beginning of the 20<sup>th</sup> century, a large part of the labor force worked in agriculture, by the end of the century agricultural workers declined and people entered the service industry (Reskin, Roos, 1990). The declining farm population, although not specific to men, followed the trends of other occupations. Regardless of these similarities, another characteristic of feminization and masculinization is that the wage gap narrows when women enter the industry because of declines in men's earnings (a result of declining popularity) (Reskin, Roos, 1990). Specifics on this topic in regard to women in agriculture were not gathered through interviews, so the wage gap could not be studied in more detail. However, although similarities between occupations were apparent, there were other reasons agriculture doesn't seem to follow occupational trends with women moving into male-dominated industries.

Agriculture does not seamlessly follow occupational trends of women moving into male dominated industries because there are other factors affecting this transition. These other factors are environmental concerns and structural concerns. As a result of these changes, women are entering and fueling the sustainable agriculture movement, engaging in specialty farming and the local food movement, and operating small-scale farms. They are moving into these roles and they are not necessarily the roles that males held before the agricultural industry became less popular. Men were not driving the local food, locavore, and sustainable food movement before women entered the industry. Additionally, the literature and interviews show that there are issues with documentation, education, cultural and familial changes for women in agriculture that are affecting numbers of women in agriculture. These other factors make it so that agriculture does not follow the trends of other male-dominated industries women are entering.

#### *Passion, Perseverance, and Patience*

In the interest of giving a little more information on women in agriculture, interviewees were asked to offer three qualities or descriptive words they felt were important to their occupation. Of the qualities individuals offered, there were three that were each mentioned by more than five people. These are qualities that individuals find are important for women in agriculture and are important to the woman's transition into the industry. These qualities help women alter the roles expected of them and overcome the barriers they experience entering a male-dominated industry.

The first word was "passion." More than five women offered passionate as one of her descriptive words. Whether it was a passion for farming, for the soil, or for the health of other people, being passionate was necessary for women in the industry. "Perseverance" was another word that was commonly offered and often was used interchangeably with persistence. Agriculture is dynamic for those on the farm and there are off-farm challenges as well. Women encouraged other women to persevere through tough times or seasons and to persist in what they were doing. Similarly, women said that women needed to be driven and hard working, that these qualities would be important to expanding their operations or growing in their off-farm occupations. The last word was "patience." Women did not always experience success or find comfort in their roles. However, typically after establishing themselves, conditions in the workplace and farm got better. They still had work to do, but patience was important to all of them on a day-to-day basis. Passion, perseverance, and patience are qualities that many interviewees find are important for women in agriculture.

Passion, perseverance and patience can be seen in this following quote from a woman that enjoys what she is doing.

And I couldn't get away from [my other job] fast enough. Now I can't remove myself from the earth. I have to tell you, I um, I keep telling my family that I am going to slow down and that I am going to grow less and that I am not going to be working as hard. And it is extraordinarily difficult for me to do that. Because I truly love what I do! So, with all of the difficult challenges, it is something different, you are learning something different all the time. It is never boring and you are the owner of your day. The quote reveals a passion for farming, a desire to persevere in the industry and patience with her family and perhaps other challenges.

Studies have been done on career adaptability to learn what it takes to have someone successfully transition into a career. According to (Brown, 2012), a person adapts when there are both environmental and personal factors in the new career, or learning through challenging work and taking on responsibilities and committing to the new role, respectively. The woman in the last quote shows that she is taking on more work against her family and has committed to her new role on the farm. The three qualities described by women in agriculture help to describe career adaptability for women moving into agriculture.

#### *Barriers Women Experienced After Entering Agriculture*

Statements from the interviews showed that after entering agriculture, women experienced technical and social barriers. Technical barriers included access to resources, which is seen with women in developing countries and women on and off the farm in the United States (The State of Food and Agriculture, 2011; Albright, 2006). Social barriers included difficulties with others in the industry, which is similar to women moving into male-dominated industries (Williams, 1989; Chetkovich, 1997; Enarson, 1984; LaBastille, 1980; Martin, 1988).

Interviewed women identified labor, licenses, certifications, and finances as technical challenges on the farm. Labor was commonly mentioned by women on the farm because their operations were often very labor-intensive and physically demanding. Many women relied on their families to partake in the work on the farm. Six of the sixteen women felt that it was important to teach children important skills and life lessons through work on the farm. For the women who did not have the help of any family members, perhaps they were ill or their children graduated college, they had to hire laborers or rely on volunteers and that was seen as challenging because there were not always willing people and it was a financial strain to hire people when family could have provided free labor. However, regardless of the labor challenges, women stated that changes in equipment and technological changes had made it easier for women to operate farms.

The lack of enough manpower, helping in the garden for the weeding and the gardening... it is challenging, but I have been able to do what I can with the help of my family.

It is just hard to find someone that is willing to come on a daily basis and do it, and we really aren't that big, that we hire out. I mean it would be nice but we don't.

So the size, you know and strength, you know, that type of thing. And I don't think for women that is necessarily a big issue anymore, um, learning how to do things and there is more specialized equipment out there -- that type of thing now, than there used to be.

The quotes above illustrate the labor-intensive nature of agriculture, the difficulty in hiring labor and technological advances that have made labor easier for women.

Another technical barrier that was mentioned was certain licenses and certifications. For example, one woman, in expanding her business wanted to also be able to sell some cooked goods. However, in order to sell the food she wanted she had to acquire the appropriate licenses and certifications. Getting appropriate licenses and finances (mentioned earlier) were barriers that could make it more difficult to enter the industry. The instance with the goat farmer mentioned in the last section is another example of how the programming and policies developed by organizations are not always set up to support the small-scale or sustainable agriculture ventures. Upon further analysis of these barriers, it seems that these may not be exclusive to women; but the social barriers are gender-specific.

Interviewees experience social barriers upon entering agriculture on and off the farm. Interviewees described instances with going against expected roles for women and having to work harder to prove themselves to men. These expected roles relate back to gender roles constructed by society. For example, while people are surprised to see women on tractors, they are not surprised to hear that women are doing specialty farming. Those in agriculture may expect women to be on the farm, but they still may not expect them to be main operators. These expectations limit the women that are trying to gain acceptance in their industry.

For myself personally, I've struggled with setting it up as a sole proprietor and being the initial farmer and then my husband getting all the credit all the time because women don't do that. And we live in a community where it's all the guys doing it, and so that was a real struggle for quite a while.

The woman in the last quote struggled with being a female principal operator because of gender expectations. One woman even described agriculture and farming as a boy's club, and that it could sometimes be easier for a man to conduct simple business transactions. Social challenges for women entering industries are found in the literature. Women experienced feeling less welcome, being subjected to scrutiny and suspicion, being judged (Chetkovich, 1997), sexual discrimination (Enarson, 1984), and female agriculture teachers even experienced resentment

from the community (Baxter, et al., 2011). Gaining acceptance was difficult for women moving into male-dominated industries (Enarson, 1984), off-farm women and seen through interviews with women farmers.

Regardless of the social barriers to entering agriculture, women emphasized that expected roles are changing. The socialized gender expectations are breaking down and women take on new roles and as opportunities are increasing. In fact, different roles for women and expected roles for women were mentioned by fourteen of the sixteen women interviewed and a combined 57 times in all interviews. It was found in the literature that just because the industry is male-dominated doesn't mean that agriculture is a men's trade (Martin, 1988). With further analysis of statements made by women, it appears that many women are noticing that agriculture may be male-dominated but women are very capable of managing the work. Although others in the industry have not completely noticed it yet, women are working to alter the roles that women are expected to have on and off the farm.

### *Overcoming Barriers*

There are technical and social barriers making women's transition into agriculture difficult. These barriers are similar to what women entering any male-dominated industry experience. Fortunately, women are finding ways to overcome these barriers. Interviewees identified networking with the community and making connections as important to their role in agriculture. Some of the ways these women have overcome these obstacles is through their collaboration with other women or through agricultural organizations. The prevalence of agricultural organizations for women in agriculture throughout history was seen in the literature. Every woman could either identify a group of others with whom they had networked, or a registered organization that allowed them to share and gather resources.

For those who had entered specialty farming within the last decade they could still identify struggles finding information about what they wanted to do in the Midwest because it was uncommon. For example, many small-scale farmers market as a group so that they have larger quantities to sell. Sharing resources is important to the success of these groups and acquiring enough finances for everyone to stay on their land. Furthermore, although there are risks in entering farming and in expanding their businesses, having the advice or support of others has proven helpful to interviewees. One woman that engages in a cooperative to market her products stated:

The co-op makes it really nice for the rest of us. The other thing is if you only have small amounts of stuff, as a co-op you might have a lot. You might have 100 pounds of tomatoes but as a co-op you may actually come up with 1500 pounds of tomatoes...

These networking connections and collaborations make it easy to confront some of the challenges. Also, the connection with the community appeared to be important in general so that they can spread awareness about good food.

Women have trouble entering industries because they are separated and distributed among different teams, which may make it difficult for women moving into positions off the farm as well even though the numbers of women are increasing (Enarson, 1984). One woman in an off-farm position mentioned that sometimes there was segregation between men and women at the cafeteria and she may be the only woman in meetings. Although she did not feel particularly disadvantaged being a woman, the support she would be able to get from other women could be useful. This separation and distribution may be seen on the farm as well, as it is difficult to receive direct support from other female farmers whose land is located miles away.

Regardless of whether a woman was involved on and off the farm, or the reasons they networked and connected with others, each woman could identify a group that she was a part of and relied on to some extent. Networking and making connections was suggested as a way to overcome social barriers and as the numbers of women increased in agriculture, hopefully, some of those barriers would break down and expected roles for women would continue to transform.

#### *What are the motives of women moving into the industry?*

There is not just one motive for women moving into agriculture. Motives of women moving into the industry can be the move from one job title to another and the growth of an interest in gardening or animal care. There are also complete occupational and organizational moves that are either a return to farming or a necessary job transition.

#### *Motives for Women Moving into Agriculture*

The review of literature was unable to offer concrete reasons why women are moving into agriculture, however, interviews helped gather this information. The literature was, however, able to give basic information about why people make career changes. Changes can be voluntary or involuntary (Barclay, et al., 2010), or in other words, they can be the result of pressures from one's environment or from the self and women tend to move toward jobs that allow them to conquer the world later in life (Heddescheimer, 1976). Additionally, career changes are common; people will change careers many times during their lifetime and often during middle adulthood, (Barclay, et al., 2010). The literature review also revealed three types of job transitions, occupation-only, organization-only, or occupation and organization mobility (Joseph, et al., 2012).

Upon applying the information in the literature to what was understood about women moving into agriculture, it appears women are making typical career changes. The women that

are inheriting land or losing their husbands are making an occupation only move – a different job in the same organization or industry. For example, they are moving from a partnership or an operator to a principal operator or getting promoted off the farm. Another example of an occupation-only move is a category called the growth of an interest. Organizational-only moves are more likely to occur off the farm with women keeping their same job but changing the organization for which they work. The women making an occupation and organization move are moving into agriculture because of pressures from the environment and the self. Responses from interviewees making this type of move could be divided into two main categories; a return to farming or a necessary job transition.

The growth of an interest was one occupational-only move that women were making into agriculture. Nine women mentioned having or knowing of a gardening interest or interest in animals that grew into small-scale farming. This was not always described as an easy transition, but it was easy to tell that the gardening brought them joy. The first quote illustrates the challenge of expanding a simple gardening operation. The woman that stated the following quote has to keep the height of her gardens shorter because of arthritis but easily describes the joy she receives from gardening. The third quote is from a woman that enjoys working with the animals more than gardening and although she is partnered with her husband and son on the farm, oversees all the animal operations.

Well, it was a huge challenge going from – I had uh, I had done some gardening, it is one thing to do gardening, it is another thing to actually have a wide variety of nice-looking produce that have to be available for people to buy at set events, set dates, set times.

You know, I have two raised gardens... on my lawn, it is amazing the amount of food that I grow, and I can and make soup, and it is amazing how many I could feed from that.

But I know that I have a lot of friends that are women farmers, and a lot of them tend to be the type that love gardening, which I don't. But, um, but I do love the animals part of it. So a lot of my friends really enjoy gardening and that's how they got into it. I think that is what I hear from most of the women that are doing it because they love gardening or because they love animals.

The statements from these women helped depict a gardening or animal interest that motivated women to move into agriculture or to expand their current operations. This category also fits best with an occupation-only move. For example, these women went from gardener and a person who cared for animals to small-scale farming and animal husbandry.

The two categories that help explain the occupation and organization move women make into agriculture are a return to farming and a necessary job transition. A return to farming happened for many women with agricultural backgrounds, although they had spent time in different occupations. Fourteen women mentioned that either their family had a family history of

farming or they knew of someone involved in agriculture whose family had a history of farming. Some of them were the fourth- or fifth-generation farm families. Growing up on a farm could have had an effect on their continuing in farming or their eventual return to farming. These women had left a history of agriculture or the physical farm and ended up returning to it. One woman stated it as:

My guess is that most of the women who move into the industry, are motivated by the fact that they grew up in the industry, farming... it is unlike so many other industries. There is um, something about the connection to the soil and growing food that is very female and people have a deep-rooted attachment. So I think these women are motivated through that and because of their love and their passion for farming.

This woman felt that agriculture is a unique industry and important for many people with a background in it. It was hard for anyone with an agricultural background to stay away. Another woman, who had grown up on a farm but was encouraged by her parents to leave the farm and do something else, stated that she was born to be a farmer and it took her until she was 50 years old to realize it. She made that return the farm because of her background but also because of her passion for farming. The socially constructed gender roles are also apparent in her statement when she discusses that a connection to the soil and growing food is very female. Regardless, the return to farming is an occupational and organizational move, a career change to a different job and organization at the same time.

Only three of the sixteen women had no family history of farming and they had a combination of on- and off-farm roles. These women were also driven to agriculture by a genuine passion or interest in farming. It was easy to notice the passion that some of the women had for farming or agriculture.

I love...I tell people I have found my passion in my later stages of life, but I truly enjoy what I am doing.

Other motives were their education or a desire to educate others through farming or their position in agriculture. For these women, their transition to farming was a necessary job transition.

Two of the three women without a family history in farming developed their interest through their education, either through learning about agriculture because of the school they attended or through educating themselves. One woman in an off-farm role without a background in farming stated that in the last few years she has seen it become more prevalent for those without farming background to get involved with farming if they have an interest in the health of the environment or people. Education, as well as a genuine passion or interests, are two reasons that women may be moving into agriculture. These statements, similar to the return to farming, also resemble occupational and organizational movements.

Women have been altering their expected roles on and off the farm and increasing in number. Regardless of the available information on numbers of women, reasons for why women are making the transition are unavailable. The interviews in this research allow for some reasoning behind the movement. When women were asked to describe factors that led them into agriculture and to infer why other women may move into agriculture, a number of ideas arose. A woman who is simply changing her position on the farm or within her job in agriculture or growing an interest is undergoing an occupation-only change. Other women are undergoing an occupational and organizational move at the same time. Their motives for this have to do with returning to farming or making a necessary job transition based on a genuine passion or interest for agriculture. In addition, the women making a necessary job transition may be doing so to enhance their education or in a desire to educate others.

### ***Research Limitations and Recommendations***

There are limitations to this study. Although effort was taken to eliminate researcher bias, there is still the potential for error. Although the information found in this research is useful, it would be more beneficial to have more interviews to get an even wider variety of perspectives. In addition, follow up interviews could be conducted to get more information on these women and provide detailed focus on a singular issue such as marketing or finances. It could also be interesting to explore women in different regions in the U.S. to learn their experiences.

This research could be focused to narrow the variety of perspectives from women. Although there were women with perspectives from different parts of the industry and common themes were generated, focusing in on an age group or a particular type of on farm or off farm role could generate specific information that could be better inferred to larger populations. Lastly, it could be useful to gather male perspectives on the role of women in agriculture.

Further recommendations include looking into the implications of this research. I was able to offer suggestions for the underrepresentation of women in agriculture, discuss some of the changes it is undergoing and the motives of women moving into the industry; however there was much I could not do. For example, I was not able to pinpoint which factor influenced the role of women the most. The data collected for this research was compared to occupational trends of women moving into male-dominated industries. It could be useful to try and find an industry that is developing and changing similarly to agriculture to make further comparisons regarding the role of women.

Lastly, research could focus more intently on the policy and programming portion for women moving into the industry. The farm bill is one piece of legislation that supports farming and has increasingly supported smaller scale and sustainable agriculture. However, the gains of

this smaller sector of farming in the farm bill are still slim. If the farm bill and other legislation could increase their support of agriculture where women are growing their involvement, there could be policies in place to support their operations. Similarly, women are members of agricultural organizations and if there were more programming for women off the farm or for smaller scale and sustainable agriculture on the farm, it could help women overcome some of the technical and social barriers they experience entering the industry.

## **Conclusion**

The in-depth literature review and sixteen in-depth interviews helped answer the research question: What are the reasons that women have been increasingly moving into the agricultural occupation over the last 25 years? This question was answered by addressing the four sub-questions. 1) Why have women been underrepresented and why are the numbers of women increasing? 2) Are there differences between women on and off the farm? 3) Do current trends follow other occupational trends of women moving into male-dominated industries? and 4) What are the motives of women moving into the industry?

Women have always been involved in agriculture but gender expectations and the male-dominated nature of the industry determined their role on and off the farm and their work was undocumented. Additionally, their work typically went unpaid. By allowing multiple operators to be counted on farms, farm wives, co-operators and women in other positions were officially considered to be working in agriculture. The literature offered education and cultural changes in agriculture and the women interviewed helped identify other cultural and familial changes that have affected the numbers of women in agriculture. Furthermore, the social construction of gender and the patriarchal society also influence the underrepresentation of women.

Women's perspective mattered as it portrayed commonalities and differences in experiences on and off the farm. Women with on- and off-farm roles are finding ways to address environmental issues in their jobs as current conditions affect agriculture. Interviewees identified that people's perceptions of their food are changing nationwide and women are entering agriculture through the movement toward small-scale and sustainable agriculture. They mentioned that women have a large role to play in this movement and in agricultural organizations that supported it. Environmental concerns and structural changes are encouraging the movement of women into the development of sustainable food systems. An example of a difference in perspectives has to do with the woman's opinion of agriculture as a whole. Women off the farm, for example, stated that they felt that agriculture was a stable industry with available jobs whereas women on the farm identified daily challenges that threatened their operations.

Feminization and masculinization of an industry was common with women moving into male-dominated industries. However, regardless of basic similarities, the movement of women into agriculture does not follow this trend. Although very basically women are moving into the industry, there are a lot of other factors that are making this transition possible. These include the changing environmental and structure of agriculture that are funneling women into a larger food movement that is moving toward smaller-scale, sustainable agriculture and local food. These are not necessarily positions that men held into which women are now moving. The complexity of the agriculture industry makes it difficult to fit into the mold of other occupational trends. However, the barriers women experience moving into male-dominated industries exist in agriculture. Social barriers described by interviewees make it difficult for women to gain acceptance in the industry. Although women experience judgment and scrutiny, expected roles are changing over time and women have always been capable of the work. Women can overcome social barriers by networking and connecting with others. All of the women interviewed could identify a group or an organization of women they were a part of, and many mentioned the importance of those connections.

While statistics identify trends with women in agriculture, they do not explain why women are moving into agriculture. Growing an interest, a return to farming, and a necessary job transition are three ways that help describe motives for women moving into the industry. Apart from the women inheriting land or losing a husband that are occupation-only moves, women may also expand a gardening or interest in animals. Other women make occupation and organization moves. Some women who return to the farm eventually returned to the farm because they have a genuine passion for it and because it is difficult to forget their connection to the soil. The impetus for women making necessary job transitions and without a background in agriculture was their education, the desire to educate others or their own genuine interest in agriculture.

There is no reason that women should be underrepresented or encounter barriers when moving into a new profession. The gender roles socialized to everyone are not the result of an actual difference in abilities between men and women. Gaining a better understanding of why women have been underrepresented in agriculture and their motives for moving into the industry helps to give a voice to women on and off the farm that have historically been neglected. Allowing there to be information on these women will help them continue to alter the roles expected of them and take on even more responsibility in the industry. With more knowledge of women in agriculture, policies and programs can be better developed to support them.

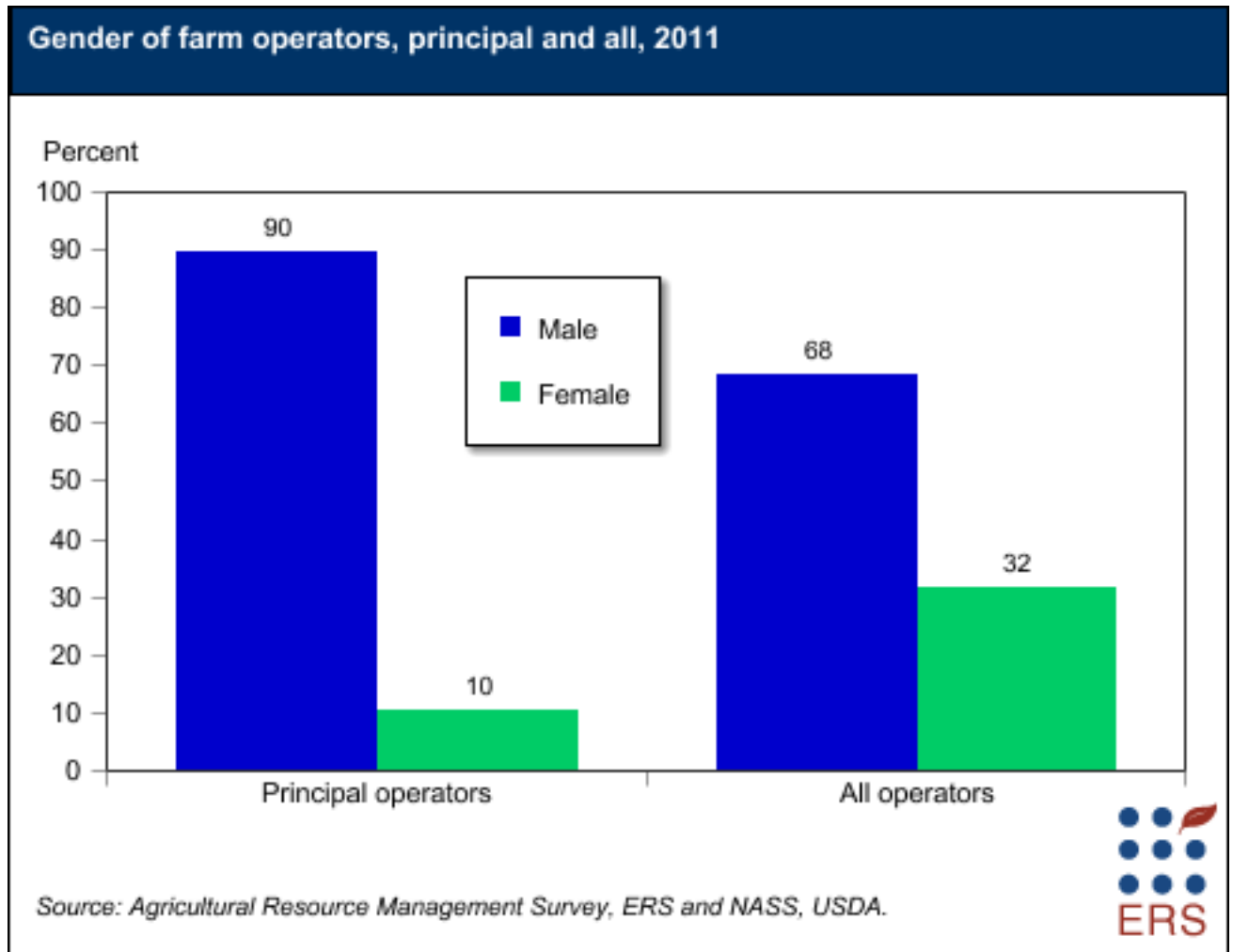
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**Appendix A - Gender of Farm Operators, Principal and all, 2011, USDA ERS.**



“Socially Disadvantaged Farmers: Race, Hispanic Origin & Gender.” *United States Department of Agriculture: Economic Research Service* (2012). Web.

## **Appendix B – Further Information on the International Importance of Women in Agriculture and the Indigenous Peoples of North America**

### *International Importance of Women in Agriculture*

According to the Food and Agriculture Organization of the United Nations, which looks at women in developing countries, women are very valuable to agriculture. In fact, it is described that in order to achieve the eradication of poverty and food insecurity, it is stated that gender equality should come first (The State of Food and Agriculture, 2011). This is because in developing nations, women are not considered equal to men even though they make significant contributions to agriculture and society (The State of Food and Agriculture, 2011).

The role of women in agriculture is important because they are able to contribute vastly to the industry. According to one source "Bringing yields on the land farmed by women up to the levels achieved by men would increase agricultural output in developing countries between 2.5 and 4 percent. Increasing production by this amount could reduce the number of undernourished people in the world along in the order of 12-17 percent...[and] could bring [the number of undernourished] down by as much as 100-150 million people" (The State of Food and Agriculture, 2011). In other words, if gender equality were reduced, poverty and food insecurity would be minimized. Unfortunately, there are "gender-specific constraints" that reduce female productivity such as access to agricultural resources (i.e. fertilizers, tools), which limits the ability of women to contribute to the industry (The State of Food and Agriculture, 2011). Another limiter of women is the lower level of attained education. Women have lower agricultural yields than men because of their lower access to these valuable resources. If the gaps in resource use could be reduced, women's agricultural output would increase and help minimize food insecurity.

### *Indigenous Peoples of North America*

The indigenous peoples of North America were around long before Europeans and documentation on agriculture. Food has always held importance for Native Americans, not just for daily sustenance but also for ceremonies; food preparation may even play a vital role in the ceremonies (Hungry Wolf, 1980, 37). Native American gardening is comparable to small-scale farming; in fact, each plant has a spiritual role and is valued greatly (Weaver, 2013, 43). In the past, the indigenous peoples had to rely greatly on what was available to hunt and what could grow in their immediate surroundings. These practices have altered a bit as times have changed; for example, meat and vegetables typically come from butcher shops and grocery stores, respectively (Hungry Wolf, 1980).

For indigenous peoples, females dominated agricultural roles and thus had a large role in economic production. Although there is not a complete history of Native American agriculture, in a case study of the Seneca women, it was found that the role of women provided more than half of subsistence or self-sufficient farming for the family (Jensen, 1977, 1). Their role in agricultural production gave them status and public power before the Europeans' invasion (Jensen, 1977, 1) and it is not clear why this tradition was impacted by the arrival of Europeans. Native American gardening and agriculture is comparable to small-scale farming and in the past was disproportionately a women's job. Before European settlement, women played a very different role in agriculture.

## **Appendix C- Interview Questions**

Assessment of the Misrepresentation of Women in Agricultural Occupations and the Motives for Movement into the Profession

(There may be follow up questions asked during the interviews)

Questions:

1. What is your occupation/job title? What were the factors that led you to this career? What are the benefits, barriers, and challenges? How long have you been involved?
2. Can you tell me a little bit about your background? Please offer three words that describe yourself.
3. Who do you work with? Can you tell me about the different positions, organizational structure and function of your business?
4. What are the changes you have experienced in yourself or the occupation since you first started your career? What has stayed the same?
5. Have you noticed females moving into main operating roles over time? If so, what do you believe are motives for this transition?
6. If you are a female who has more recently moved into this occupation, what motivated you to make this transition? What have you learned about your role in the industry since you have made the transition?
7. Do you participate in any agricultural organizations? If so, why do you do that?

#### **Appendix D- Recruitment Email for Interviewees**

*This was altered slightly during snowball sampling if participant's contact information was suggested by another interviewee.*

Email text: Assessment of the Underrepresentation of Women in Agricultural Occupations and the Motives for Movement into the Profession

Dear (Representative of the Agricultural Occupation),

My name is Jennifer B. Long and I am a student at Illinois Wesleyan University in Bloomington, IL. I am conducting a research project that seeks to understand the underrepresentation of women in agricultural occupations, change over time, and the recent movement of women into this profession. I am seeking your participation in this project.

If you consent, I would like to schedule a one-hour interview with you, where I will ask you basic, open-ended questions about your occupation, your understanding of how the field has changed over time, and any knowledge you may have regarding women transitioning into the profession. From these open-ended questions, I will ask follow-up questions to be able to thoroughly understand your point of view and the knowledge you may have.

My goal in this project is provide information where women have been underrepresented, get a better understanding of how agriculture has changed over time, and learn more about women's movement into these professions. I believe that this method is best able to capture your experiences.

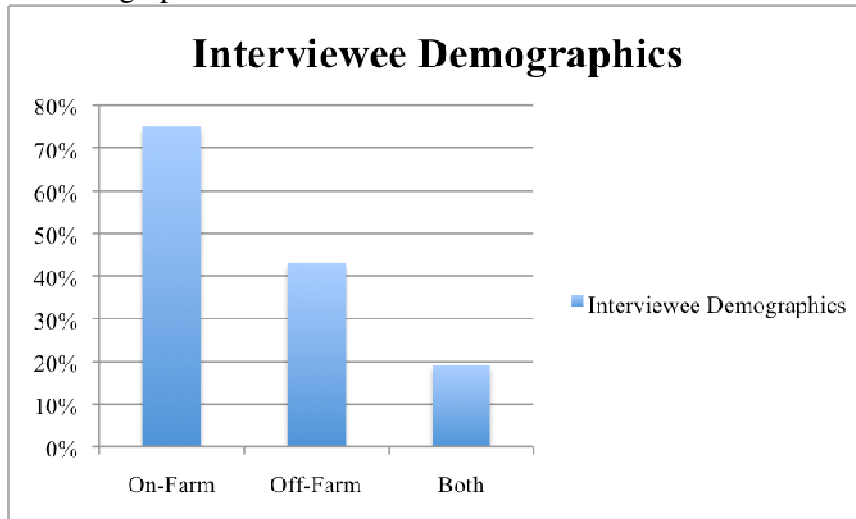
If you would like to participate in this project, or to learn more as you decide, please contact me right away at [jlong@iwu.edu](mailto:jlong@iwu.edu).

Thank you for your consideration,

Jennifer B. Long  
Undergraduate Student  
Illinois Wesleyan University  
[jlong@iwu.edu](mailto:jlong@iwu.edu); 847-254-2952

## Appendix E – Visual Representation of Demographic Information of Interviewees

This bar graph illustrates the distribution of interviewees on and off the farm. N=16



The following pie charts illustrate the distribution of women interviewees on the farm. N=16

