FOOD FOR THOUGHT: THE ROLE OF LAND-GRANT INSTITUTIONS IN SMALL FARM AND LOCAL FOOD EDUCATION

BY

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DISSERTATION
Submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Educational Policy Studies in the Graduate College of the University of Illinois at Urbana-Champaign, 2017

Urbana, Illinois

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ABSTRACT

In 1862, the Morrill Act established land-grant institutions with the mission to serve those working in agriculture and mechanic arts. The following dissertation explores the ways in which the evolution of industrialized agriculture has influenced the mission of these institutions. This qualitative research combines case study methods and evaluation to analyze the relationships between local farmers and universities. Through studying Extension programs, this dissertation also explores the role of land-grant institutions in providing small farm and local food education to the community. Educational programs focused on small farms and local foods that have been created outside university settings are also studied. The dissertation is divided into three sections: 1.) programs outside universities 2.) University of Illinois programs 3.) programs at other Midwest land-grant institutions. The first section analyzes study circles that were formed by local farmers in the late 1980s and early 1990s, as well as the perspectives of those who have worked with the University of Illinois. A case study of educational tours at a local farm in Champaign, Illinois, which includes survey results from participants, is also analyzed in this section. An additional case study of two schools in Bloomington, Illinois that have started school gardens examines the benefits and challenges involved in local food education for children. The second section focuses on local food purchasing and educational initiatives at the University of Illinois, including an analysis of a Local Foods Workshop. This section also includes perspectives from professors and Extension educators who have worked with local farmers. The final section analyzes local food and sustainable agriculture programs at five other Midwest land-grant institutions. The dissertation concludes by providing recommendations for ways in which universities may establish more meaningful relationships with their communities through investing in programs that provide resources and outreach to local farmers.
To my father and fellow family farmers
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CHAPTER 1: INTRODUCTION

1.1 Statement of the Problem

Although land-grant institutions have largely shaped modern agriculture, universities have become increasingly disconnected from farmers, and the general public has become significantly less informed about food production practices. David Orr (1994) describes the ways in which the corporatization of agriculture has affected rural communities, as well as public knowledge about land and ecology:

“As agriculture became more industrialized, the number of farms declined, and with them, rural communities. Remaining farms became larger, ecologically less diverse, more expensive to operate, and more vulnerable to economic and ecological forces beyond the control of farmers. They also tended to become less interesting and less instructive places, hence, the decline of land intelligence now evident throughout predominantly urban societies” (Orr, 1994, 118).

As land-grant institutions evolved over the years, Orr (1994) believes the disconnect between modern education and the study of farming in the community and local environment are part of what caused the disappearance of traditional agriculture values in the U.S. and abroad:

“The decline of the family farm in the United States and the destruction of traditional farming practices in what is called the underdeveloped world is the product of many forces including the separation of the study of agriculture from its community, cultural and ecological context” (Orr, 1994, 119).

Orr (1994) also argues farmers maintained specific types of knowledge about their own land and local environment, which they shared with the surrounding community. However, this knowledge is being lost as these farms disappear. Orr (1994) states,

“In traditional farming communities, information is passed from generation to generation and is woven into the culture of the region. It is decidedly not the monopoly of a separate caste of farm ‘experts,’ or ‘researchers,’ who mostly live in another place or occupy another mindscape. For the loss of farms as places of instruction and as a source of practical and ecological competence, I know of no good substitute” (Orr, 1994, 176).
Describing the relevance of indigenous knowledge shared through traditional pedagogies, such as storytelling, in native farming communities, Collins and Mueller (2016) argue, “this oral history is more than a story explaining the genealogical connection to the land—it is Indigenous science that illustrates proper food production and sustainable agriculture practices” (Collins & Mueller, 2016, 310).

According to Orr (1994), the disappearance of individual, owner-operated farms and industrialization of the food system has caused formerly independent rural communities to lose control over their own economies. He argues this has been partially influenced by research at land-grant institutions: “Taxes, land-grant university research agendas, and public policies have combined to favor concentration of ownership, suppliers, banks, processors, speculators, and large-scale corporate farming” (Orr, 1994, 177). Orr also expresses grave concerns about the larger consequences of these resources and sovereignty being taken from rural communities: “We do not know whether democracy can long survive without widely dispersed control of rural land and resources, but there are good reasons to think that it cannot” (Orr, 1994, 176-177).

Based on Orr’s (1994) analysis, the industrialization of agriculture caused land-grant institutions to shift away from their original mission. He stated,

“The Morrill Act of 1862 (which created land-grant institutions), the Hatch Act of 1887 (establishing agricultural experiment stations), and the Smith-Lever Act of 1914 (the extension service) were intended to improve the lives and livelihoods of rural people by establishing a ‘permanent agriculture’ fostered by local institutions and undergirded by ‘liberal and practical education’… The result was to convert agriculture from a broadly conceived enterprise with technical aspects and based on a solid agrarian philosophy and moral foundation into a series of technical specializations” (Orr, 1994, 179).

Orr (1994) argues there has been a strong public outcry from external organizations as universities have become increasingly influenced by the corporate agriculture system:

“As the mission of land-grant universities became more and more closely identified with the interests of agribusiness, the chemical industry, food engineers, the processors, conglomerates, and banks, questions about the full costs of conventional agriculture have
been mostly asked outside the U.S. Department of Agriculture (USDA)—land-grant university complex in small nonprofit institutions, such as The Center for Rural Affairs, the Land Stewardship Project, the Land Institute, the Institute for Food and Development Policy, and the Institute for Alternative Agriculture, and by irate citizens” (Orr, 1994, 179-180).

In conclusion, Orr (1994) believes the role of the university in the loss of family farms and deterioration of rural communities is part of a larger shift away from moral, ecological values and toward a neoliberal, capitalistic ideology across modern society.

“The loss of family farms, the decay of rural communities, pesticide contamination in groundwater, and the loss of topsoil have happened for reasons that can be found in federal tax laws, commodity programs, the USDA-funded university research agendas, farm credit programs, and most recently the North American Free Trade Agreement and the larger free trade agenda contained in the General Agreement on Tariffs and Trade (GATT). The failure to properly reward good farming practices that conserve soil and biological diversity and the failure to support rural communities and rural livelihoods are a product of systematic neglect and studied ignorance of things rural, biological, ecological, and long-term. It is an intellectual failure, a moral failure, a failure of leadership, and a failure of our collective vision” (Orr, 1994, 180).

Collins and Mueller (2016) also describe the ways in which this ideology has affected the relationships between land-grant institutions and their communities. According to Collins and Mueller (2016), the university is “often bound by the Western capitalist idea of producing the greatest good for the greatest number of people. However, the utilitarian one-size fits all assumption can diminish the impact of the university in community engagement” (Collins & Mueller, 2016, 310). Based on their findings, this preference for a specific Western academic form of knowledge has threatened those outside the university. “In the U.S., from Alaska and the pacific to the mid-continent plains and the eastern coast, there are vibrant systems of Indigenous knowledge marginalized by universities that unconsciously support new forms of colonial alliance with large industry” (Collins & Mueller, 2016, 326). According to Collins and Mueller (2016), universities could greatly benefit from broadening their definition of knowledge: “Decolonizing and expanding the epistemological diversity of universities can incubate a
knowledge environment with greater resources to address society’s most pressing issues” (Collins and Mueller, 2016, 327).

1.2 Purpose of the Study

This dissertation examines the role of land-grant universities in supporting small farms and local food system development by examining local food education in three separate contexts: through community programs outside the academic setting, programs at the University of Illinois, and programs at other Midwest land-grant institutions. When the Smith-Lever Act created the Extension Service in 1914, Warner (2007) explains, it was believed that researchers would share useful and practical information with people involved in agriculture and home economics. He stated, “It was assumed that new technologies, developed by researchers at land-grant universities, could bring the industrial revolution to America’s farms and help the farming community interface more effectively with the evolving urban economy” (Warner, 2007).

However, this quickly changed due to the commercialization of agriculture. Warner (2007) explains, “With the advent of industrial agriculture organization—complete with input dealers, private agricultural management field specialists, and electronic information systems—it can be argued that the Extension Service’s ‘technology transfer’ role has become obsolete.” Although Extension has faced many difficulties due to these changes, Warner (2007) argues that a new form of agriculture is emerging with an ecological focus: “Current technologies based on fossil energy can be replaced with proper interactions between crops, livestock, and other organisms. And this new approach brings with it new challenges and opportunities, and a critical need for a new kind of Extension Service” (Warner, 2007).
According to Warner (2007), land-grant universities (LGUs) have been largely critiqued for their influence over our current food production system, and there is a need for these institutions to reconnect with farmers, the individuals they were originally designed to serve:

“The agricultural production system designed by LGU researchers, fueled by billions of dollars of federal crop subsidies, produce far more food than America could ever possibly consume, but at substantial social and environmental cost… Agroecological initiatives in industrialized countries face two fundamental problems: persuading agricultural science institutions to provide expert, ecologically informed knowledge, but to do so in a way that facilitates the active engagement by farmers in learning about the particularity of their own farming system” (Warner, 2007, 42).

Examining this disconnect, Warner (2007) explains that many farmers were unsatisfied with the consequences of the high production agricultural systems designed by LGUs. “The clamor for alternative, agroecological farming systems grew out of multiple critiques of the LGUs’ scientific products, their conceptualization of their clientele, and their approach to conducting extension” (Warner, 2007, 43). While examining local food education programs outside the university, this dissertation shares accounts from individuals in central Illinois who were involved in this movement to promote sustainable farming systems after being turned away by LGUs in the 1980s and 1990s. It also provides case studies of small, environmentally sustainable farms that currently provide education to the community without support from the university.

Although small farms are facing systematic challenges in an economy that is predominantly run by commercial grain production, there is potential for local food system development. According to Campbell and Zumkehr (2015), “Most cities can feed 100% of the population with 50-mile foodsheds, with a standard US diet, and in any historical time period” (Campbell & Zumkehr, 2015, 246). Based on their study, however, it appears that more research is needed on the social and economic barriers to further developing these local food systems:

“The decline of foodshed potential occurred in parallel with demographic and agronomic trends such as suburban sprawl, abandonment of agricultural land, and population
increases, all of which may need to be considered in light of recent efforts in the 2014 Farm Bill to support localization. Nevertheless, our results indicate that the current foodshed potential of most US cities is not limited by current agronomic capacity or demographics to any great extent, and that the critical barriers to this transition will be social and economic” (Campbell and Zumkehr, 2015, 248).

This dissertation focuses on local food system development and education initiatives in Midwest communities, analyzing social and economic outcomes and challenges.

According to Meek and Tarlau (2016), Critical Food Systems Education (CFSE) places emphasis on the relationship between race, socioeconomic status, and food access, describing these issues as “questions that need to be dealt with in advocating for more cooperative and emancipatory forms of food systems education” (Meek & Tarlau, 2016, 243). While studying programs outside the university, this dissertation also examines challenges in implementing local food education programs in low-income versus upper-middle income schools, analyzing systematic, economic and administrative difficulties faced by students, families, and educators.

In the following chapter, examining programs at the University of Illinois, local food education initiatives, which have been spearheaded by individual faculty and staff, are highlighted and analyzed. Over the past two decades, researchers and Extension educators committed to providing sustainable agriculture education to the university and outside community have faced many challenges in implementing these programs. However, according to Meek and Tarlau (2016), these programs are growing at universities across the country, and this movement is critical to the goals of CFSE: “Drawing upon this accumulation of scientific agroecological knowledge, the CFSE approach aligns itself with the new and innovative food systems education programs at the university level, which are incorporating the political nature of agroecology into their theories, pedagogies and courses” (Meek & Tarlau, 2016, 244).
The programs analyzed at the University of Illinois, including local food purchasing initiatives and the Sustainable Student Farm, illustrate the high level of student interest in local food system development. According to Meek and Tarlau (2016), in order for food systems initiatives to succeed, it is important for these projects to develop from within communities, representing the views, culture and traditions of the local residents: “For food systems education to actualize its critical potential, it should develop organically out of the concerns of students, and their home communities” (Meek & Tarlau, 2016, 252).

Although several other land-grant institutions have developed successful centers for regional food systems and sustainable agriculture, as examined in chapter six, Meek and Tarlau (2016) express concern that many food systems education programs are failing to address the larger issues. Examining global problems, Meek and Tarlau (2016) state,

Food systems education needs to promote a radical critique of the current state of global food production, and link that critique to the movements that are struggling to transform this system. A critical food systems education approach, which integrates the lessons of popular education, food justice, agroecology, and food sovereignty into food education programs, is necessary” (Meek & Tarlau, 2016, 255-256).

This dissertation explores the ways in which land-grant institutions may directly connect with those who are negatively affected by the current food production system. Although many of these programs are funneling resources into sustainable agriculture and conservation research, it appears that many of the issues mentioned above, such as food justice and sovereignty, are not currently being addressed. The research being produced by these programs could provide an outline for how local food systems could theoretically be better structured. However, these changes are unlikely to be implemented unless researchers connect with disenfranchised farmers and community members. By analyzing local food education initiatives at the University of Illinois and programs at other land-grant institutions, this dissertation analyzes the strengths and
weaknesses of the work currently being done in this field. Following this review, the final chapter will provide suggestions for how these programs may better connect with farmers and become more involved in the research and implementation of local food system development.

1.3 Research Question

As mentioned above, this dissertation centrally examines the following question: What is the role of land-grant institutions in supporting small farm and local food education?

Following a review of the literature (Chapter Two) and methodology (Chapter Three), this dissertation is divided into three major sections. An analysis of programs outside universities (Chapter Four) informs readers about local food education occurring within the community, providing a case study of a small goat dairy and farmstead creamery run by two former professors and information on a small farm that has become locally famous for its Jersey cheese. This section also provides accounts from local farmers who started actively researching alternative agriculture options after being denied services by the university in the 1980s and 1990s. Finally, case studies from two central Illinois schools that have attempted to develop farm to school programs outline the benefits and challenges of these projects based on the administration, support, and resources available at individual institutions.

Programs at the University of Illinois (Chapter Five) are examined, and two professors who have actively engaged in participatory research with farmers are highlighted. Local food purchasing initiatives are analyzed through a case study of a Local Foods Workshop sponsored by University of Illinois Dining Services, along with follow-up interviews with individual participants. This section also reviews the work of two Local Food Systems and Small Farms Educators with the University of Illinois Extension, analyzing challenges they have faced. Programs at other Midwest land-grant institutions (Chapter Six) are also analyzed, including
Iowa State University’s Leopold Center for Sustainable Agriculture, the Michigan State University Center for Regional Food Systems, the University of Wisconsin’s Center for Integrated Agriculture, and Extension programs at Ohio State and Purdue University.

1.4 Significance of the Study

According to Orr (1994), colleges have adopted the notion that liberal arts education only occurs indoors, without practical competence being taken into consideration. If more universities invest in student farms, Orr (1994) argues, these resources can have wide-reaching benefits, extending far beyond educating students about food production. He stated,

“This leads me to propose that agriculture should be included as part of a complete liberal arts education, first because it offers an important kind of experience no longer available to many young people from predominantly urban areas. Student responsibility for farm operations would teach the values of discipline, physical stamina, frugality, self-reliance, practical competence, hard work, cooperation, and ecological competence. Second, college farms properly would be interdisciplinary laboratories for the study of sustainable agriculture, ecology, botany, zoology, animal husbandry, entomology, soil science, ornithology, landscape design, land restoration, mechanics, solar technology, business operations, philosophy, and rural sociology. Third, college farms could become catalysts in a larger effort to revitalize rural areas in surrounding areas. Fourth, college farms could be used to preserve biological diversity jeopardized by development. Fifth, college farms could be a part of a global effort to reduce carbon emissions involved in the long-distance transport of food by sequestering carbon through agroforestry and tree cropping. Sixth, college farms could close waste loops by composting all campus organic wastes and incorporating these as soil amendments. Finally, by participating in the design and operation of college farms, students could learn that our problems are not beyond intelligent solution; that solutions are close by; and that institutions that often seem to be inflexible, unimaginative, and remote from the effort to build a sustainable society can be otherwise” (Orr, 1994, 120-121).

Land-grant institutions have a responsibility to prepare students to become global citizens, and food production is a global issue. By challenging researchers at land-grant universities to think about how they might engage with local farms in their communities and find ways to bring discussions about food sovereignty into their classrooms, this dissertation aims to reveal the urgency for academic involvement in reclaiming and developing local food systems. According
to Meek and Tarlau (2016), these conversations with students can have a significant impact by inspiring them to take an active role in transforming these systems:

“Food systems educators need to rethink how they can help their students connect interdisciplinary knowledge to transformative systems changes. Drawing on Freire (1973), we see these types of educational practices as a form of food system conscientização (critical consciousness), where students both learn to analyze their world of food production and access, and take actions to change these systems” (Meek & Tarlau, 2016, 243).

Following this model, other countries are requiring students to study and engage with local farmers in their communities as part of the required curriculum. The Federal Institute of Pará, Rural Campus of Marabá (IFPA-CRMB) is a vocational high school located on an agrarian reform settlement in the southern part of the state of Pará in the eastern Amazon. It provides training in agroecology and agricultural extension to students from these settlements and indigenous communities. Describing the goals of these projects, Meek and Tarlau (2016) explain, “At the IFPA-CRMB the focus is on using a Freirean dialogic approach that synthesizes academic and peasant knowledge systems. Through these dialogic encounters, students work to understand the cultural and political economic forces behind a farmers’ production system” (Meek & Tarlau, 2016, 249). Through conducting in-depth interviews with these farmers, students learn about the politics and culture of land ownership and transformation within their native communities. Explaining the significance of this type of work, Meek and Tarlau (2016) stated, “These research projects build on the experiential learning focus in traditional food system education, by legitimizing community research and breaking down the false dichotomy between school and community learning spaces and forms of knowledge” (Meek & Tarlau, 2016, 250). Analyzing the value of knowledge produced by farmers, this dissertation encourages academics to become more involved in participatory research and collaboration with local community members working to create a more fair and equitable food system.
CHAPTER 2: LITERATURE REVIEW

2.1 The Industrialization of Agriculture: A Global Food Crisis

As international free market policies increase, the United States is not the only country that has experienced significant losses in small farms. Structural adjustment programs created by the World Bank and International Monetary Fund have forced many countries to import food from other nations, causing a decrease in the consumption of healthy, nutritious, fresh, and local food worldwide. In The Declaration of Nyéléni (2007), the authors argue that food sovereignty should be recognized as “a basic human right.” Over 500 persons, representing over 80 countries, authored this declaration. Their definition of food sovereignty is the “right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems” (Declaration, 2007). The writers argue this concept of food sovereignty is “being threatened and undermined by neoliberalism and global capitalism.” Along with food sovereignty being recognized as a basic human right, the goals outlined in the Declaration include representation of women and recognition of their contribution to food production, environmental conservation, implementation of sustainable land management practices, and guaranteed rights to land for peasants.

Walden Bello (2008) presents similar arguments regarding the global food crisis and international free trade policies. For example, the 1994 North American Free Trade Agreement undermined peasant growers by allowing tons of subsidized American corn to be dumped on the Mexican market. Due to the government’s obligation to reimburse the IMF and World Bank through debt-service payments, Mexico could not afford to support domestic growers, resulting in the market becoming completely dominated by American corn. While global corn prices increased, the price of tortillas spiked, which led to unrest in 2007.
A similar situation occurred with rice in the Philippines in the mid-1980s and 1990s, while the country was spending between 8-10 percent of its GDP on debt payments. This caused spending on agriculture to decrease over 50 percent. The U.S. began shipping grain into the country, undermining domestic producers. On a larger scale, since the 1960s, the African continent has transitioned from being a net food exporter to a net food importer. In conclusion, Bello argues that the global food crisis can largely be explained by “the phasing out of government controls and support mechanisms under the IMF and World Bank structural adjustment programmes imposed as the price for assistance in servicing external debt” (Bello, 2008, 453). To combat this, he presents the food sovereignty movement as an alternative to the industrial free-market agriculture model.

Rosset cites similar causes of the food crisis, stating that it is primarily the result “of three decades of neo-liberal budget-cutting, privatization and free trade agreements” (Rosset, 2008, 461). After selling their public grain reserve to the IMF and World Bank, many developing countries have become more dependent on imports as a result of free trade agreements. His suggested solutions include the regulation of commodity markets, the protection of national food markets against trade practices like dumping, policies that support peasant agriculture, and a transition from invasive agriculture to sustainable farming steeped in cultural knowledge.

Rosset and Martínez-Torres (2010) further explain the plight of peasant farmers through their account of La Via Campesina, an international movement that coordinates peasant organizations of small-scale producers, agricultural workers, and indigenous communities across Asia, Africa, Europe and America. Although many had predicted peasants would no longer exist after the rise of industrial agriculture, a growing international resistance has proven the contrary, as peasants have united in opposition to the loss or destruction of their land and asserted the right
to produce their own food. This has garnered significant attention from the anti-globalization movement, causing the term “food sovereignty” to become part of every-day language (Martinez-Torres & Rosset, 2010).

When crop and livestock prices began to sharply decline in the 1980s, presumably as a result of free trade agreements and agricultural practices associated with the “Green Revolution,” peasants began to organize this movement. During the 1990s, the initiative shifted its focus to fight for representation in the decision-making process, arguing that people “must have the right and the ability to define their own food, farming, and agricultural policies, that they need to have the right to protect domestic markets and to have public sector budgets for agriculture that may include subsidies which do not lead to excessive production, exports, dumping, and damage to other countries” (Martinez-Torres & Rosset, 2010, 160). With the turn of the twenty-first century, La Via Campesina began forming alliances with other organizations to increase pressure on the global, capitalist, free trade institutions that attacked their livelihood by threatening their right to land. As support quickly grew, they continued to build their own organizational structure, and the group formally identified capitalism as the main source of struggle for peasant farmers, calling out transnational corporations as the worst actors. This movement continues to unite peasants across the globe in their fight for independence.

According to the Food and Agriculture Organization (FAO), urban agriculture is “an industry located within (intra-urban) or on the fringe (peri-urban) of a town, a city or a metropolis, which grows and raises, processes and distributes a diversity of agriculture products, using largely human, land and water resources, products and services found in and around that urban area” (Hoornweg & Munro-Faure, 2008, 10). These practices range from private and community food-producing gardens, fisheries, aquaculture, beekeeping, fruit trees, green roofs,
and composting to small-scale livestock operations. The benefits of urban agriculture include greater food security and availability of fresh produce, and increased income and employment opportunities.

Hamilton (2014) provides several different examples of the growing importance of urban agriculture in developing countries. Several studies have shown that urban agriculture in Africa has positively impacted women across the continent. Along with supplementing their income, it has given many a sense of purpose, particularly those who were formerly abused. This has also led to an increased awareness about nutrition and provides healthier foods for their families. In a separate study on South African women and gardening, Slater (2001) states that power, identity, and social relations are part of urban food production dynamics, and growing and consuming different kinds of produce allows women to challenge or affirm cultural norms. Through forming female gardening groups, women have also gained more political power. In South Africa, a 2008 survey of 1060 households in Cape Town revealed that 80 percent of households in Ward 95 of the city were moderately to severely food insecure (Battersby, 2011). This study stated, “The severity of urban food insecurity is largely due to city dwellers’ dependence on the cash economy. When income generating potential declines or food prices increase, they become prone to food insecurity, and since they have no alternative sources to food they are often more food insecure than rural people” (Battersby, 2011, p. 549-550).

Cuba presents an interesting case study on the importance of urban agriculture due to political and economic circumstances. Once the economic embargo was enforced, food, fertilizers, and equipment for large-scale agriculture were no longer imported into the country. Urban farming became the only means for residents to feed their families, and it soon became practiced across the country. Nine tenancies and four main production methods were officially
recognized by the Grupo Nacional de Agricultura Urbana (GNAU), the National Urban Agriculture Group. This included vacant parcels of land being given to individuals for basic cultivation and patios being turned into home gardens, resulting in over 370,653 of these patio gardens across the country (Hamilton, Burry, Mok, Barker, Grove & Williamson, 2014). In other South American countries, such as Argentina and Peru, urban agriculture has been used to reduce poverty and promote education. In fact, Lima has even established a sub-divisional office of urban agriculture as a result of increased awareness amongst policymakers (Hamilton, Burry, Mok, Barker, Grove & Williamson, 2014).

Urban agriculture has also been growing in Asia, Eastern Europe, and Pacific Island countries. Over the past 20 years, urban agriculture in China has resulted in some reduction of extreme poverty while boosting the economy through agro-tourism. In Thailand, most households grow vegetables, including on rooftop gardens. Low-income residents also exchange vegetables, promoting a sense of community in high poverty areas. In Eastern Europe, dachas (plots of land used as second homes for Russians) have turned into vegetable gardens. In Pacific Island countries, there has been an increased emphasis on sustainability and local food education. The Republic of Nauru, which has the largest obesity rate in the world, has created school education programs and public policies focused on producing local food.

2.2 Urban Agriculture: Rediscovering Local Food Systems

Despite the potential cost-effectiveness of importing food from other countries, many regions of the U.S. have shown an increased interest in localization. “This rebirth of locally-based agricultural and food production has been labeled civic agriculture, because in almost all cases these activities are tightly linked to a community’s social and economic development” (Lyson, 2004, p. 371). Some examples of this development include community gardens, farmers’ markets and community-supported agriculture (CSA). Although local food is typically
more expensive for consumers, many of these models are becoming more accessible to low-income populations, as an increasing number of community gardens are being designed to provide healthy food to residents who otherwise cannot afford it.

The CSA model, which was originally created in Japan and Europe as a way to protect small farmers, generally involves a community of people who support a farm project, causing the land to become the community’s farm (Gottlieb, 2010). The consumers provide funding for the farm by sharing in the risks and benefits of production. After covering some of the anticipated costs beforehand, they are able to partake in shares of the yield over the growing season.

Although the CSA model is relatively new to the U.S., it has been growing rapidly. CSA groups have increased from two in 1986 to 1,144 in 2005, and farmers markets have increased from 1,755 in 1998 to 5,274 in 2009 (Martinez, 2010). Despite the difficulties of developing CSAs, there has been a growing demand for these farms, and it seems the potential of local food systems has yet to be fully recognized:

“Civic forms of agriculture, like farms that market directly to the public, are also expanding, and there are many observers who feel that locally organized agriculture and food enterprises may be able to account for a significantly larger share of the nation’s food production than they do now. Unlike commodity agriculture, civic forms of agriculture are often deemed more sustainable and more sensitive to consumers” (Lyson, 2004, p. 383).

While local food places an emphasis on the cultivation process, commodity agriculture is centered on the idea that farmers should produce the largest amount of food at the lowest possible cost. Since it is often less expensive to import commercially produced food, many small farms are being taken over by industrialized agriculture. Direct marketing, on the other hand, allows farmers to openly communicate with their customers, while consumers can also inform farmers about which products are in high-demand. This also allows the customers to learn about different ways in which their food is grown, why it may taste different than products they
purchase from other farmers, and exactly where it is coming from. Unfortunately, there are many
roadblocks for communities trying to fully implement their own food production systems.

According to Lyson (2004),

“Currently, no region of the United States is substantially self-sufficient in food
production. Consumers depend heavily on imported products that can be produced only
in climates and soils outside their regions. In many areas of the country, there is little or
no locally produced food in commercial channels” (Lyson, 2004, p. 371).

As the demand for local food continues to increase, small farms have been rapidly
growing in urban areas. In terms of community development, these initiatives have been
especially beneficial for regions with run-down public spaces or neighborhoods. “Cities across
the country have embraced urban farming as a method by which they can re-appropriate vacant
land and transform it into spaces that can be used by residents to facilitate various community
benefits” (Slabinski, 2010, 254). In the 1890s, urban farming was used by cities such as Detroit,
Chicago, and Philadelphia as a strategy to feed unemployed and impoverished residents. Small
pieces of land, referred to as “potato patches,” were given to these citizens in order to provide
vegetables for their families.

Ken Dunn, founder and director of The Resource Center in Chicago, argues a direct
correlation exists between vacant land and the state of urban communities. “Simply by making
sure that no city lot sits neglected, he suggests that we can ensure better economic stability,
safety, community engagement, and quality of life” (Rich, 2010, 121). While completing his
PhD at the University of Chicago, Dunn examined the connection between overlooked resources,
such as recyclable trash and vacant lots, and long-term employment. To test his theory, he started
the Chicago City Farm, located on the edge of Cabrini-Green. Many residents who live in the
building bordering the farm have shared in its yield, and it has also been used as a site for
education, apprenticeships and job training. Children from the Chicago Housing Authority are
provided with lessons and skills on earning money through urban farming and farmers’ markets.

The entire farm consists of one raised bed, several feet above its clay foundation. Dunn did not purchase or sign a lease for the land, so there is an understanding between the farm operators and the city that if the land is sold, the farm will be moved to a different location. While supporting sustainability, this mobile model also allows the city to minimize urban sprawl.

The social, economic, and community benefits of local food systems illustrate a need for further emphasis on this research. As Lyson argues:

“Communities that nurture civic agriculture activities, as one part of a broader plan of diversified economic development, can gain greater control over their economic densities. They can also enhance the level of social capital among their residents, contribute to rising levels of civic welfare and socioeconomic well-being, revitalize rural landscapes, improve environmental quality, and, ultimately, promote long-term sustainability…. The decentralized nature of civic agriculture, its geographic specificity, and its relatively small scale, however, pose problems that could put a limit on how much it can expand. Further, the USDA, the land grant universities, and the agribusiness community have not shown much interest in supporting this form of agriculture. However, as long as civic agriculture has the potential to nurture local economic development, maintain diversity and quality in products and provide forums where producers and consumers can come together as food citizens to solidify bonds of community, it merits increased attention by both researchers and policy makers.” (Lyson, 2004, 383-384).

The process of converting vacant land into urban farms or community gardens has become an increasingly popular strategy for providing healthy food to residents of cities, particularly in low-income areas, in which the need for fresh fruits and vegetables is greatest. McClintock, Cooper, and Khandeshi (2013) analyze the potential for this method of food production, as well as the impact it may have on fruit and vegetable consumption, in Oakland, CA, where the federal poverty rate has exceeded 20%. Through studying the geographic and socioeconomic layout of the city, researchers discovered the flatlands have the highest concentration of food deserts. As public health workers, governmental officials, and city planners became increasingly concerned about these disparities and the lack of fresh food for
flatland residents, it was decided that urban farming could be a viable solution to address both economic and nutritional issues in this area.

As well as providing more fresh food options, urban farms and community gardens can create more job opportunities, promote education, and increase environmentalism. Due to these potential benefits, in 2006, the Oakland City Council supported the goal of producing 30 percent of its food locally. This led urban planners and city officials to start exploring more options to turn vacant lots into food production sites across the city. Although Oakland has certainly embraced this idea, as witnessed by its 10 community gardens managed by the Office of Parks and Recreation, dozens run by non-profit organizations, and an excess of 100 school gardens, these researchers also aimed to investigate the amount of produce actually being consumed from these sites. This research revealed that under ideal growing conditions, the public land could contribute to over 5 percent of Oakland’s estimated vegetable consumption, while farms/gardens on private land could contribute to 9.8 percent of recommended consumption by using high yield practices (McClintock, Cooper & Khandeshi, 2013).

2.3 Farm to Institution: Local Foods in Schools

As awareness about the benefits of local food increases, there has been a rising interest in food education at the primary, secondary and tertiary level. Many organizations and advocacy groups are promoting food and garden-based education in k-12 schools, while colleges and universities are creating new farmer training programs and investing in local foods projects. Along with the health and nutrition benefits, several food education initiatives are also drawing parallels between service-based experiential learning and community development.

In recent decades, steps have been taken to increase farm and garden-based learning opportunities for k-12 students. The first Farm to School (FTS) programs were started in the late 1990s by small farmers in Florida and concerned parents who had students at low-income
schools in California. Along with improving business for farmers by allowing them to sell their produce to the school cafeterias, farming and food education is integrated into the curriculum through in-class vegetable tastings, field trips to farms, farmers visiting the classroom, and school gardening. This allows students to develop a greater understanding of the food production process and causes them to think more carefully about the food they consume and where it comes from. By 2008, FTS programs had expanded to approximately 2,000 programs in 9,000 schools across the U.S. (Berlin, Norris, Kolodinsky & Nelson, 2012). Most studies that have been done on FTS programs have focused on the positive implications for student nutrition and attitudes toward healthy, local foods: “Many FTS programs that have been evaluated have increased students’ selection or intake of fruits and vegetables following the incorporation of FTS components such as including locally grown produce into school meal selections, creating school gardens, and providing classroom-based nutrition education” (Berlin, Norris, Kolodinsky & Nelson, 2012, 590). Along with the health and nutrition benefits, the main goals of FTS programs include increasing appreciation of food and agriculture in k-12 schools, improving local economies, and strengthening the connection between students and their communities.

Over the years, many k-12 schools have started emphasizing test-based learning formats as a way to promote college readiness, causing a shift away from vocational skills. Students are spending far more time indoors, focusing on technological forms of learning, as funding for physical education and other activities decrease. Allison Arieff (2013) argues that this shift away from basic skills has been detrimental to the social, cultural and intellectual development of students:

“We can compensate for much of the lost basic life skills, but the act of doing, of making, of watching raw materials merge into a thing or a meal—that’s been in short supply in the classrooms. The introduction in the last decade of school garden programs has been a pragmatic move in the right direction, familiarizing youth with the origins and growth
processes of their food while instilling in them a willingness to get dirty and cultivate a meal with their own two hands” (Arieff, 2013, 54).

She states that research has shown students who grow their own food are more likely to eat healthier foods. This also frequently inspires students to work toward improving the health of their community and environment.

Food activist Alice Waters created the Edible Schoolyard program in Berkeley, CA as a model for teachers and administrators who are interested in bringing farming and food education into their standard school curriculum. The first east coast affiliate of the program, Edible Schoolyard NYC, was established in Brooklyn and located at the Arturo Toscanini School, serving almost 500 students from pre-school to fifth grade (Rich, 2012). Most of the students come from families that receive public assistance. Many of these families do not have access to nutritious food, and part of the program’s aim is to close this disparity by teaching students and their parents to grow and eat their own healthy, affordable food. One of the major benefits of the program has been an increased sense of empowerment. For about half of the students, English is a second language, but many come from immigrant families and have gardening experience that was passed down through their home countries. This gives them a chance feel more comfortable in their new learning environment and stand out by teaching their peers. The school also hosts family night once per month, during which the students can bring their parents and learn how to cook the food they’re growing.

In a study of FTS programs in Pennsylvania, stakeholders in both rural and urban communities identified three general frames for understanding and supporting FTS initiatives: “1.) redressing poor food environments; 2.) fostering improved nutrition behaviors and health outcomes; and 3.) revitalizing the rural community through support of local agriculture” (Bagdonis & Hinrichs, 2009, 113). Stakeholders in urban areas pointed out that students did not
have anywhere they could go to buy nutritious food near the school, as most of the restaurants were fast food chains or Chinese buffets, and the grocery shops were convenience stores stocked with highly processed junk food. Although many people assumed the rural areas would have better nutrition options due to greater familiarity with agriculture, the fast food and convenience establishments expanded into these towns as well. In rural communities, stakeholders generally view FTS programs as a strategy for improving the local economy and social infrastructure through providing support to family farms: “By making civic engagement and collective endeavor the link between food production and consumption, local food projects, such as FTS, could help reinvigorate a weakened local rural economy” (Bagdonis & Hinrichs, 2009, 116).

Although communities may place emphases on different elements of FTS, depending on the town or school, it is important that all aspects be recognized to reach the overarching goal: “For example, if some FTS programs concentrate their energies solely on nutrition education, while others focus mostly on using school gardens to teach entrepreneurial skills, broader efforts to mobilize state and federal support to relocalize food service programs may be undermined because of an absence of a unified, public agenda” (Bagdonis & Hinrichs, 2009, 118).

Interestingly, at the same time the FTS program was beginning, Norway developed a very successful educational model known as “The Living School Project.” This initiative was developed in the late 1990s through a university extension course entitled “the farm as a pedagogical resource.” It requires teachers to develop long-term relationships with the farmers, as students visit the farm on many occasions and connect practical learning to classroom theory and lessons. The four elements of the model include: location, practical work, collaboration and reflection. As part of “The Farm as a Pedagogical Resource,” which has been offered as a course
over the past 10 years in several regions across Norway, participants support the regional establishments of farm-school collaborations.

One of the original “Living School” projects began in Aurland in 1996, and is now serving as a model for other schools and communities (Krough & Jolly, 2011). Students begin participating in outdoor education in kindergarten, as the children each have their own vegetables and flowers in an outdoor garden. They also visit the farm with their teachers to purchase milk, harvest vegetables, and pick berries and other fruits that are used to prepare their meals. Different classes have their own responsibilities in the garden. The fifth grade students sow and produce the plants in the greenhouse, while the sixth and seventh graders focus on vegetable conservation. In junior high, students learn about cultivating landscapes, traditional agriculture techniques, and the region’s economic foundations.

Similar to modern k-12 education in the U.S., researchers in Norway have pointed to the growing distance between youth and practical skills. Krough and Jolly (2011) argue this has played a role in the rapid increase in young people experiencing psychological illnesses in Norway. Between 1998-2008, the number of Norwegian students treated for psychological disorders increased 150 percent (Krough & Jolly, 2011). Along with working outdoors and participating in a project that benefited the community, students noted that completing useful tasks and helping others were an important part of the experience for them. “Our findings show that in undertaking practical tasks at the farm, students experience themselves as capable and needed; at the same time they acquire insight into connections and processes. In this way, the loss of meaning that many children and youth experience today is counteracted” (Krough & Jolly, 2011, 319). Several teachers have also benefited from the model, stating the experience reinvigorated their skills and ability to communicate with students.
On the tertiary level, there has been an increased emphasis on sustainable food education as a tool for community development across the U.S. According to Barlett (2011), campus food projects can start as incubators that lead to new routes for local food in the region. She argues that campus sustainable food projects contain four common components: 1.) Dining service innovations in procurement, menus, and kitchen operations; 2.) Academic and co-curricular programs, including courses, concentrations, and internships; 3.) Direct-marketing opportunities, including farmers’ markets and CSAs; 4.) Hands-on experience in community gardens and campus farms. These projects frequently contribute to the work of farmers and political activists focused on building alternative food systems.

Student interest in local food systems has led to new courses and concentrations at several colleges and universities, including a new PhD program at Indiana University entitled the Anthropology of Food. At Kenyon College, “Food for Thought” started in the early 1990s as an academic humanities project centered on family farming and community life, but grew into a large-scale movement toward developing a countywide sustainable food system. Along with creating a food-purchasing model for other institutions, the College offers dining hall presentations, food-based courses, farm internships and research opportunities on regional farmland. At North Carolina State Greensboro, students and other university members created a farmers’ market and CSA that assisted with purchasing and delivery of shares to low-income homes in the neighborhood (Barlett, 2011). According to the Rodale Institute’s Farming for Credit Directory, over 90 schools in the U.S. and Canada have farms varying from half an acre to several acres in size, and this rising number illustrates the growing interest in agricultural skills and organic farming amongst students at liberal arts colleges. Parr and Trexler (2011) argue that experiential learning can be very beneficial and effective for students who work at these farms:
“Students were motivated by a sense of empowerment experienced when playing a more active role in food, agriculture, and community” (Parr & Trexler, 2011, 177).

Experiential learning in college settings has also led to political activism in the sustainable food movement. University of Montana graduates started the non-profit organization Grow Montana, which successfully altered procurement laws to allow local food in school cafeterias. This also led to the creation of Food Corps, a governmental organization that promotes FTS programs in low-income neighborhoods. At Drake University, the Agricultural Law Center was very involved in creating the Iowa Food Policy Council, which laid the groundwork for many other food councils across the country. Barlett (2011) states that it is difficult to analyze the impact of most food projects in detail because many campuses have not closely tracked this data; however, these movements have certainly been influential on social, economic and political levels. “Growing numbers of institutions with formal commitments to sustainable food purchases demonstrate higher education’s capacity to have an economic impact on the conventional food chain” (Barlett, 2011, 111).

2.4 The Evolution of Land-Grant Universities in Supporting Local Farms

The Birth of Land-Grant Institutions

In 1853, the Illinois Industrial League organized at the Chicago Convention, bringing together the history of the industrial education movement, which was published in compliance with a resolution adopted at the Springfield and Chicago conventions, in a small pamphlet called “The Industrial League of Illinois.” Jonathan Baldwin Turner, Chairman of the Committee on Publication, wrote the introduction, arguing that farmers and mechanics will take advantage of educational opportunities if relevant literature and resources are provided to them, rather than solely to the professional class. He wrote,
“Give a divine or a lawyer a book on agriculture, and how soon it is thrown aside! And is it surprising that the farmer and mechanic treat other books on the same principle, and in the same way, for the same reason? But how greedily they devour, in all our periodicals and pamphlets, the few scraps that directly pertain to their own interests, and how soon new implements of life and power start up from their practical and creative minds out of every new idea in philosophy that dawns upon the race and claims its place in the crystal palaces and its reward at the industrial fairs of the world! And are such great minds on this great continent to be longer left, by the million without a single university or school of any sort adapted to the peculiar wants of their craft, while the whole energies of the Republic are taxed to the utmost to furnish universities, colleges, and schools adapted to the wants of the professional and military classes…” (Carriel, 1911, 116).

After years of arguing for colleges and universities aimed at educating the working class, Turner was part of the group that designed a petition to the Illinois Legislature arguing for grants of government land to establish these institutions across the state. The “Memorial of the Fourth Industrial Convention of the State of Illinois,” stated,

“We would, therefore, respectfully petition the honorable Senate and House of Representatives of the State of Illinois, that they present a united memorial to the Congress now assembled at Washington to appropriate each State in the Union an amount of public lands not less in value than $500,000, for the liberal endowment of a system of industrial universities, one in each State in the Union, to cooperate with each other, and with the Smithsonian Institute at Washington, for the more liberal and practical education of our industrial classes and their teachers, in their various pursuits, for the production of knowledge and literature needful in those pursuits, and developing to the fullest and most perfect extent the resources of our soil and our arts, the virtue and intelligence of our people, and the true glory of our common country” (Carriel, 1911, 126)

Although Turner prepared a bill that proposed the establishment of land grants in the mid-1850s, which was introduced by Justin S. Morrill of Vermont, it failed to pass through Congress in 1857 and 1858. Although the bill passed both houses in 1859, President Buchanan vetoed it. When Mr. Morrill introduced it once again, Congress passed it, and this became the first civil bill signed by President Lincoln on July 2, 1862. The text of the bill, entitled, “ILLINOIS INDUSTRIAL UNIVERSITY. AN ACT DONATING PUBLIC LANDS TO THE SEVERAL STATES AND TERRITORIES WHICH MAY PROVIDE COLLEGES FOR THE
BENEFIT OF AGRICULTURAL AND THE MECHANIC ARTS” explicitly states that each state should have at least one college where the leading object is:

“to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the Legislatures of the States may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life” (Carriel, 1911, 162).

The first condition of the bill outlines how the funds may be used, and mentions the opportunity to establish experimental farms:

“If any portion of the fund invested, as provided by the foregoing section, or any portion of the interest thereon, shall, by any action, or contingency, be diminished or lost, it shall be replaced by the State to which it belongs, so that the capital of the fund shall remain forever undiminished; and the annual interest shall be regularly applied without diminution to the purposes mentioned in the fourth section of this act, except that a sum, not exceeding ten per centum upon the amount received by any State under the provisions of this act, may be expended for the purchase of lands for site of experimental farms, whenever authorized by the respective Legislatures of said States” (Carriel, 1911, 162-163).

Although the Morrill Act laid the groundwork for colleges and universities to teach practical skills to the working class, it was not until the 1914 Smith-Lever Act was passed that a national cooperative extension program was formally created. Before the passage of this Act, some agricultural extension programs were already starting to form, and experimental farms were considered to be very valuable. In 1894, New York State Governor Roswell Flower signed a bill that provided eight thousand dollars to the Cornell University Agricultural Experiment Station to conduct extension work in horticulture (Peters, 2006). Due to the work of Liberty Hyde Bailey, who became chief of Cornell’s Bureau of University Extension of Agricultural Knowledge and later the dean of the College of Agriculture, resources for Extension work continued to grow each year, and Cornell went on to establish the first lasting office of agricultural extension work in the land grant university system.
Bailey’s vision for Extension was not only focused on improving agricultural techniques, but on educating, or “awakening,” farmers across the state. Being “awakened” was a combination of “sympathy with nature, a love of country life, and a scientific attitude, expressed by habit of careful observation and experimentation” (Peters, 2006, 192). His philosophy on the mission of extension greatly influenced what became the Smith-Lever Act of 1914. According to Peters (2006),

“The vision of agricultural extension work that he articulated during the 1893-1902 period was an expression of his pedagogical theory and his view of the place of extension in the mission of land-grant colleges of agriculture and experiment stations. It was also an expression of his analysis of the nature and causes of farmers’ problems and his ideals for agriculture and rural life” (Peters, 2006, 193-194).

Since the passage of the Morrill Act of 1862, Bailey argued that land-grant colleges and universities had been largely unsuccessful in achieving their agricultural education goals. This, in his opinion, was due to their failure to adapt to farmers’ needs. He argued that pedagogy at these institutions must be reconsidered, multiple approaches to teaching should be applied, and educators should allow students to engage with the world outside campus. Peters (2006) states,

“He emphasized that this view of agricultural education required a sharp break both from pedagogical tradition and from limited conceptions of who the agricultural students were and where they resided. Specifically, it required embracing extension, a new kind of educational work that would bring the academy into relationship with the people beyond the campus” (Peters, 2005, 195).

Upon the passage of the Nixon Bill, which was “the first appropriation of state funds to Cornell University for educational purposes in the institution’s history,” Bailey was able to start realizing his goal of the university reaching out to farmers (Peters, 2006, 198). According to Peters, “it was of great symbolic importance to Bailey that the initiative for securing legislation to support Cornell’s extension work came from farmers” (Peters, 2006, 199). Describing Cornell’s research, Bailey claimed they were “complementing” experiments of the farmers:
“Every food farm is, in an important sense, an experiment station, but its teachings, in order to be valuable and of use to the commonwealth, must be studied by a trained and disinterested observer. Such results, when published, are of inestimable value, because they arise from normal and practical conditions; and they inspire a confidence and sympathy which investigations conducted at a central experiment station can scarcely hope to awaken” (Peters, 2006, 200).

Bailey believed the most valuable work that would come from the Nixon Bill was related to teaching. Between 1896 and 1902, six reports were released on the progress of Cornell’s extension work. Regarding the development of university extension programs, Bailey argued,

“Probably no movement of the latter part of the century is destined to exert a greater influence upon the form of our institutions and civilization, than this attempt to leaven the entire lump of citizenship with the inspiration of higher motives. The agricultural experiment station movement is in itself a part of this general desire to carry the new life to every person, whether college-bred or not” (Peters, 2006, 201).

As opposed to various other extension programs, Bailey argued that agricultural programs required face-to-face connection with the people. The first eighteen months following the Nixon Bill, extension teaching was carried out at nearly fifty meetings and rallies with local horticulture educators. Although the group size varied, anywhere between twenty and four thousand, participants were generally quite engaged. While some meetings occurred in the orchards of local residents, others were in hotels. Cornell faculty spoke about the philosophy of different conservation practices, as well as “the new teaching of science and the new demands of the times” (Peters, 2006, 201).

Bailey’s goals for agricultural extension reflect those expressed by John Dewey, who expressed in essays such as “My Pedagogic Creed” that education is the key to social progress and reform. Peters (2006) explains,

“Within a farmer’s daily work there were two ideals of large and human significance that Bailey incorporated into his vision of education through agricultural extension work: the ideals of self-sustaining agriculture and of personal happiness. The latter was to be based on one’s relation with nature instead of one’s bank account. These ideals depended on
farmers’ intellectual capacities, their point of view on life, and their cultural and moral sensibilities” (Peters, 2006, 210).

In Bailey’s view, the role of extension should not be primarily focused on applying scientific discoveries to local farms, but rather to transform the ways that farmers were thinking about problems and allow them to develop an attitude of openness and flexibility.

A Brief History of Cooperative Extension

In 1914, the Smith-Lever Act was passed, formally establishing a national cooperative extension program across the country. This Act states,

“Cooperative agricultural extension work shall consist of the development of practical applications of research knowledge and giving of instruction and practical demonstrations of existing or improved practices or technologies in agriculture, home economics, and rural energy, and subjects relating thereto to persons not attending or resident in said colleges in the several communities, and imparting information on said subjects through demonstrations, publications, and otherwise and for the necessary printing and distribution of information in connection with the foregoing; and this work shall be carried on in such a manner as may be mutually agreed upon by the Secretary of Agriculture and the State agricultural college or colleges or Territory or possession receiving the benefits of this Act” (Clemson, 2016).

One hundred years after its establishment, comprised of 3,000 offices, Extension is the largest adult education system in the U.S. (Griffith, 1991). Although federal, state, and county governments originally funded Extension, budget cuts have required universities in many states to search for support from alternative sources. Currently, funding is obtained from the U.S. Department of Agriculture, state government, county government, and revenue from grants, contracts, gifts, and fees. (Franz, 2014). According to Franz (2014), Extension educators use four approaches to engage with communities: service, content transmission, facilitation, and transformative education. While Cooperative Extension was originally established with a focus on agriculture, it has grown to work in both rural and urban settings, focusing on many different issues, such as horticulture, health and nutrition, family and consumer science, the environment,
youth development, leadership skills, and community and economic development. Since the founding of Extension, its structure has also evolved:

“Engagement has changed over time, having started as university experts taking the traditional role of providing information to clients and now taking the form of Extension educators being more focused on creating and maintaining mutual learning environments with communities in addition to serving as content experts” (Applebee, 2000, 7).

As much of the information previously provided by Extension reports and pamphlets has become readily available through advancements in technology, more focus has been placed on the value of these educators as facilitators who create positive educational settings where community members can exchange knowledge through collaborative learning methods and discussions.

As the structure of Extension has changed over the years, many offices have been forced to work with other organizations to secure financial support for their programs.

“Funding for Extension’s engagement with communities has changed over its 100-year history, requiring Extension to become more adept at working with community partners to secure funding for educational programs. Available funding has become more focused on addressing issues rather than supporting ongoing programs. Efforts to measure and articulate the value of Extension’s work are increasingly funded by grants, contracts, gifts, and fees. Generating revenue and measuring and articulating engagement value for Extension work have become part of the performance review process for most Extension faculty and staff” (Franz, 2014, 11).

Over the years, a gap has been growing between researchers and Extension educators, as well as researchers and the general public. Peters (1996) argues that the land-grant mission evolved throughout the twentieth century, separating “professionals” from the remainder of the community. Describing the ideals and functions of land-grant institutions, Peters (1996) stated,

“In very rough terms, at the close of the nineteenth century the ‘product’ of land-grant institutions was understood to consist of two different ideals; the ideal of the well-rounded, publicly minded citizen stood in contrast to the ideal of the upwardly mobile, scientifically trained professional expert. As for the function of the faculty and the institutions themselves, there were also distinct and contrasting ideals. The institutions and their faculties were envisioned as both connected to and separate from the people and communities they were designed to serve” (Peters, 1996, 21).
Throughout the twentieth century, according to Peters (1996), debates centered on the meaning of democracy brought more attention to the role of higher education. Peters (1996) argues that those who viewed land-grant institutions as a tool for creating democratic citizens believed Extension was the primary resource for carrying out this mission. He explains:

“Nationally, during the first thirty years, three lines of work developed in cooperative extension: county agricultural agent work, home demonstration work, and boys’ and girls’ club work. Technical, civic, educational, and service aspects were present in each area. However, the accelerating development of technical expertise, the need to increase agricultural production during the Depression and World Wars, and pressures to take on service functions tended to pull extension away from its educational and civic missions” (Peters, 1996, 32).

According to Peters (1996), during World War I and World War II, Extension was required to assist in implementing governmental programs. Beginning in the 1940s, committees began to form arguing that Extension should reexamine its mission (Peters, 1996). In 1958, seven Extension Educators put together a report entitled “The Cooperative Extension Service Today: A Statement of Scope and Responsibility,” arguing the central mission of the organization is “education for action” (Peters, 1996). Their objectives included “greater ability in maintaining more efficient farms and better homes” and “greater ability in acquiring higher incomes” (Peters, 1996, 36). Although many reports were released during this time, Peters (1996) explains that many of the proposals introduced in these documents had not yet been implemented by the 1970s. He stated, “While the reform documents clearly urged a deepening of Extension’s civic mission, forces were in place that resisted such a move” (Peters, 1996, 40). However, according to Peters (1996), cooperative extension started incorporating these ideas in the 1980s.

Land-Grant Universities and Industrial Agriculture

Keith Warner (2007) explains the changes that occurred throughout the twentieth century when research scientists at land-grant universities (LGUs) began giving more attention to
agricultural input suppliers than growers. Warner states, “This kind of collaboration between LGU scientists and agricultural input industries found justification in the productionist ideology, and was very effectively sustained… this partnership enriched the wealthy few at the expense of the many poor farmers” (Warner, 2007, 49). Warner (2007) explains that small farmers and rural community activists in many states came together to demand significant changes at LGUs. In 1979, the California Agrarian Action Project (CAAP) and California Rural Legal Advocacy sued the University of California Regents and made claims about “the adverse social impacts of mechanization research: frustrating the efforts of farmworkers to organize unions, disadvantaging smaller farms, and compromising the quality of rural life (Warner, 2007, 49).

George McDowell (2001), a specialist in the Cooperative Extension Service, has argued that agricultural interest groups are “taking extension hostage” by determining the work of these agencies. Warner (2007) explains that while several LGUs were being criticized for playing a significant role in the development of industrial agriculture, including the negative social and environmental consequences, administrators in several states began developing sustainable agriculture programs in the 1980s. According to Warner (2007), these programs are targeted toward smaller, family farmers who need assistance with growing specialty crops and resources for direct marketing. Several of the programs also have farmers and community members on their advisory board to develop research agendas and programming. However, Warner (2007) also explained that all of these programs are very small and tend to be marginal to these LGUs. Warner (2007) stated that LGUs have “tended to conceptualize clientele rather narrowly, and created knowledge and technologies that have benefited a limited portion of the farming community” (Warner, 2007, 57).

Reexamination of the Land-Grant Mission
John Gerber (1997) explains that, although research and extension were two traditional functions of land-grant universities, those filling these roles have been attempting to serve separate entities, causing a fracture in the wholeness of the organization. In order to fix the system, he argues, there must be a rediscovery of purpose. Gerber (1997) states, “Since the process must include a renewed commitment to the public, the Cooperative Extension System is uniquely positioned to lead the transformation of the public university because of its historical focus on serving the public good.” In reestablishing the mission of land-grant institutions, Gerber argues universities should actively engage citizens in research and Extension programs as both teachers and learners, which would renew the sense of connectivity between institutions and their communities. He argues, “Creative means of encouraging citizen participation in setting the public research and extension agenda must be tested and implemented” (Gerber, 1997).

Although land-grant institutions played a significant role in the industrialization of modern society, including our commercial agriculture system, public universities are now being forced to acknowledge some of the downfalls that came with the success of these developments. Gerber (1997) argues,

“Regardless of one’s personal perspective on the relative value of these developments, agricultural knowledge generated and advocated by the land-grant universities indisputably contributed to many social and environmental changes within and beyond its former dominant position as the primary source of new agricultural knowledge. Lately, both the agricultural and nonagricultural elements of the land-grant system have received much criticism from sources both inside and outside the system.”

His vision of the twenty-first century land-grant university includes a whole-system, interdisciplinary, and programmatic orientation that would replace the traditional structure of hierarchy. The separation between knowledge production and knowledge application would no longer exist, and institutions would focus on systems thinking that identifies the complex roots of problems throughout society. Whole-system learning promotes community values and a more
inclusive understanding of methods for generating and validating knowledge, which is not accepted by all public educators. As Gerber (1997) explains,

“Many scientists believe that farmers’ knowledge has little value until it is evaluated by currently accepted scientific methods. Academic fundamentalism, or the refusal of the academy to value any truth that does not conform to its own professional standards, results in reduced communication, lack of respect, and limited trust between two communities that should be working together to create new knowledge and put that knowledge to work. Why does this occur? The answer is found in an exploration of values.”

By involving citizens who are most affected by the production of knowledge, such as farmers, land-grant universities can create a more representative and democratic public university system. Some of the changes that should occur, according to Gerber (1997), include redefining Extension as academic outreach; creating cross-functional teams; reconnecting with the “customer;” rediscovering the importance of indigenous knowledge; applying for goal-focused grants; and allowing the public to review research and education programs. Over the past 40 to 50 years, while Extension has tried to serve an increasing number of groups, there has been a decrease in political support. Rather than a continued attempt to reach new populations, Gerber (1997) argues that Extension should “learn to serve our traditional constituents such as farmers in new ways before we expand our target audiences.”

In order to renew the focus of land-grant institutions, Gerber (1997) states that these universities must build upon their strengths in basic and applied research and education:

“The public agricultural research and Extension organization that has evolved over the past 135 years is now dysfunctional and its future is in jeopardy. The land-grant organization should function as a systemically integrated system for the creation of new knowledge, the dissemination of knowledge, and the service to society by helping individual learners, families, businesses, and communities put knowledge to work. Today, the system’s components are no longer functionally integrated or coupled in a mutually supportive manner.”
If Extension is disseminating information without sufficient support from the research sector of these campuses, land-grant institutions are not performing at full capacity.

According to Gerber (1992), participatory research is an effective method for re-establishing the connection between farmers and researchers. Although farmers’ research objectives may differ from those of academics, Gerber (1992) claims their findings should not be considered less valuable.

“The preference for knowledge generated through currently accepted scientific methods is so strongly held by agricultural researchers that it is difficult for many to envision an alternative. Nevertheless, an argument can be made that the dominance of scientific knowledge is merely a social choice and that other means of generating knowledge are equally valid. Recently, the authority of agricultural science has been challenged by the sustainable agriculture movement. Although criticism of the dominant research model should be welcomed by scientists, it often is rejected as anti-science. Yet the essence of science is criticism, and scientists cannot afford to put their basic methods above evaluation.”

The debate between whether knowledge generated by farmers or that of scientists is more valuable has negatively impacted opportunities to communicate these findings on both ends of the spectrum. While researchers have specific training in experimental scientific methods, farmers have greater understandings about local conditions and sensitivity of the land that scientists generally lack.

Through viewing professional researchers as the primary producers of knowledge, a system is created in which researchers generate information, which is transferred by Extension and received by the farmers. Although farmers, Extension educators, and scientists are each viewed as individual entities in this system, a participatory model does not distinguish between research activities. Gerber (1992) argues, “Knowledge is not viewed as a commodity for transfer from the informed to the non-informed, but the result of a continuing, cooperative process among partners or co-learners.” In this model, all participants work together toward meaningful
solutions to real problems. Gerber (1992) compared this to Freire’s (1990) theory that knowledge emerges from the desires and interactions of people working together as a community.

“Unlike the dominant model of unidirectional research and education, the participatory approach encourages social relationships based on mutual respect for each partner’s abilities as both teacher and learner.”

Since farmers are not involved in the traditional research model in which Extension educators are expected to deliver results, these findings may not be applicable to their specific environment. However, if scientists were to involve farmers throughout the process, it is much more likely that these findings would be applied. In the participatory model, action is the ultimate goal.

While U.S. academics have demonstrated the validity and statistical reliability of on-farm research on large plots with actively involved farmers, resistance still exists from some agricultural scientists. Gerber (1992) explains,

“Introducing this research and education model to the land-grant community will not be a simple matter. The first reaction to a new conceptual framework for research and education is likely to be outright rejection, or even denial that it is new. However the exploration of a new (or rediscovered) institutional model followed by criticism, redesign, testing, and perhaps acceptance, is more likely during a period of unease or discomfort (Kuh, 1970). The current discomfort in mainstream agriculture caused by the sustainable agriculture movement may provide the catalyst needed for a serious exploration and testing of participatory research and education programs in the U.S.”

Although this has been an ongoing debate within the academic community for quite some time, it appears that a shift may have started. Gerber (1992) suggests this could be the beginning of a return to the traditional land-grant mission, particularly regarding the role of Extension:

“The participatory research and education model represents for some a rediscovery of an old tradition, the land-grant mission of service. It encourages researchers and extension educators to focus on the needs of growers rather than their own special interests. While the participatory model may not be appropriate for much of the research conducted at land-grant universities, it should have a place in many applied research and extension educational programs. Participatory programs are needed today, not only because they are more democratic than an expert/student relationship between scientists and growers, but also because they can be more effective than the expert/student model. Since most active adult learning is learner-driven, i.e., adults actively learn what they perceive they
need to know (Tough, 1982), new research findings are more likely to be understood and acted upon by growers when they are participants in the research process.”

According to Gerber (1992), periods of financial stress, along with growing public criticism, could also create the platform for universities to begin exploring new methods of operation.

Extension educators have also started reconsidering the role of their offices as technology transforms the ways in which the public accesses information. In 2009, Ohio State University’s Department of Extension created a new statewide team focused on new methods of information sharing. This process raised several questions, specifically regarding the traditional model of program delivery (transfer of information from educator to client) and the role of Extension educators as facilitators. According to Raison (2010), although most of the information that Extension educators provide can be found online, they can still use their expertise and resources from the university to generate social capital and community building. Raison (2010) explains,

“Agricultural Extension Education is not dead—yet. But if we do not sense this impending change, embrace the alternate methods our clientele have for accessing information, and then act to help them learn to use that information in conjunction with knowledge already available within their community, funding surely will not continue.”

While advancements in technology have profoundly impacted educational institutions, new methods of teaching and learning are being explored, and many departments across these campuses are reconsidering the best methods for reaching their students or clientele.

*The Value of Cooperative Extension*

According to Scott Peters (2006), there is a misunderstanding throughout the general public about the role of Extension work in communities. He explains,

“As we approach the national Extension system’s centennial, neither its continuing relevance nor its survival can be taken for granted. Survival hinges on public funding, and public funding hinges on perceptions of public relevance: that is, on the degree to which Extension is perceived to be of value in pursuing public interests and ends. With respect to this matter, the Extension system has a problem: it suffers from a narrow and relatively uninteresting image. Despite its broad reach and work, Extension is often
portrayed and perceived as nothing more than a neutral, one-way mechanism or conduit for diffusing research-based information in response to people’s questions about farming, gardening, and nutrition. If it were really true that this is all Extension is about, it would be hard to imagine—in the age of internet and tight public budgets—how its relevance and its continued existence at taxpayers’ expense could be justified. But this is not all Extension is about” (Peters, 2006, 14-15).

The primary mission of Cooperative Extension, Peters (2006) explains, is focused on human and community development. In his words, Extension is about “change,” and Extension educators work as “agents of change.” However, this also raises questions about what Extension educators are trying to “change” or “improve” in their communities. This is largely based on their individual missions or goals, as well as the needs of the community. However, Peters (2006) argues that technology cannot replace the value that comes from the human interactions and personal connections that Extension educators develop within their community, as they build environments where collaborative learning is possible and knowledge can be better generated.

Peters (2006) argues that the real value of Cooperative Extension is not found in reports or articles published about the organization or its history. Rather, the greatest significance of Extension is discovered in stories of those who have worked in this field and can share personal experiences from their program and individuals they have served. In these stories, the true purpose of Extension is revealed.

In recognition of the centennial celebration of the Smith-Lever Act of 1914, thirteen land-grant universities joined an initiative to discuss issues of civic engagement and the role of Extension. This became part of a yearlong blog series, focused on the themes and challenges of Extension, which contributed to research for a book by Scott Peters. According to the Imagining America website, these discussions concentrated on the fact that creating a “democratic culture that is grounded in an ethic of full participation, where all people have opportunities to learn and
grow and contribute to public life, requires support from all types of institutions” (Extension Reconsidered, 2016).

In describing what he has learned from researching the work of Extension educators, Peters (2014) states,

“The stories my colleagues and I have heard and collected reveal so much more. They show us that at its best, Extension also includes and is about the cultivation of civic agency and the development, growth, and creative expression of people and communities. And this means that Extension matters for reasons that reach beyond economies to include the pursuit of a set of rich civic and cultural ideals and values, including something we say as Americans that we stand for and believe in: democracy.”

Although passing along scientific knowledge and techniques that have been generated by researchers can be valuable to communities, Extension educators provide a broader service by allowing people to become more civically engaged and involved in democratic practices. In learning stories of these personal interactions, one may argue that Extension educators, by developing these face-to-face, hands-on relationships with constituents, are providing a valuable resource not only to these individuals, but also keen insight into how a land-grant institution can learn from its community and better position itself as a university of the people.
CHAPTER 3: METHODOLOGY

3.1 Research Design

This project utilized mixed qualitative research methods, including case study and evaluation, to analyze the role of land-grant institutions in supporting small farm and local food education at multiple sites across the Midwest. The cases included local food education programs outside universities, programs at the University of Illinois, and programs at other land-grant institutions. Evaluation methods were used to comparatively analyze local food and sustainable agriculture programs at five different Midwest land-grant institutions.

3.2 Qualitative Methods: The Benefits & Challenges of Case Study and Evaluation

According to Weiss (1998), qualitative evaluation “makes important contributions to the evaluation of social programs, including a focus on the perspectives of program staff and participants, an awareness of context and history, and ongoing documentation of how the program works” (Weiss, 1998, 269). In qualitative evaluation, Weiss (1998) explains, there are many different methods for data collection, including ethnographic investigation, short-term observations, informal interviewing, casual conversation and review of documents. Qualitative researchers attempt to look at programs holistically, viewing each aspect as part of a whole situation. Weiss (1998) explains, “They are concerned about the influence of social context. They try to understand prior history as it influences current events. Their emphasis is dynamic, trying to gain a sense of development, movement, and change” (Weiss, 1998, 284).

Robert Stake (1995) provides examples of cases in social service and educational studies. However, he states, “We cannot make precise definitions of cases or case studies because practices already exist for case study in many disciplines” (Stake, 1995, 2). Examples of cases include a child, a teacher, a classroom of children, or an innovative program. He describes cases
as “one among others” (Stake, 1995, 2). According to Stake, a teaching strategy or a policy is too ambiguous to be called a case. He states, “The case is a specific, a complex, functioning thing” (Stake, 1995, 2). Although the time that a researcher spends concentrating on a case may vary from a single day to years, Stake explains, “while we so concentrate we are engaged in case study” (Stake, 1995, 2). Describing the role of case researchers as evaluators, Stake (1995) states, “When fully in the role of program evaluator, the case study researcher chooses specific criteria or a set of interpretations by which the program’s strengths and weaknesses, successes and failures will become apparent” (Stake, 1995, 96).

In the 1950s and 1960s, post-positivism drew attention to the theory that qualitative researchers construct their own realities based on their values, culture, and personal beliefs. In some cases, these beliefs are so deeply embedded that even when researchers are committed to reflecting on their own preconceptions, these thoughts are inaccessible to the conscious mind. According to Owuegbuzie (2000), “However, at the same time, they believed that some lawful, reasonably stable relationships among social phenomena prevail. Notwithstanding, proponents of this school of thought tended to emphasize deductive logic, with much of their research being influenced by theory/hypothesis” (Onwuegbuzie, 2000, 6).

According to Robert Stake (1995), qualitative researchers “emphasize placing an interpreter in the field to observe the workings of the case, one who records objectively what is happening but simultaneously examines its meaning and redirects observation to refine or substantiate those meanings” (Stake, 1995, 8-9). Stake explains the benefits of this practice, as he states: “From their own involvement, they can interpret it, recognize its contexts, puzzle the many meanings while still there, and pass along an experiential naturalistic account for readers to participate themselves in some similar reflection” (Stake, 1995, 44). From 1925-1926, Margaret
Mead spent nine months collecting ethnographic data on the experiences of 50 Samoan females, ages nine to 20, to determine whether their transition from adolescence to adulthood is comparable to those in Western cultures. Most of her study was conducted on the island of Ta’u, an isolated island in the Samoan archipelago. In her conclusion, Mead argues these females did not experience the psychological “affliction” faced by American female adolescents, suggesting that they were able to “come of age” with more ease than females in Western cultures. The suggestion that Samoans were more sexually liberated than other cultures was controversial both amongst Christian Samoans and other anthropologists (Cote, 1992).

In the 1960s, New Zealand anthropologist Derek Freeman conducted research on the Samoan island of ‘Upolu, seeking to refute Mead’s findings. Based on his observations and interviews with these research subjects, Freeman argued that Mead was the victim of a hoax. He also argues that Mead contradicted herself in the descriptions of her subjects, failed to consider biological factors that influence adolescent behavior, and that she misinterpreted the findings based on her own theories (Cote, 1992). According to Cote (1992), “Mead eventually entertained the notion that her informants provided her with a skewed view of Samoan culture. Unfortunately, she should have considered this problem much sooner, and she should have at least warned readers in the preface” (Cote, 1992, 506).

However, some believe that Freeman misrepresented his interviews with Mead’s primary source, only pulling less than a page from forty pages of interview notes. According to Shankman (2013), “Employing systematically skewed evidence in tandem with exceptional claims about hoaxing, Freeman repeatedly misrepresented and misinterpreted Fa’apua’a’s testimony not simply to revise the ethnographic record but to damage Mead’s reputation in a deliberate and personal manner” (Shankman, 2013, 62). Although Mead and Freeman may both
have shortcomings in their arguments, the issue lies also with the nature of ethnographic research, which is difficult to replicate and not often generalizable. According to Cote (1992), this research technique “can be high in internal validity (accuracy), but low in external validity (generalizability)” (Cote, 1992, 521). The fact that Freeman conducted his research roughly forty years later, on a different island, presents many challenges when trying to completely disprove Mead’s observations and findings. For example, Cote (1992) argues that due to geographic differences, historical and political differences, and chance differences, it is doubtful that Ta’u in 1925 would have been the same as Western Samoa in the 1960s, as Freeman argues. According to Stake (1995), each researcher and case is unique: “The quality and utility of the research is not based on its reproducibility but on whether or not the meanings generated, by the researcher or reader, are valued” (Stake, 1995, 135).

3.3. Positionality

As the daughter of a central Illinois farmer, I was in a unique position as a researcher for these cases. Since some of the study participants knew my father or simply knew that I grew up on a small family farm, they appeared more willing and comfortable to share their perspectives with me. This advantage provided me with access to people who may have otherwise been hesitant about participating in such a study. My personal knowledge about struggles faced by small farms in central Illinois also framed my questions during interviews. For example, when participants mentioned events, groups or individuals with whom I was familiar, I was able to respond with follow-up questions. Due to the honesty and openness of these responses, I was hesitant about including the names of all participants. However, most participants wished to have their names included because they had such strong feelings on these subjects.
However, my position also came with certain disadvantages. For example, due to my personal background, I did not consider certain issues that may have been addressed by researchers who were raised in other cultures. Since central Illinois has a mix of males of females engaged in small-scale farming, I did not consider issues of gender and land ownership. Central Illinois also has a very low-level of racial diversity, and since this element did not exist in the communities that I examined, race was not considered in this study either. An exploration of both gender and racial diversity in small-scale farming may serve as a future study. Based on my background and connection to farmers, readers may also question my trustworthiness. However, due to their willingness to have names included in the study, participants must believe in their statements. Throughout the course of this research, a clear consensus arose between separate studies, which was also supported by my own observations and experiences.

3.4 Case Selection

*Programs Outside the University*

*Case One: Farmer Study Circles*

While speaking with University of Illinois Extension educators, I discovered that one of the first Local Food Systems and Small Farms educators facilitated study circles for farmers who felt disenfranchised by the university. After reading through an Extension publication of her notes from these meetings, I contacted a local farmer who had participated. This case was included to demonstrate the research and knowledge that farmers are cultivating outside the university setting. The farmer was very open about his experiences in the study circles, participation in university studies, policy work to protect small farms, and overall perspectives on the role of land-grant institutions in supporting farmers.

*Case Two: Prairie Fruits Farm*
Prairie Fruits Farm was selected due to their active involvement with the community and the unique perspectives of the owners as retired university professors. Due to the exposure their farm has received from being open to the public for dinners, farmers markets, and tours, there were many opportunities to observe educational activities. Along with collecting information on student, parent, and instructor reactions to these farm experiences, this study includes an in-depth interview with the farm owners. Due to their background in academia, they had very valuable insights into the potential for university involvement with local farms.

**Farm to School Case Studies**

**Local Food Purchasing in District 87**

While presenting at a Farm to School Conference at Lincoln Land Community College in Springfield, IL, a representative from the Illinois State Board of Education mentioned that District 87 had become active in farm to school activities. As part of this dissertation, the Director of School Nutrition for District 87 was interviewed about her local food purchasing efforts. A local farmer who sold cheese to these schools was also interviewed about his perspective on getting his product into this market. Although the University of Illinois Extension formerly served as the state lead for Illinois Farm to School, a non-profit organization (Seven Generations Ahead) took over in 2015. The challenges presented in these case studies reveal the ways in which outside resources could benefit farmers and/or schools that are struggling to maintain gardens and other local food education initiatives.

**Washington Elementary**

Washington Elementary was specifically mentioned at the Farm to School Conference as an institution that had successfully established a school garden. Due to the active role and
interests of teachers, parents and the administration in maintaining a fruitful garden, Washington provides an example of the possibility for schools to become engaged with local food education.

Irving Elementary

Also located in District 87, Irving Elementary is a low-income school in which a motivated teacher began a garden club for all students. Although there was a substantial amount of interest, the lack of administrative support and inability of many parents to participate presented challenges, and eventually the teacher discontinued the club. This case reveals the differences between such initiatives at a low-income school versus a non-low-income school.

Programs at the University of Illinois

Local Foods for Institutional Buyers

This workshop was selected as a case study due to the focus on increasing local food purchasing at the University of Illinois. Farmers, students, distributors, and kitchen staff were invited to serve as panelists, and participants across both campus and the community were invited to join the conversation about how to simplify the process for both farmers and institutional buyers. Notes were taken on presentations and observations throughout the workshop, and the wide range of representatives revealed both the demand for local foods at the university and the interest amongst farmers in strengthening these relationships. Follow-up interviews were conducted with presenters who have an active role in promoting local foods across campus, such as Dawn Aubrey, the Associate Director of Housing for Dining Services, and Matt Turino, the manager of the Sustainable Student Farm.

Participatory Research with Farmers

Two professors were interviewed due to their involvement in participatory research with local farmers. One professor was chosen due to her long history of active engagement with local
farmers, including presentations at the farmer study circles in the mid-1990s. Her work as the
director of a sustainable agriculture program on campus, one of the founders of the eOrganic
eXtension community of practice, and co-owner of a local farm has allowed her to develop
unique insights into the work involved in researching and supporting alternative farming
initiatives as a professor at a land-grant institution. The second professor started an urban
agriculture lab and community garden on campus. Along with teaching urban food production
and horticulture courses, he has been known to frequently give talks at Extension events for local
growers. His relationship with farmers has allowed his graduate students to conduct on-farm
research outside of campus. The perspectives of these professors revealed both the benefits and
challenges of engaging with local farmers as an employee of a land-grant institution.

Local Food Systems and Small Farms Extension Educators

Two Local Food Systems and Small Farms (LFSSF) Extension Educators were
interviewed based on their active involvement with farmers across central Illinois. Deborah
Cavanaugh-Grant was one of the first LFSSF Extension Educators in the state of Illinois, and her
long history of involvement with local farmers has provided her with a unique perspective on
their needs. She has been involved with many different sustainable agriculture organizations
across the state. Bill Davison is the LFSSF educator for the county that encompasses District 87,
and he looked into alternative possibilities for the Irving Elementary Garden Club after school
administrators chose to repurpose this outdoor space. He also attended the Local Foods
Workshop, and he is the founder of the Grand Prairie Grain Guild. His diverse range of
interactions with local growers, along with his interest in community gardens and local food
purchasing provided special insights into the roles of LFSSF educators.

Programs at other Land Grant Institutions
Five land grant universities in the Midwest were selected to comparatively analyze the work being done with small farms and local food initiatives at institutions that have centers devoted to research in this field versus those that do not. The Leopold Center for Sustainable Agriculture at Iowa State University was the first of its kind, and others have followed. The Michigan State University Center for Regional Food Systems and the University of Wisconsin Center for Integrated Agriculture are also unique to the Midwest. Although Ohio State University and Purdue University do not have centers devoted to this research, they have local foods educators who have become very active in this research across their respective states.

3.4 Data Collection

Farmer Study Circles

During my December 2015 interview with LFSSF Extension Educator Deborah Cavanaugh-Grant, I was informed about farmer study circles that occurred in the 1980s and 1990s, and she provided me with a binder containing reports that she had produced from facilitating these meetings. She also provided me with the name and phone number of a local farmer who was very active in these groups, and I contacted him asking whether he would be willing to participate in an interview. This phone interview occurred in March 2016, and it was recorded with an iPhone application.

Prairie Fruits Farm

In March 2015, I began conducting observations and surveys of educational tours at Prairie Fruits Farm. The surveys were designed to collect background information on previous exposure to local foods, as well as provide information to the farm owners on the aspects of their tours that students appeared to be learning the most from. The survey also collected information on student interest in becoming more exposed to local farms and foods. The children’s survey
included nine Yes or No questions and three multiple-choice questions. Adults who participated in these tours were given an open-ended survey that included a few questions about their perspectives on the tour and the children’s experience. This was designed to collect information on which aspects of the tour they believed to be most beneficial and educational for these groups. Over the spring, summer, and fall of 2015, I observed various educational tours and conducted surveys with different groups of children. This included observations of the tour guide’s interactions with students, their interactions with the goats and general responses to the farm, student interactions with each other, and the responses of their parents and instructors. I wrote my observations down in a notebook and administered paper surveys in a barn once the tours were concluded. The main space in the barn has tables where the students could sit with parents, chaperones or instructors who could assist with any questions they had.

The groups were informed about my observations at the beginning of the tour and told they would be given a survey at the end. I explained the relevance of the survey before handing it to students and waited for them to complete the survey before collecting it. No personal notes were taken that could reveal the identity of any participants, and they were not asked to reveal their identities or any personal information in the survey. Interviews were conducted with University of Illinois students in the fall of 2015. These were students participating in the tour as part of a course or program at the university, and the questions were designed to collect information on their experience and opinions on university involvement with local farms. An interview was conducted with the farm owners in February 2016, following completion of the observations and survey analysis. This interview was designed to collect information on their backgrounds, farm education initiatives, future goals, and experience with the university. Interviews were recorded on my phone and uploaded to my personal computer.
Farm to School Case Studies

Irving Elementary

Observations at Irving Elementary began in the spring of 2015 and continued into the fall of that year. The Irving Garden Club met weekly for half an hour before school began for the day. While attending several Garden Club meetings, observations were written down in a notebook. This allowed me to observe the Club activities, their reactions to working on hands-on gardening projects with their peers, the teacher’s engagement with the students, and the lessons that appeared to be taking place. Interviews were conducted with the teacher and students in December 2015. The interview with the teacher was designed to collect background information on the Garden Club, which she founded, including her personal experience, challenges, reactions from students, and activities they frequently participated in. The students were asked about their history of involvement with the Garden Club, favorite activities, and what they learned from these experiences. The teacher suggested students for the interview based on which ones had been in the Club for the longest period of time.

Washington Elementary

Observations at Washington Elementary began in the spring of 2015 and continued into the fall of that year. All observations were written down in a notebook. This included notes about which items the students were planting, the teacher’s lessons about how different plants grow, conversations between students while they participated in garden activities, and reactions to working in the garden with their peers. An interview was conducted with students at Washington Elementary in September 2015. This was designed to collect information on their history of involvement with the garden, personal views on growing your own food, what they learned from the garden, and their feelings about having a garden at their school.
Local Food Purchasing in District 87

An interview was conducted with the Director of School Nutrition for District 87 in December 2015. This was designed to collect information on the local food purchasing activities in this district, including the challenges and reactions that she has observed amongst the schools receiving these products. An interview was conducted with the owner of Ropp Cheese Farm in December 2015. This was designed to collect background information on the farm and his experiences with getting involved in selling to local schools and institutions, as well as opening his farm up to the public. All interviews were recorded on my cellphone and uploaded to my personal computer.

Local Foods for Institutional Buyers

The Local Foods for Institutional Buyers Workshop occurred in November 2015. While attending, I wrote down observations in a notebook and obtained contact information from individuals with whom I was interested in conducting follow-up interviews. I took notes on presentations, comments from the panelists, and networking opportunities between sessions, including the ways in which participants interacted and the local products served during the lunch and between sessions. A follow-up interview was conducted with Sustainable Student Farm Manager Matt Turino in December 2015, and it was recorded on my cellphone. This interview was designed to collect background information on the Sustainable Student Farm, the food they provide to the dining halls, and the educational experiences they provide to students. A follow-up interview was conducted with the Associate Director of Housing for Dining, Dawn Aubrey, in January 2016, and it was recorded on my cellphone. This interview was designed to collect information on relationships the university is building with farmers through local food purchasing, as well as the challenges to obtaining these products and possibilities to educate
students. A follow-up phone interview was also conducted with Alison Chiaro from FarmLogix. This was not recorded, but notes were taken on my personal computer during the interview, which was designed to collect information on the background of their company and its work to connect local farmers to institutions, including the challenges and growing demand.

**Interviews with Professors**

I was familiar with the work being done by both professors, and their names came up on several occasions during conversations with Extension Educators and other academics. I contacted them via e-mail about my study, and both were interviewed in January 2016. Both sessions were recorded on my cellphone. These interviews were designed to collect information on the benefits and challenges of conducting participatory research with farmers, as well as their personal values as researchers at a land-grant institution and experiences working in this field.

**University of Illinois Extension Educators**

After seeing Deborah Cavanaugh-Grant at several events for local farmers, I contacted her about participating in an interview. She informed me that Bill Davison was the LFSSF educator for District 87, where I was conducting research with the schools, and I contacted him about meeting to discuss his work. After several meetings, he agreed to participate in an interview as well. Both participated in interviews in December 2015 that were recorded on my cell phone. These interviews were designed to collect information on their experiences as LFSSF educators, their history working in this field, their opinions on the role of Extension at land-grant institutions, and their visions for the future of LFSSF educators.

**Extension Educators at other Land-Grant Institutions**

During my interviews with Cavanaugh-Grant and Davison, both mentioned other universities having centers devoted to local foods and sustainable agriculture. This led me to start
researching these institutions in the Midwest, and I contacted employees at five universities, explaining my research and requesting an interview. These interviews occurred between December 2015 and January 2016. All were recorded with an iPhone application.

**Interview with John Gerber**

During my interview with Deborah Cavanaugh-Grant, she mentioned several scholars who have conducted research on the role of the land-grant institutions in serving the public, including John Gerber, whom she had worked with during his time at the University of Illinois. Now serving as the Program Coordinator for the University of Massachusetts Sustainable Food and Farming program, he was the Director of the University of Massachusetts Extension System from 1992 to 2000. From 1989 to 1992, he was the Assistant Director of the Illinois Agricultural Experiment Station and Program Leader for Sustainable Agriculture in the Illinois Cooperative Extension Service. He formally established the University of Illinois Agro-ecology Program and served as a faculty member and Extension program leader from 1979-1989. Based on his experiences in Illinois and Massachusetts, as well as his research, this interview was designed to collect information on the development of sustainable agriculture programs at land-grant institutions, his opinions on the relationships between faculty members and Extension educators, and the role of land-grant universities in engaging with the public. This interview was recorded with an iPhone application in February 2016.

**Document Analysis**

While conducting this research, both academic and non-academic sources were used to collect information. Due to the nature of this topic, it was necessary to gather information from timely sources to reveal activities that are currently happening in this field. This included news and media outlets, such as the *New York Times* and *WBEZ*. I pulled information on school
demographics from the Illinois State Board of Education’s Report Card website, and I also collected information from the websites of local farms that were analyzed in this study. Since I was analyzing Extension programs at other universities, I frequently pulled information from their websites, such as reports or brochures. This was necessary to analyze the information and outreach they are providing to the public and their clientele. While examining Extension programs, I cited several studies from the Journal of Extension, which is not peer-reviewed, but contains information relevant to this dissertation. However, peer-reviewed academic articles were also used in conjunction with non-academic sources.

3.5 Challenges

**Farmer Study Circles**

Since the study circles occurred in the 1980s and 1990s, it was difficult for participants to remember some of the details from these meetings. However, they were still very open to sharing their experiences. When discussing sensitive topics, some participants were concerned about appearing overly critical. Therefore, one participant was given a pseudonym. When facing doubts about whether a research subject was comfortable with revealing his/her identity, I contacted individual participants after transcribing interviews to gain final approval.

**Prairie Fruits Farm**

Due to the age group being observed for educational tours, it was difficult for participants to concentrate long enough to take the surveys without assistance from an instructor or chaperone. Some of the students would skip questions or become distracted by their surroundings. In order limit confusion during this time, I would make myself available for participants who had questions. However, the parents or instructors were generally the most
helpful in explaining survey questions to the younger students. The return rate on the adult surveys was low due to their preoccupation with chaperoning the students.

While interviewing college students who participated in tours, there was some difficulty communicating with international students. Although they were very open to participating, I experienced some difficulty transcribing their interviews due to language barriers. These students made some interesting points; however, it was difficult to fit these interviews into the themes that had emerged throughout this case. Therefore, some of this data was left out of the final report.

**Farm to School Case Studies**

**Washington Elementary**

Due to the teacher’s busy schedule, it was difficult to find times when she was available for me to conduct observations. When she did not respond to messages, I had to try several different methods for contacting her. Since this garden was outdoors, scheduling was also dependent upon the weather. This teacher fit garden activities into her weekly classroom schedule, so the amount of time spent on the garden would fluctuate depending on how quickly the students completed their in-class activities and assignments. While outside, some students were more interested in the garden than others. Due to the size of the garden and the number of students in the class, they were divided into groups, and some would go to the playground while others worked in the garden, alternating between activities. Therefore, some students were in a hurry to finish their garden activities, while others were more interested in staying in the garden than moving to the playground. At times, this made observations mildly hectic. However, the students interviewed were quite invested in the garden and answered questions with much ease.

**Irving Elementary**
Shortly before I began conducting my observations at Irving Elementary, the school administration chose to build a buddy bench in the space that had been used by the Garden Club. This presented a challenge for the teacher, as she was forced to move all plants indoors and began having the Club meet inside her classroom. Garden Club was held once per week, for approximately 30 minutes, before school started. I would arrive around 7:30 am to meet with the teacher and observe the students as they participated in their activities. When interviewing these students, it was challenging to get responses that were more than just a few words. Although I asked follow-up questions and tried to make students comfortable, most never expanded upon their answers. Many students appeared to be very shy and hesitant about speaking, and one student was not comfortable with being recorded. After learning the Club lost its garden space, I contacted the principal to discover how they came to this decision. However, she did not respond to the final e-mails that I sent. While seeing the teacher struggle to try to find another space, it was challenging to keep from getting emotionally involved in this case.

3.6 Data Analysis

The surveys that were collected at Prairie Fruits Farm were hand-counted and tallied while entering the data into Microsoft Excel for analysis. After calculating the percentages for each response, graphs were created in Excel to illustrate the results. These were presented to the farm owners for discussion about outcomes of their tours and potential changes for the future.

All interviews were transcribed and open-coded to allow themes to materialize. Minors and subjects who seemed uncomfortable with revealing their identities were given pseudonyms. While conducting interviews and observations, the themes that arose guided the remainder of the research. According to Krathwohl (2009), this is known as the constant comparison method,
which involves a purposeful mix of data collection and analysis as the researcher codes field notes, analyzes results, and seeks indicators that appear throughout the data collection process.

Since multiple cases were involved in the study, both single and cross-case analyses were used to dissect the findings. Single-case analysis involved an examination of the findings at each site, and cross-case analysis compared the findings between schools, universities, and research sites within the community. When themes are analyzed across multiple sites, the findings have higher levels of validity and generalizability (Merriam, 2009).
CHAPTER 4: LOCAL FOOD EDUCATION OUTSIDE UNIVERSITIES

4.1 Sustainable Agriculture Study Circles: Farmers as Researchers

During the 1930s, the USDA Cooperative Extension Service started a broad federally funded program to train farm leaders in 39 states on how to develop and lead public issue discussion groups. This program led to over two million farmers getting involved in these groups (Cavanaugh-Grant, 1997). University of Illinois Extension Educator Deborah Cavanaugh-Grant explained the history of farmer-based study circles in her speech during the Illinois Land and Water Resources Conference in 1997, stating,

“According to Turner (1982) in the Ohio Farm Bureau Story, 1919-1979, the Ohio Farm Bureau launched its Advisory Council Program in Ohio in 1936 because members felt the need to develop a system that allowed small groups of farmers and rural people to come together to discuss and act on local economic and political issues. The program derived from several visits to Nova Scotia in the mid-1930s by Ohio Farm Bureau officials interested in learning about community self-help programs. Impressed by the cooperative spirit they saw in the rural community-based study circle program in Nova Scotia, the Ohio Farm Bureau launched a campaign to promote farmer-based advisory committees all across Ohio using the slogan ‘In the front room of your neighbor’s home, you build.’”

The Ohio Farm Bureau Advisory Council Program organizes meetings amongst likeminded individuals within the community, allowing them to discuss issues of interest within the comfort of their own homes. This has been a very successful community development model, providing a platform for residents to express their thoughts or concerns on issues impacting their families and/or friends. By forming a group or coalition, it is more likely they will receive a response from local representatives or policymakers. Along with providing structural assistance to Advisory Councils, the Ohio Farm Bureau collects feedback from their members about the issues being discussed by farmers and residents of rural communities. Cavanaugh-Grant (1997) explains that Advisory Council input is very important in developing Farm Bureau policy positions, and these councils allow members to contribute to collective action in public affairs.
Citing Henry Blid, Swedish professor of adult education, Cavanaugh-Grant (1997) explained that study circles provide “‘living’ knowledge that is intelligible to learners, whatever their educational background, and give adults analytical and critical skills that can be used to confront myths and prejudices.” For example, Cavanaugh-Grant mentioned her involvement with a study circle focused on race relations in central Illinois. Study circles are generally centered on issues that people face in their daily lives, allowing them to better understand the sources behind certain conflicts and actions that can improve problems within their communities. Therefore, participants are able to frame the agenda and create goals for the outcomes. Cavanaugh-Grant (1997) stated, “Study circles teach us that people’s experiences, stories, values, and opinions are important. They help us better understand the society that we are all a part of.” Therefore, study circles create a collaborative learning environment for all participants.

Study circles generally include a facilitator to lead the session. This individual assists the group in creating a collaborative atmosphere in which all participants feel comfortable sharing their thoughts and opinions. These sessions generally begin with participants sharing their personal experiences, followed by an analysis of broader perspectives on the issue and materials for deeper thought and reflection to prepare for future group meetings. Examining the potential impacts of study circles, Cavanaugh-Grant (1997) stated,

“The over arching goal of a study circle is to provide participants a deeper understanding of an issue by opening up discussions that focus on the values that underlie people’s opinions. Study circles create an environment where listening to others’ views can lead to an honest examination of our values and where working through difficult issues offers a chance of improving our communities and society. With such great potential to instill individual growth and social change, the question facing the agricultural community is whether we are ready to apply the power of study circles to the issue of sustainability in agriculture. And who will share the responsibility and leadership of taking study circles to the farms, towns, land grant universities, nonprofit organizations and other institutions connecting the many people with an interest in the sustainability of agriculture?”
In 1993, the Sustainable Agriculture Research and Education (SARE) Program funded a project for the Midwest Alternative Agriculture Network that included a study circle organized in Southern Minnesota by James Tjepkema, Rodale Institute Midwest Coordinator. He chose two members of the local Sustainable Farming Association to lead the study circle. The leaders selected seven farmers, three county extension agents, two district soil conservationists, a minister, an adult farm management instructor and a seed dealer to become members of the study circle. Three monthly meetings were held. The group began the first meeting by reviewing literature on sustainable agriculture and sharing their reasons for being interested in joining the group. According to Tjepkema (1993), “The all-inclusive goal of building support for sustainable agriculture seemed to stimulate a good exchange of ideas and thoughts in the group.” The second and third meetings were held on a study circle member’s farm, and although attendance decreased from 12 participants to seven and eight participants respectively, the members who continued attending the meetings were very passionate, and good discussions occurred. Tjepkema (1993) stated,

“At the end of the third meeting we realized that many members of the study circle simply enjoyed getting together to discuss farming and related topics. The study circle seemed to be a good social activity as well as a way to increase support for sustainable agriculture. Enriching social life while sharing ideas and thoughts on agriculture certainly seems to be a good combination for advancing sustainable agriculture.” (p. 3-2)

Study Circle Reflections

In an interview, Cavanaugh-Grant thoughtfully reflected on her experience coordinating study circles for sustainable agriculture across Illinois. She explained that she first encountered farmers doing their own research in the 1980s. This began with a group of farmers who had visited the University of Illinois campus with questions about sustainable agriculture and improved farming techniques, but were not provided with answers. Therefore, they decided to
start conducting the research themselves. In the mid-1980s, Cavanaugh-Grant worked with a representative from American Farmland Trust to secure a Joyce Foundation grant to develop a program that would allow farmers to conduct their own on-farm research in sustainable agriculture. The groups consisted largely of commodity farmers who wanted to make their farms more sustainable. Working with a representative from the Illinois Department of Agriculture, she created the Illinois Sustainable Agriculture Society. This included regional groups in areas across the state, such as Western Illinois, Northern Illinois, Central Illinois, and Southern Illinois.

According to Cavanaugh-Grant, her role was primarily administrative, and the farmers produced most ideas on their own:

“Farmers would have these ideas, and there were some research aspects where researchers would work with them. So, they would have this idea, like we have this tillage system, or this cover crop system, and they would put this system in… It was, to me, a very exciting time for these commodity farmers to look at developing these sustainable systems. But you know, we did it for many years, and then the Department of Agriculture and several others were involved. We got resources from the state to create this sustainable agriculture grant program… We had a lot of money, and numerous grants went to farmers, nonprofits, and universities, to do pretty amazing research. And so it was a good time. I think it was a lot of energy, but our campus, as a group, wasn’t buying it… But again, I feel so blest by these people who I met, these farmers especially, just so talented and visionaries, for how they were going to make changes.”

Cavanaugh-Grant continued by explaining that some of these farmers even got involved on a state level, proposing policies that would allow more opportunities to promote sustainable agriculture across Illinois. Many farmers also applied for funding through the SARE program. She stated, “There were a lot of changes, and we would not be here today without those guys. They made some huge contributions to how we look at agriculture today.” Between 1996-1997, Cavanaugh-Grant, along with University of Illinois Extension Educator Duane Dale, collected information discussed at study circles across the state. The sections below outline findings and summaries from study circles in counties throughout Illinois. After being written and assembled
by Cavanaugh-Grant and Dale, the Illinois Department of Agriculture Conservation and the University of Illinois Agroecology and Sustainable Agriculture Program published these reports.

_Avocates of Practical Farming and DeKalb County NRCS & SWCD_

The Natural Resources Conservation Service (NRCS) District Conservationist, the Soil and Water Conservation District (SWCD) Resource Conservationist, and a local farmer organized three DeKalb County study circles sessions in 1996. At the first meeting, twelve participants discussed experiences with cover crops in Northern Illinois, and a representative from the American Farmland Trust provided resources on cover crops. The group discussed red clover, wheat, oats, soybeans and vetch. According to the Cavanaugh-Grant and Dale (1996-1997), “The group decided that based on past success and nitrogen fixing ability, hairy vetch had the most potential as a cover crop for Northern Illinois.”

The second meeting involved conversations about composting bio-solids and yard waste. A farmer shared information about his composting system that involves a compost turner and testing equipment. Others shared experiences about composting horse and sheep manure. The NRCS representative provided information on using hog manure from a lagoon, shared the current standards and reviewed a waste plan for a large confinement operation. He also shared information on bio-solids and analysis from the DeKalb Sanitation District. The group discussed the potential issues involved with accepting non-composted bio-solids and whether organic farmers could use this material.

Their final meeting was scheduled to focus on sustainable practices in a conventional system. Seventeen individuals attended this session, and there were a wide variety of groups represented, including commercial farmers and bank managers. Although the plan was to review
changes conventional farmers could make without converting to an organic system, the
discussion shifted to the reintroduction of small grains to Midwest farms. An individual who
worked with Boone County SWCD on a grant to reintroduce small grains discussed the current
trends in small grain production, focusing on oats and barley. He also discussed marketing
issues, test weights, and an oat improvement program that he was developing with Quaker Oats.
By the end of the meeting, four farmers signed up for the program.

Black Prairie Sustainable Agriculture Association

A Resource Conservationist from the Christian County SWCD and a local farmer were
the coordinators of the Black Prairie Sustainable Agriculture Association study circle. At their
first meeting, members discussed the definition of sustainable agriculture, how the evolution of
current agricultural practices impacts the community as a whole, and water quality. The second
meeting included a dairy and beef farmer from Southern Wisconsin who shared his experience of
transitioning to organic. After being organic for 44 years, he was able to finally get out of debt,
and he shared stories about the success of his crops on his 124-acre farm. At the final meeting,
the study circle attended a workshop in Peoria entitled “Putting Small Acreage to Work”. This
included presentations from specialty crop producers on the logistics of successfully growing on
the practical, non-nonsense, hands-on advice we need when considering crop production, crop
development and other important small business options.” The main session included a
presentation on “Evaluating the Alternatives and Marketing,” while break-out sessions focused
on dried herbs, elk, brambles, ostrich, range chickens, beekeeping, and organic. The participants
gathered resources and information on the presenters. At lunch, study circle members discussed
the information they had gained.
Monroe County Study Circles

These study circles were centered on integrated pest management, fertility, and non-chemical pest controls in field crops. The sessions were designed to have a different farmer host each meeting. University of Illinois employees and Cooperative Extension staff coordinated and supported the meetings. Extension educators began the meetings by presenting on topics such as seedling disease, insect pests, fertility, herbicide injury symptoms and evaluating plant populations. After initial presentations, the group received training in the field, which was also led by an Extension educator. These training sessions included crop trouble shooting techniques, such as weed identification and crop scouting. The farmers also discussed their observations while working in the field. These sessions typically lasted 3-4 hours and ended with reflections on their work in the field or follow-up questions regarding what they learned during the training.

Southern Illinois Study Circle

Cooperative Extension staff, a representative from the Dixon Springs Agricultural Center (DSAC) and a representative from NRCS coordinated these meetings. At the first meeting, members reviewed where sustainable agriculture was occurring locally, how sustainable practices could be further implemented, and the role of the participants in training both their staff and farmers. At the second meeting, fourteen participants reviewed research on sustainable agriculture practices and analyzed how it may be applied to local farms. A significant portion of time was used to discuss how cover crops might be implemented into farm systems, including the impacts of rye varieties and their various qualities. Study circle members even decided to review ideas for a project to test on their farms that year.
The third meeting focused on the development of their on-farm project, an educational tour for study circle members, and a field day. A foliar feeding soybean study was chosen for the on-farm project. The DSAC representative determined the research parameters and provided criteria for use by anyone who chose to participate. Approximately six farmers chose to join the study. Over the summer, eight members of the study circle attended a tour of the University of Kentucky Western KY Experiment Station in Princeton. Over the next two days, the group also traveled to Jackson, Tennessee for the Southern Conservation Tillage Conference for Sustainable Agriculture and toured the Milan No-till Field Day.

Southeastern Illinois Study Circle

A study circle was organized to discuss agriculture in Clark, Coles, Crawford, Cumberland, Edgar, Effingham, and Jasper counties. When reviewing the question: “How do we affect sustainability in agriculture?” participants questioned whether most farmers in the area have enough ambition to incorporate sustainable practices on their farms. Although some government programs and policies have created opportunities for farmers to take advantage of resources to increase sustainability, such as the use of conservation tillage practices, participants expressed doubt over whether farmers would be willing to increase the amount of labor required, particularly due to the fact that modern agricultural technologies have significantly reduced the demand for physical labor in farming. According to Cavanaugh-Grant and Dale (1996-1997), “It was noted that research is targeted to commercial market dollar, but should be targeted to environmental and ecological concerns prior to profit.”

The group also discussed the differences between the terms “sustainable” and “organic.” All fourteen participants agreed that “sustainable agriculture” does not mean “organic production.” Although the group recognized that many producers associate the term
“sustainable” with the term “organic,” their mission would be to take a “middle of the road” approach. One participant suggested discontinuing use of the term “sustainable” in exchange for a different word, but a replacement was not found. The group agreed that environmental regulations will likely increase over time, and that sustainable agriculture should be promoted in order to meet federal and state environmental requirements. Although there has been an increase in environmental consciousness across the general population, Cavanaugh-Grant and Dale (1996-1997) stated, “it was pointed out that 80% of total ag production in the United States is accomplished by only 20% of the producers while 20% of the production is produced by 80% of the total producers.”

Participants expressed concern that middle-sized farms are disappearing while large-scale producers are continuing to grow. Suggestions to increase sustainable agriculture included producing grass-fed beef or starting a rotational program other than corn-soybeans. The report from Cavanaugh-Grant and Dale (1996-1997) stated, “input was provided that indicated that we are trying to kill this monster by attacking the wrong end. Rather than start at the tail we should be starting at the head—the head being education.” The group agreed that improved farming techniques begin with accurate education. One participant stated that soil health is not well understood by many producers, and that those working in the field should practice more effective communication. Although many people get information from the Internet, radio, or television, Cavanaugh-Grant and Dale (1996-1997) stated, “face-to-face communication is hard to beat, and ag producers seem to have a preference for one-on-one contact. One of the members present offered a parcel of land for demonstration purposes.”

*Western Illinois Study Circles*
A representative from the Western Illinois Sustainable Agriculture Society organized the first study circle, and a representative from Western Illinois University coordinated the second one. Participants included Extension educators, producers, agribusiness professionals, finance and governmental officials. Items discussed included “global positioning systems in agriculture,” “labor situation within agriculture and the concern of future family farms,” and the “economics of farming.” At the following meeting, fifteen participants discussed profitability and developed a list of factors that create successful farms. They also had conversations about fertility and reducing inputs through different management practices, including cover crops, manure, and low herbicide rates. Future meetings focused on the meaning of sustainable agriculture and factors that contribute to soil health. At the meeting that focused on soil health and quality, Michelle Wander, professor and coordinator of the Illinois Soil Quality Initiative at the University of Illinois at Urbana-Champaign, presented on her research.

Local Farmer Perspective

Dave Johnson, local organic farmer, was a member of the Illinois Sustainable Agriculture Society while these study circles were occurring. Due to his role in the study circles, as well as his involvement in several other groups and committees focused on promoting sustainable agriculture, he agreed to be interviewed about his experiences. His passion for this work was quite apparent as he reflected on the hardships and challenges faced by local farmers as they fought for the rights to their land and sustainable agriculture programs. In a phone interview during March 2016, he explained that in the 1980s, many farmers had incurred a great deal of debt and were considering alternative agriculture as a way to become more sustainable. According to Johnson, many of the early adopters of organic agriculture were part of these study
circles. Some of the demonstrations he was involved with included early no till systems that were used with soybeans and standing rye, testing soil amendments, and flame cultivation.

Although many farmers were involved with the sustainable agriculture movement, Johnson explained that others were forced to leave their land due to economic hardships. Despite the alluvial soil and tremendous production capacity, he stated that Illinois imports around 90% of its food, and the state still has regions with food deserts. He stated, “We haven’t taught people to be resourceful. We’ve taught people to go after the big dollars, make as much money as you can. We have partially destroyed small communities.” According to Johnson, there are currently less than 10 farmers per township. Although many would argue the industrialization of agriculture has been a success because farmers can now feed large numbers of people, Johnson argues this has also caused many people to become dispossessed due to the concentration of capital. He questioned why the university has not addressed this issue, suggesting this may be due to its relationship with Monsanto. He stated, “You can accomplish big things in a corporate structure, but the university should be looking to balance the social structure in the system, not necessarily feeding the corporate structure.”

While having lunch with a former Dean of the College of Agricultural, Consumer and Environmental Sciences (ACES), Johnson asked why the educational structure could not be changed in a way that prevents funneling resources solely toward big agriculture. The Dean replied, “If I do not do what they want me to do, the corn growers will have my job.” In this case, it appears the university has been influenced by funding from large agricultural and chemical enterprises, such as Monsanto, Dow Chemical Company, and DuPont Pioneer, which have infiltrated the market and advertise through corn and soybean farmers across the Midwest. The university’s interest in these corporate agricultural companies can be seen through the
Monsanto Multimedia Studio in the College of ACES Library or the Dow Innovation Center in the Research Park. Johnson stated, “We’re not looking for this wonderful objective where everybody has opportunity for ownership and contribution… The institution doing well is the most important.”

While attending a series of presentations on alternative production systems for a group from Monsanto, Johnson saw a former director of the University of Illinois Extension present his research on why non-chemical products do not work. Although other professors and researchers had presented on more environmentally friendly practices, such as foliar feeding and no-till production systems, the director stood up with a thick book and said that everything these researchers have presented on is “snake oil,” claiming that his research proves why these techniques do not work. Instead, he argued that farmers should be using N-Serve and fall applications of anhydrous ammonia. Johnson approached him afterward, questioning his arguments, and stated, “You’re letting the structure of agriculture dictate science.”

Johnson explained that those who represent GMO and chemical companies frequently argue that without these products, farmers would not be able to feed the world. However, he argued, “There has not been a lot of success with one particular ethnic group feeding another. Typically people have to feed themselves where they are.” He mentioned Inuit peoples as an example of cultural groups living in harsh climates, such as Northern Alaska, and still surviving on their own by consuming fish and birds, without large amounts of imported food. He added, “This is part of a hoax to support major agricultural structures.” Although the university has developed in response to the demands of large corporations, this does not work in conjunction with producing entrepreneurs. Students who graduate and work for these corporations are
serving the demands of the business rather than the needs of the people. Johnson argued that entrepreneurs identify those needs and differentiate themselves by creating new approaches.

When analyzing new agricultural approaches, Johnson stated it is important to find out what happened to farmers who have been dispossessed and under what set of circumstances they were driven off their land. Since many of these situations have been caused by large businesses taking over smaller ones, he argues that a balance in ownership needs to occur in order for any changes to happen. He said, “If they’re going to change the way businesses are being done and if you’re going to revitalize your socioeconomic structure, people need to have an opportunity for ownership.” If the university were to implement this concept, he stated, they would first need to teach it. According to Johnson, the university should also work to ensure that the research they are producing does not create a leverage point for one portion of society to control another.

Although he has worked with a professor who has conducted a great deal of on-farm research in soil health, which has been useful for central Illinois farmers, many other groups he has been involved with formed outside the university. For example, Johnson explained that a group was just assembled by individuals working in the agricultural field to conduct research on soil health and amendments. This group has thirty members, including farmers, representatives from the Farm Bureau, non-profit leaders, and other stakeholders, including a cross-section of individuals with many different perspectives. They will be sharing their thoughts on soil health and conducting research to test their ideas. He asked, “Why wasn’t the university doing this? Why weren’t they engineering something like this?” The group will meet about six times within an eighteen month period to participate in two-day intensive classes working on different farms. He said, “We did some of this in the seventies and eighties when we dug soil pits and got a soil scientist from the National Tillage Machinery Lab in Auburn, Alabama to come up and look at
what we were doing.” He explained that they examined root structure, tillage compaction, and the different impacts of tillage systems in cornfields and clover fields. He added, “That’s what education ought to be… Let’s just find out what is going on. Then if you’re in the position to leverage that knowledge, that’s great, but certainly to the benefit of everyone… rather than the expense of someone else.”

Johnson has been involved with several university studies, but many have been short-term due to funding or graduate students who need to complete a thesis or dissertation. He explained that many agricultural studies require several different replications over a long-term period in order to discover the most reliable outcomes. Although he described some studies as being more focused on outputs than the quality of the process, others were very beneficial, such as a research project on water quality issues that was conducted at his farm. Along with participating in research groups and operating his certified organic farm, Johnson has also been very vocal about the benefits of sustainable agriculture on a state level. He was one of the architects of the Illinois Council on Food and Agricultural Research, which was a line item in the Department of Agriculture budget and came out of general revenue funds. It was signed into law by former Governor Jim Edgar, and a group of farmers and other supporters lobby for funding each year at the Capitol. Although the state budget crisis has created many financial difficulties for programs like these, Johnson continues to serve as a faithful advocate for small, local, and sustainable farmers.

Conclusion

As demonstrated by Johnson’s account, the study circle notes, and reflections from Cavanaugh-Grant, farmers have become very proactive in applying their own knowledge to conducting research that could have positive, applicable consequences for the field of sustainable
agriculture. Although their research may differ from academic methods, it is clear that universities could benefit from collaborating and working with these farmers.

4.2 Case Study: Prairie Fruits Farm

Introduction to Prairie Fruits Farm

Located in rural Champaign, Illinois, Prairie Fruits Farm is a goat dairy and farmstead creamery run by two former University of Illinois faculty members. Previously employed by the University of Wisconsin-Madison, Wes Jarrell and Leslie Cooperband moved to Champaign in 2003 and, according to the Prairie Fruits Farm website, began to transition their new farm from “cash grain agriculture to perennial production with a lush cover crop of buckwheat. In 2004, they planted over 350 fruit trees and 600 berry plants and purchased their first four Nubian goats.” Since being licensed as a Grade A goat dairy and farmstead creamery in 2005, their herd has continued growing, and they now have over 70 milk goats. The farm also includes an 8-acre pasture, a 5-acre hay field and a 2-acre restored prairie. According to their website,

“Their farm embodies core principles of sustainability including environmental stewardship, economic viability and social responsibility. They strive to educate the community about organic and sustainable agriculture and the connections between food production and consumption. They also serve as a model for others interested in small-scale diversified farming systems.”

Within their goatherd, they have Nubians, La Manchas and Nigerian Dwarfs. Their operation is Animal Welfare Approved, and their website contains information about their livestock production practices: “We integrate rotational grazing practices with locally-sourced grains and alfalfa hay. Our pastures are managed organically and all of our local feed is non-GMO, including our grain and our hay.”
On a cold February morning, Wes and Leslie welcomed me into their home to share the history of their farm and how it has evolved over time. While taking this journey, they have collected a great deal of information from programs in other states, which they believe could benefit local farmers in Illinois. Both were very open and willing to share their personal thoughts and feelings on the current state of Illinois sustainable agriculture initiatives. Based on their work both inside and outside the university system, they provided very valuable insights into the status of local food education programs.

Transition from Academia

Both Wes and Leslie are very dedicated to providing education to local farmers, as well as the broader community. They both worked in Extension at the University of Illinois and at the University of Wisconsin-Madison because they wanted to have a close connection to farmers. After years of working for land-grant institutions, both felt inspired to begin their own farm. Leslie stated,

“Extension has been gutted, and it’s a skeleton of its former self. And really, Extension was originally the liaison body between the research community and the general public. When you have a skeleton force and folks have been demoralized for at least 15 years, it’s really hard for them to be effective communicators with the public. That said, the people who are left are incredible and do a fantastic job and are really innovators in spite of the system.”

Wes formerly served as the Department Head of Natural Resources and Environmental Sciences (NRES) at the University of Illinois, with appointments in research, Extension, and teaching. Explaining the outside forces working against the Cooperative Extension System, Wes stated,

“It’s in the best interest of big ag to get rid of Extension, because Extension was designed to provide unbiased scientific data to the users. And that could be the consumer, the farmer, the producer, the processor. The faster you get rid of Extension, the sooner people don’t have any reference point. They take the word of the field man who is selling fertilizer as to how much they are supposed to apply. And the field man… a lot of them are pretty good, but they’re going to err on the side of selling more than the farmer
actually needs. The same goes for seed, all the GMO seed and everything else. You can’t get permission to test a lot of the GMO seeds in an unbiased trial because they have manipulated the regulations so much that Monsanto has to sign off on these trials, and it’s just outrageous that the U.S. has let this happen. I got into ag because of Extension, because here’s a model where I could be a researcher and do science and link it to some practical public good. And so did she (Leslie). And to see it intentionally dismantled and leave everyone to the mercy of business, which is sort of the global plan right now, I would say… is incredibly frustrating and demoralizing.”

Other farmers, researchers and Extension educators interviewed throughout this process shared a similar sense of disillusionment stemming from the lack of support for small farms and Extension programs in Illinois. The growing influence of commercial agriculture and lack of support for small farms is a reoccurring theme that appears in the following chapters.

*On-Farm Research: Connecting the Scientific to the Practical*

Due to the demands placed upon faculty to publish and work toward receiving tenure, it is also challenging for professors to perform hands-on work with farmers. Leslie explained her experiences with the study circles started by Illinois farmers who felt separated from the university in the 1980s-1990s. At the time, she was a research scientist at the University of Maryland, conducting on-farm research. Michelle Wander, NRES professor at the University of Illinois and her former graduate school classmate, introduced her to these groups. Inspired by these meetings, she went back to Maryland and started a study circle in her community. “There was a pretty core group of sustainable ag farmers at that time that was vocal and creative and had a lot of good energy and wanted to see things happen,” she said. While reflecting on the current situation, she stated, I think you will find that within the university there are still a few faculty who are really interested and engaged in framing questions that will be useful to the practitioner or community. And in other states, they definitely have farmer-involved projects that result in very tangible things that farmers can use or not depending on where they’re going with the findings from the research. So I think it’s there, it’s just not there in any kind of systematic way. And it really is dependent on the individual faculty member to take the initiative, and if they want to do that no one is going to stop them as long as they end up
with publishable papers. It all has to fit within the reward structure for a faculty person, which is acquiring money, training graduate students, and writing papers. If they do those things and help farmers too, then everything is golden.”

She said this is challenging unless faculty members are very motivated to design their research under this framework. Since it is difficult to find environments that are supportive of participatory research, she believes there are fewer faculty who are willing to conduct this work. Wes explained that funding has also become an issue. For professors who are interested in working with the local community, these projects are likely to be dependent upon receiving federal grants, which are designed based on federal priorities. He believes that if stronger support existed for Extension on the administrative level, the budget for this program would not have become so dismal on a national level.

According to Wes and Leslie, organizations outside the university have been created in response to the lack of support for farmers. They recently attended a conference that was organized by the Practical Farmers of Iowa, and Wes shared some of what he learned about the structure of this organization. He stated,

“They were started 30 years ago by a group of farmers who felt the university was failing them in terms of giving them practical useful information. So they had been doing some on-farm research, but then they started this organization. And the whole thrust of the organization initially was research on farms done by farmers and then shared with other farmers. So it was open and transparent. So they seem to be thriving and doing really well. Of course they collaborate with the university whenever possible, but they do so much more than the university alone could do or wants to do.”

Discussing the benefits of scientists conducting on-farm research, Leslie stated,

“That really is kind of the ultimate in the sense of engaging the farmer in what the research questions are and having the opportunity to show them what they’re finding. Sometimes it gets people to change their practices because now they have data to show them that maybe their practices were detrimental to the environment or not resulting in as high of productivity as maybe they could get with some other practices. Some people even design their research projects based on what the farmers have as questions, and so there’s kind of a spectrum of engagement with the farmer and it usually is beneficial
because there is just a lot of historical mistrust and farmers think that the university is just in an ivory tower and not doing things that are relevant to their concerns.”

Wes expressed concern over the loss of field stations across Illinois, fearing the connection between research scientists and farmers will completely disappear as these continue to close. He stated, “You could look at small plots, or small-scale, well-controlled trials that are transitions between research labs and practical farmers. So it was part of the continuum.” Explaining why these programs are being cut, he stated,

“I think the university has just kind of lost touch with agriculture, and so the Dean has to explain why these things are important…. What used to be the driving force of the university in the 1860s is just less than a few percent, and yet it’s one of the best connections to the public…. We always thought that in the land grant we needed to just focus on the farmers, and that was back when 50 percent of the population was farmers, and that was a great thing, because that was 50 percent of the votes. Now it’s less than one percent… So we should focus on people who eat, namely everybody. And so it’s in everybody’s interest that agriculture succeed because that’s where their food comes from, but the land grant never made that switch.”

As “agrihoods” (residential neighborhoods centered around working organic farms) are appearing across the country (Murphy, 2011), there is growing evidence of people wanting to become more closely connected to their food sources. If this trend continues, pressure for universities to become more supportive of this movement will likely increase.

Local Farms & Universities: The Benefits of Collaboration

Although they have opened their farm up to the university, only a few professors have engaged by bringing their classes to the farm. The vet school has brought first and second year students and the Food Science and Human Nutrition Department has brought a lower-level class to the farm for tours, but no scientists have expressed an interest in conducting research there.

After participating in a tour with her Food Purchasing class, a University of Illinois student expressed her thoughts on the value of educational tours at local farms: “I’m someone
who values local, organic food a lot, and I think the climate of the university is not necessarily that way… I think big ag is a little more discussed.” When asked about ideas on how the university could support local farms, she stated, “I think Dining Halls and things like that should be supporting local agriculture in that sense, versus giving them money, actually using their product to give students, as a lead by example sort of thing.” Along with taking classes on field trips and sourcing local ingredients for campus dining, she mentioned an additional idea for potential university involvement with local farms: “I know the U of I has a farmers’ market on campus for vegetables, but it would be cool if it was bigger and included places like this.”

Prairie Fruits Farm has also had very little contact with University of Illinois Extension educators. Although a former Extension educator who was specializing in dairy had an office about fifteen minutes from the farm and was giving presentations across the state, he never contacted Wes or Leslie about working with their farm. Wes stated, “And it’s partly because every article he wrote was ‘get big or get out.’” He further explained,

“We get four thousand plus people here per year, and wouldn’t it be great to tell people how great the university is? But we can’t tell them that. We can certainly say there are some good people there; they’re doing good stuff. It’s great to be near there because we get students who are interested. But in terms of any explicit support, it’s non-existent.”

Although they cannot publish their work in peer-reviewed journals, Wes and Leslie have continued conducting their own research on the farm. This has included a study on enhancing the environment for native pollinators and beneficial insects through the succession planting of cover crops, introducing more diverse plants into their pasture, and analyzing how the nutrition of goats affects their lactation. In order to better connect with local farmers, they are also interested in creating a store that would serve as a nucleus where other farmers could sell their products. Wes stated, “But if that evolved, it would become an aggregation point, so local restaurants could buy from one place instead of eighteen different farmers.”
Wes and Leslie are planning to continue their on-farm educational programs, and they are also hoping to expand into more adult education programs for local farmers. During their tours for children, they are planning to become more focused on food, goats, and the environment, featuring their pollinator collection as a learning tool. For adults, Wes has been developing an immersion-style farmer-training program. They just released a survey on their website to determine the level of interest and the feasibility of potentially creating this program. The beginning of the survey provides a review of what the program would include:

“We are looking for your honest opinions about a possible ‘Farmer and Food Systems Professional Program (FFSPP).’ The program duration is 48 weeks, January through December. Each month, we will focus on a different central theme. The proposed weekly format would be theory in the mornings and practice in the afternoons during three days of the week at Prairie Fruits Farm & Creamery, while two days of the week will be spent on field trips. Lunch will be provided for students each weekday. Living accommodations are available near the farm but not on the farm. Instructors will be mostly practitioners (i.e., farmers, individuals employed in other parts of the food system) with some academics and/or Extension specialists. The program will accommodate approximately 20 students per year. The program will build strong linkages within production support networks, markets, other farmers, and resources for land, financing, equipment, etc. This program is intended to go far beyond many farmer-training programs, to create environments that ensure success for graduates and enhancement of sustainable food systems.”

Wes further explained that the modules could also be presented as stand-alone workshops or mini courses that may be offered a few times per year for those outside the program. Although there are a few programs in Europe that are similar, he said there is nothing like this in the U.S. The initial goal of the program would be to train farmers within a 50 to 100 mile radius of Champaign-Urbana, and the long-term goal would be to develop another program about 300 miles away to start training farmers in another region. Explaining his reason for wanting to start this educational program, he stated, “I just don’t think the reward system of the university would allow this. And I think there are a lot of really good young people who are interested in it, but where do they get the training?” This program is different than an apprenticeship or an
internship, he explained, because in most of those programs, you only learn about one specific operation, rather than farming overall. Prairie Fruits Farm also offers adult classes in cheese appreciation, cheese pairing, and cheese making.

When asked about the potential of the university to become more involved with local farms, Wes and Leslie agreed that a paradigm shift is required to make this feasible. Both the reward structure for faculty and the increasing competition for federal funding have presented challenges for scientists who would like to participate in on-farm research, which Leslie argued is reflective of a universal trend of people becoming less willing to pay for services that benefit society as a whole. She stated, “It would take a paradigm shift or a resurgence of awareness that it’s worth paying tax dollars to fund this kind of infrastructure because it benefits everybody.” However, they do not foresee the state or country moving in this direction.

Educational Tours at Prairie Fruits Farm

From spring to the fall of 2015, educational tours for children’s groups were observed. The study focused on which aspects of the tour have the greatest educational value for students while collecting background information on their previous exposure to community farms and local food education. Surveys were given to participants and their parents, instructors, or group leaders. The first field trip of the season began with Girl Scouts planting seeds inside the barn as Wes explained the history of the farm. It was a chilly March morning, and the girls were bundled up in their coats as they sat at tables, surrounded by Prairie Fruits food products and memorabilia. They were happy to be working indoors on this day, escaping the frigid temperatures by planting inside their own little pots. He briefly explained the importance of soil, mentioning that nutrients in the soil allow plants to grow. He taught the girls about the difference between soil and dirt as they planted royal burgundy green beans in little containers with peat
moss and soil. Wes explained that the bean looks red or purple as it grows and turns green when it is cooked. One girl called the contents in the container dirt, and another exclaimed, “It’s not dirt; it’s soil!” Wes asked the participants what the soil smelled like, and a girl responded: “It smells like good soil.” The adults in the room laughed, along with Wes and Leslie, who are well acquainted with the rich and earthy aroma of soil fertility that brings joy to farmers as their noses detect the nutrients. Leslie explained that when students transfer the plant into their gardens at home, they should not bury it too deep, and it would be helpful if they included a stake for the beans to climb, mentioning “Jack and the Bean Stalk” as a visual for the children to understand how tall these plants can grow.

After being provided with a brief background on the farm, tour participants walk to the goat barns. On warm and sunny days, the majority of the tour occurs outdoors, and introductions are often given while standing next to the garden. According to the tour guide, over 120 kids (baby goats) were born in just a few weeks, starting at the end of February. Their new goat breed, the Nigerian Dwarf, is only 2.5-3 lbs at birth, but can grow up to 50-60 lbs. Green collars were given to the males and orange to the females. Since the newborn goats must be fed three times per day, volunteers sign up to help with feedings at the farm. The tour guide provided background on another one of the farm’s goat breeds, Nubians, which produce milk that is higher in butterfat and solids. The children often laughed and squealed as they watched the little goats prance around in their pens while the guide explained the unique characteristics of the breeds.

As the goats grow bigger, they are transferred to different pens. Some are sold to dairy farms, 4H projects, or other farms for meat production. At the time, they had 72 milking goats, and the adults wear collars with nametags. The tour guide explained that when the goats are seven days old, their horns are burned off, a procedure known as “disbudding.” When they are
this young, they still have a hormone that prevents them from feeling pain. If they still have horns as adults, they will not be able to fit into their milking stations, and the one goat that did not lose her horns during the disbudding process is also able to unlock the gates. A donkey was grazing in largest pen with the adult goats, and the guide explained that he keeps predators away.

Next, the groups view the milking station. The goats are fed grain while milking, so they are eager to walk into the station. Their tits are dipped in iodine, and milk is pulled out with a machine, running through long pipes before getting chilled. The goats produce 60-75 gallons of milk per day. Tour participants also view the cheese making room through a window. The guide explained that other farmers take the whey after it is drained during the cheese making process. It is high in protein, so it is often fed to pigs or used as fertilizer. Prairie Fruits Farm often produces nine different styles of cheese throughout the season. Some of these varieties, such as the blue cheese, are aged for up to four months.

The tours typically conclude with the groups sampling cheese and Madagascar vanilla goat milk gelato. The children would often get very excited and ask how gelato is different from ice cream. Since gelato is constantly turned and receives less air, it is more dense than ice cream. It also contains less fat because it is produced from goat milk, but still tastes creamy. The tour guide would often inform the groups that Wes and Leslie participated in a course at “Gelato University” in Italy to learn how to make their product. They have a wide range of gelato flavors, including salted caramel, hazelnut, strawberry, thai basil, lemon, and thyme. The flavors change with the season, as they often use fresh herbs and fruits from their own garden and orchard as ingredients. Any additional products used in their gelato, such as syrups, come from other local farms. They also produce sorbettos (dairy-free) using local fruits. Near the end of the spring, tour
Participants can find a variety of plants growing in the garden and blossoms on the orchard trees. Throughout the summer, groups can learn about their vegetables and pick berries or peaches.

In 2008, they also started hosting dinners on the farm from May to October, featuring multi-course meals that include their own products, as well as ingredients from other Illinois farms. The theme of each dinner is based on the season, allowing guest farmers to feature their products during peak freshness. The featured farmers often educate guests about their farming practices as part of the dinner. Dinner participants may also tour Prairie Fruits Farm.

Survey Results

All tours for the children’s groups followed a similar format. Observations were conducted at several different tours, and the surveys were administered to various groups throughout the season. Approximately 105 children and 21 parents or instructors were surveyed over the duration of the tour season. At the end of the tour, the children filled out a survey that included nine Yes or No questions and three multiple-choice questions. The parents or instructors occasionally helped the younger students who may have experienced difficulty understanding or focusing on the survey. The adults were given surveys with three open-ended questions that included space to write out their own answers. Neither of the surveys required participants to list their names, so all respondents remained anonymous. Although some of the adults did not have time to complete their survey while assisting the children, most of the parents and instructors who did answer the questions expressed a great deal of satisfaction with the tours. When asked, “Do you believe this experience was beneficial for students who struggle in the traditional classroom?” the majority responded by mentioning that hands-on learning experiences positively impact their students. This was the major theme that appeared amongst all answers. Below are excerpts of the responses to this question:
“Yes, hands-on learning is great for kids who have trouble with traditional classes.”

“Yes, I think students benefit from hands-on learning experience that they are more likely to remember longer.”

“Yes, some students learn more effectively with hands-on interaction. My daughter enjoyed this tour.”

“Yes, hands-on learning seems to help ALL kids retain info.”

“Yes, I do. Children learn better with visual learning and hands-on experience.”

“Yes, I think that when students actually get to experience ‘hands-on,’ they retain the information much better than just reading about something because they become more engaged.”

Adults were also asked what they believed was the most valuable lesson their students took from the tour. The primary themes that materialized for this question were environmental education and learning about local food sources. Excerpts included:

“Of course the goats, but also hearing and seeing the milking process. They are all studying about saving the earth at school, so seeing about the composting and using everything to create other things—seemed to impress them.”

“Where their food comes from. Why it is important to keep our soil clean.”

“Raising goats and producing cheese all in the same location.”

“How goat’s milk can be used for many different products.”

“The importance of organic, locally grown and made products.”

The groups included Girl Scouts, children in the Champaign Park District summer program, and students from local schools. Most children were between the ages of five and twelve years old. About half of the students indicated this was their first farm tour, and 47 percent responded that they had tried food from central Illinois farms before. These questions were designed to collect background information on the level of previous exposure tour participants had to local farms, reflecting the potential benefits that more educational programs
of this nature could have on children. 63 percent indicated they have thought about where their food comes from, and 75 percent responded that they would like to know where their food comes from after participating in this tour, indicating the possibility that exposure to local farms may influence student attitudes toward food sources, causing them to potentially consider social and environmental consequences in the future. The responses to the multiple-choice questions are illustrated with pie charts below. Students were asked about where their family purchases groceries in order to collect more background information on previous local food exposure.

*Figure 4.1*

![Food Purchasing Locations](image)

Although the chart reveals that a significant portion of the children were not aware of where their families purchase food, likely due to this age group, it was encouraging to see the twelve percent increase between children thinking about where their food comes from before the tour (63%) and wanting to know about the origins of their food after the tour (75%). This also illustrates the need for students to receive more education on food sources.
There was a correlation between the number of parent and group leaders mentioning the benefits of hands-on learning and children indicating this as their preferred learning method. The following pie chart illustrates the learning preferences of children who completed the survey.

*Figure 4.2*

<table>
<thead>
<tr>
<th>Learning Preferences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taking quizzes and tests</td>
</tr>
<tr>
<td>Listening to classroom lectures</td>
</tr>
<tr>
<td>Watching videos</td>
</tr>
<tr>
<td>Hands-on activities</td>
</tr>
<tr>
<td>Reading books or articles</td>
</tr>
<tr>
<td>Other</td>
</tr>
</tbody>
</table>

If these survey participants are representative of the larger population of youth in central Illinois, it is likely that many students benefit from participating in these tours or other similar outdoor educational activities, either by gaining knowledge that may allow them to develop deeper understandings about the origins of their food, the community impacts of local farms, the environmental benefits of sustainable agriculture, or by simply enjoying this unique learning experience and having a chance to reflect on it. 77 percent of the tour participants indicated in the survey that they learn a lot when teachers take their class outdoors, and 87 percent “enjoy interacting with classmates during outdoor activities.”

The majority of survey participants indicated that they learned the most from visiting the goat milking room. Figure 4.3 illustrates the breakdown of responses to this question.
When reviewing these responses, Wes and Leslie mentioned the possibility of setting up a milking demonstration with a model goat to provide students with a more hands-on opportunity to learn about the goat milking process. They may also be able to develop more interactive learning options through allowing students to engage with their pollinator collection, garden area and orchard. Currently, they are in the process of developing an updated guide for their educational tours. 91 percent of survey participants revealed they would like to try more local foods after participating in this tour, and ninety percent indicated they would like to visit more local farms. When asked if they would like to work or volunteer on a farm in the future, 61 percent responded “yes.” These responses demonstrate the high level of demand and interest in local foods amongst young people, indicating potential for local farmers to gain more attention and investment from the community, as well as the possibility for the university to become more
involved by sending students, researchers or educators to work on these farms, invest in their products and teach the public about the value of small farms and local foods.

**On-Farm Education Benefits**

A study conducted in Finland revealed that farm visits provide students with a realistic understanding of agriculture, which significantly influences awareness of communities and the responsibilities of citizenship. Since the 1950s, according to Smeds, Jeronen and Kurppa (2015), Finland has witnessed a significant decrease in farms, and there have been many structural changes within their agricultural system. Smeds, Jeronen and Kurppa (2015) argue that images in the media and children’s books provide an inaccurate portrayal of farmers and rural citizens:

“Authentic learning environments allow pupils to study the whole subject (a farm), after which the pieces of knowledge interact and form this complex image (farmer, agriculture, activities, history, animals, ecology). In an authentic environment the pupils are able to study the way in which every action, or absence of action, has a consequence” (Smeds, Jeronen and Kurppa, 2015, 10).

By providing students with an opportunity to visit local farms, teachers allow them to consider the ways in which their every-day decisions impact their local environment. Much like Finland, small and medium-sized farms across the U.S. are disappearing, which makes these learning environments even more unique valuable. Smeds, Jeronen and Kurppa (2015) stated,

“If children’s conception, opinions and values of agriculture is based on information blended with fiction, they will not be able to make truthful choices regarding food. They will not be able to correctly understand how their decisions affect their health, society, the environment, their culture or agriculture in a larger perspective, now or in the future” (Smeds, Jeronen and Kurppa, 2015, 12).

Although children who participate in a single farm tour may not feel inclined to pursue a career in agriculture, providing students with the opportunity to better understand the connection these farms have to the broader environment and community allows them to become more enlightened
citizens. If small farms continue to disappear, young people will most likely become increasingly disconnected from their food sources.

4.3 Farm to School: Opportunities for University Involvement

According to Benson (2014), the United States Department of Agriculture (USDA) describes Farm to School (FTS) as incorporating “local and regional foods into school meals and providing complementary educational activities to students that emphasize food, farming, and nutrition.” It is part of the Office of Community Food Systems and one of USDA’s Food and Nutrition Services initiatives focused on improving health amongst young people. It is also a key component of the USDA’s Know Your Farmer, Know Your Food Initiative, which coordinates support for local and regional food systems. In many states, Extension programs are affiliated with FTS, but in others, non-profit organizations work with the National Farm to School Network to serve as the state lead for FTS. In a 2014 survey conducted by Benson (2014), including eight different states, Extension educators reported being involved in an average of one FTS activity (school/community gardens, farm-based field trips for youth, farmer-based presentations, etc.), although they were interested in being involved with four FTS activities. This finding illustrates a potential opportunity for Extension educators to reach new audiences and begin developing more relationships between local farmers, schools, and universities, as well as collaborate with other governmental and non-profit organizations involved in this work.

Over half of the respondents reported being involved with school or community garden programs as a FTS activity. However, many of the open-ended responses revealed a desire for Extension to further explore opportunities for providing greater support in FTS programs. For example, according to Benson (2014), a respondent from Alabama wrote, “I feel that Extension should and can play a crucial role in connecting local farm products to school cafeterias,
developing school gardens, and developing farm to school experiential learning programs.”

Benson (2014) concluded that these results “demonstrate that farm to school is an emerging program area for Extension to support the redevelopment of local and regional food systems.”

The following sections illustrate an interest in FTS in central Illinois, as well as a need for these programs to be supported by outside sources like Extension.

Introduction: Central Illinois FTS Activities

The following sections provide an analysis of FTS activities at in Bloomington, Illinois, including teacher, student, parent, farmer, and administrator perspectives. This outlines both the benefits and challenges of developing FTS activities and provides an analysis of why some schools may be more successful than others. The two individual schools were chosen due to initiatives taken by teachers to start gardens for their students. Although these schools are located in the same city, the demographics are very different. According to the Illinois State Board of Education (www.illinoisreportcard.com), in 2014-2015, 86 percent of the students at Irving Elementary were from low-income families. This school also serves students who reside in the local homeless shelter. At Washington Elementary, on the other hand, only thirty three percent of the students were from low-income families in 2014-2015. According to the Illinois State Board of Education, Irving also has a higher level of student mobility (28%) as compared to Washington (10%). This refers to the percentage of students who transfer in or out of the school between the first school day of October and the last school day of the year, not including graduates. Although the University of Illinois Extension formerly served as the state lead for FTS, this position was transferred to the non-profit organization Seven Generations Ahead in 2015. However, the following sections identify ways in which schools and farmers may benefit from university support in developing these relationships.
Local Food Purchasing

One component of FTS programs is bringing local products into school cafeterias. With the sharp rise in childhood obesity in the U.S. and First Lady Michelle Obama’s campaign to promote healthy eating amongst young people, more attention has been centered on the content of school lunches, and some students have worked to bring awareness to this issue. For example, students at Albany Park’s Theodore Roosevelt High School in Chicago, IL started an initiative called “The School Lunch Project: Culinary Denial” as part of their Civics class. According to Daley (2015), the Civics teacher allowed them to choose a topic for this project, and they realized that if they started to boycott their lunch program, the food service company Aramark, which provides lunches to Chicago Public Schools, would not get paid. Their teacher explained that the students saw this as a way to force the company and Chicago Public Schools to offer healthy lunch options (Daley, 2015). The teacher estimated that 80 percent of Roosevelt students participated in the boycott (Daley, 2015).

As part of the project, the students also started a website that outlines their concerns regarding the lunches and pictures of their meals, most of which they claim are chicken patties, hamburgers and pizza. They state, “We remember Michelle Obama wanting to get CPS students to eat healthy. What we are eating is not healthy; sometimes it’s exasperating” (Daley, 2015). On the website, students explain the consequences of the boycott, which they believe has led to entire classes (seniors, juniors, sophomores, and freshman) skipping lunches on different days. As a result of the boycott, a team of students met with CPS and Aramark representatives to discuss alternatives to their lunch program, and five students were selected to taste new dishes (Daley, 2015).

The Illinois Local Food, Farms, and Jobs Act of 2009 states,
“In order to create, strengthen, and expand local farm and food economies throughout Illinois, it shall be the goal of this State that 20 percent of all food and food products purchased by State agencies and State-owned facilities, including, without limitation, facilities for persons with mental health and developmental disabilities, correctional facilities, and public universities, shall, by 2020, be local farm or food products” (Local Food, Farms, and Jobs Act, 2009).

FarmLogix is a startup company focused on connecting local farms with schools, restaurants and other institutions by utilizing technology and breaking down logistical and economic barriers. According to their Vice President of Sales and Marketing, Alison Chiaro, the biggest challenge for farmers trying to sell to local schools is obtaining GAP (Good Agricultural Practices) certification. In order to gain GAP and GHP (Good Handling Practices) certification, farmers must pass audits that demonstrate their fruits and vegetables are produced and handled as clean and carefully as possible to minimize the potential for food safety hazards. Although the state set a goal for all institutions to purchase twenty percent of their food products from local sources, Chiaro stated that almost no resources exist to help farmers understand these guidelines. Although University of Illinois Extension Educators have created presentations on GAP certification, the number of Local Food and Small Farm Educators has been diminishing across the state over the past year. Describing the farmers she works with, Chiaro stated, “Plenty of institutions would like their product, but I can’t move it anywhere right now. And I think there’s a fair amount of interest even just from the university and k-12 standpoint for local.”

In order to move these products into schools, Chiaro explains that farmers need to understand the budgets of these institutions. Most schools cannot afford farmers’ market pricing. She suggested that contracts should be negotiated between the schools and farmers to determine the amount of each product they need and how much may be possible for the farmers to plant each season. Some of the common vegetables that she has found schools serving include cucumbers, celery, carrots, and cabbage. Since schools are required to serve a dark green
vegetable, Chiaro stated that every publicly financed school has romaine lettuce and broccoli on their menu, but she has found very few GAP certified farmers growing these crops, partly because broccoli is difficult to grow in the Midwest.

On the other hand, she has seen a great deal of apples and carrots being provided by local farms. During the local season, FarmLogix helped schools find celery, cucumbers, cherry tomatoes, bell peppers, cauliflower florets and plums from local farms. Butternut squash has also been popular amongst the schools that still have kitchen staff cooking from scratch. Chiaro explained that FarmLogix is working with schools that have an interest in aggregating demand to align their menus with seasonal products available at local farms. FarmLogix is also an approved vendor for the USDA Pilot Project for Procurement of Unprocessed Fruits and Vegetables, which was part of the 2014 Farm Bill. According to the report on the USDA website,

“The goal of the Pilot Project is to develop additional opportunities for schools to purchase fresh fruits and vegetables with entitlement funding, while using pre-existing commercial distribution channels and school relationships with growers, produce wholesalers, and distributors. The pilot supports the use of locally grown foods in school meal programs using entitlement funds” (Pilot Project, 2016).

Eight states will be participating in the pilot program: California, Connecticut, Michigan, New York, Oregon, Virginia, Washington, and Wisconsin. According to a USDA press release, USDA Foods comprises roughly 20 percent of the food served in school cafeterias. The press release stated, “The pilot program will allow the selected states to use some of their USDA Foods allocation to purchase unprocessed fruits and vegetables directly, instead of going through the USDA Foods Program” (USDA, 2014).

Although Illinois was not one of the selected states, FarmLogix has worked with Michigan and Wisconsin to procure local products for their schools. Chiaro explained that they have procured local apples for Wisconsin schools, and these schools have also been purchasing
corn from local farms. While serving as a vendor, FarmLogix is also providing data to the USDA regarding the amount of local food items they are providing to these schools. She stated, “We’re hoping to provide data that will encourage them to expand the program.” According to the USDA press release, these states were chosen due to “demonstrated commitment to farm to school efforts, including prior efforts to increase and promote farm to school programs in the state, and the quantity and variety of growers of local fruits and vegetables in the state on a per capita basis” (USDA, 2014). The document further explained the program’s goal to strengthen relationships between vendors, growers, wholesalers and distributors, while increasing the use of these products in school meal programs. It also stated, “Building robust connections between farms and institutions, including schools, is a key element of USDA’s Know Your Farmer, Know Your Food Initiative, which coordinates USDA’s efforts and investments in local food system development” (USDA, 2014).

In 2013, the USDA conducted its first nationwide Farm to School Census in order to collect information and set achievable goals regarding the accessibility of local food in schools. In 2015, they carried out a second Census to track their progress toward these goals. This included a survey of over 18,000 public, private and charter school districts, and 12,585 districts (approximately 70 percent) responded to the survey. The latest Farm to School Census results, released by the USDA in March 2016, revealed that schools across the U.S. spent $789 million on local food purchasing in 2013-2014. The press release states, “That represents a 105 percent increase over the 2011-2012 school year when the first census was conducted, signifying the deepening commitment of schools nationwide to bring local food into the cafeteria and strengthen their local economies” (Farm to School, 2016). The press release also reveals that these programs commonly include nutrition education components, such as teaching students
where their food comes from, and it stated that school gardens have almost tripled in the past two years. According to the USDA survey results included in the press release, 42 percent of school districts that responded were operating farm to school programs during the 2014-2015 school year, and an additional 16 percent were planning to start these programs in the future.

School District Perspective

Julie McCoy, Director of School Nutrition in District 87, explained some of the opportunities and challenges involved with local food purchasing in Central Illinois during a December 2015 interview. Sitting in her office, she enthusiastically shared stories about which local farms they have been able to source products from, as well as information about local foods they are hoping to serve in the near future. Although some products can be difficult to move into schools due to packaging or pricing, apples were the top item they have been able to purchase locally in the largest quantities. They have also provided other local fruits and greens, and their milk and bread is sourced regionally, with bread coming from Earth Grains in Skokie, Illinois and milk coming from southern Wisconsin.

In the spring of 2016, she planned to test burgers from Bloomington Meats at the high school level. She stated, “We’re just going to trial it out because it comes in raw form, so we have to think about the storage and the cooking space and the time and staffing.” Although the cook at the high school where they will be conducting the trial was confident about being able to handle this amount of raw meat, she explained that many cafeterias and staff are not equipped for this, due to the time, training, and space required, as well as the number of students being served. According to McCoy, many kitchens are set up for “convenient cooking.” However, she explained, their high school and junior high have tilt skillets, which allows them to cook the patties more easily. After discovering that Soldier Field has purchased from Bloomington Meats,
she decided this could be feasible in their schools. She proceeded by contacting one of their representatives for information on their certifications, ensuring they would pass all of the requirements to be served in the schools.

One of the challenges, she explained, is that many farmers may not realize how many rules the schools must follow. For example, when she talked to the Bloomington Meats representative, she had to explain that they needed a two-ounce meat equivalent burger. Since their patty press was not the correct size, they needed to order a new one to form the exact size of burger the school needed. Even their fruit must be a specific size; so if an apple is too big, they can only serve a portion of it. Along with the size requirements and sanitation guidelines, products must also meet nutrition requirements. When a local producer contacted her about selling beef sticks, for example, she could not accept his item because the sodium was too high.

For farmers who would like to make their products available to students, but have trouble selling to the schools directly, she suggests working with the USDA Foods program to become an approved vendor. Many schools utilize these dollars for their meats, which tend to be one of the most expensive products. If they’re successful in selling their products to the USDA Foods program, she explained, schools could purchase indirectly from the farmers.

Farmer Perspective

Ropp Farm is a seventh generation, family-owned farm in Normal, IL. With milk from Jersey cattle, they have been producing a variety of flavored cheeses since 2006. Focusing on sustainable practices, the farm also provides beef, pork, and poultry products. Their cheese curds were available in District 87 schools for a few years, and they currently sell their product to Unit 5 schools in Normal, IL. In a December 2015 interview, Ray Ropp shared what he has learned
about providing local products to schools, restaurants and other institutions. It was a mild winter day, and the farm was not particularly busy with customers this afternoon. Sitting on a bench outside his store, located on their farm in the outskirts of Normal, he recalled the many experiences he has had with community members who have visited their operation. As he shared stories of their humble beginnings, a little spotted dog ran up to the porch and attempted to jump into my lap, gleefully licking my hand. When asked about the history of their farm, Ropp said, “One of the reasons why we did it- we wanted to give kids from the community and people from the urban community the opportunity to visit a farm and see livestock and see where their food comes from.” During their first four years, they had over 16,000 students, mostly from grade schools, tour the farm. However, after a mother sued them because a cat scratched her son, their insurance company told them they could no longer provide tours. He added, “which is really sad because we thought we were providing an opportunity for so many kids to be on a farm and see how their food was produced.”

Although they currently no longer have many young students coming out for tours, they still host 4H Clubs, FFA classes, and classes from Illinois State University to help them learn about how small farms are operated and become acquainted with the livestock. They also support other farmers by providing outside products in their store, such as eggs and chicken from their neighbors, as well as popcorn and honey from one of their friends. When asked about how they started providing their product to local schools, he stated, “Realizing there was an interest in consuming locally-produced food, we felt that might be an opportunity to approach the school system and find out if they would be interested in selling our product.” He said they are able to provide three or four different flavored curds to the schools. The most popular have been their
plain curds, green onion, tomato basil garlic, sun dried tomato and Cajun. They have been providing their curds to schools for three to four years now.

In order to build relationships and market their products across the community, they take their cheese to different stores, restaurants and events. He believes small farmers could improve their marketing strategies if the university were to provide classes on how to market products. He stated, “There is a greater interest now in people wanting to use home grown products, and with that interest, it would only be natural that the university would provide opportunities for producers to learn how to market their products successfully.” Although he has contacted both the University of Illinois and Illinois State University about providing his products to their dining halls, only Presby Hall and his former fraternity (Alpha Gamma Ro) at the University of Illinois carry their cheese. The Hedrick House also occasionally uses Ropp cheese for special events.

When asked about further support from the university, he stated, “I’m concerned that the university is totally losing the concept of the responsibility of being a land-grant college.” He explained that although the original mission of the land grant was to train framers, there has been a greater focus on funding other departments in recent years. He added, “It’s dollar-oriented. They will study and do research when someone gives them a grant to do it. But without those dollars coming in, they are not going to expand or do anything new.”

Washington Elementary School

Kelly Mathy, fourth grade science teacher, personally initiated the creation of the Washington Elementary school garden. After convincing others to join the cause, a group of motivated parents and teachers obtained thousands of dollars in grant money, along with donations from the city and various residents, to start the first school garden in McLean County.
The garden was established in 2010, four years after parents raised over $150,000 to create Wolf Park, the playground outside the school, which was built in five days by determined parents. Soil was donated by the city of Bloomington, and F&W Lawn Care and Landscaping provided a bargain on the remainder of soil that was required. When school is no longer in session, parents sign up to care for the garden over the summer.

The garden includes two peach trees, two apple trees, one cherry tree, and three blueberry bushes. They have several beds, some of which contain potatoes, others with green beans, trellises for cucumbers or tomato cages. One corner of the garden contains a large compost bin, which the teacher uses for lessons when filling it with weeds and food scraps. After students harvest vegetables from the garden, such as tomatoes or potatoes, they donate this food to the cafeteria, and most produce is used in salads for their school lunches.

While observing students during the spring of 2015, they appeared very motivated to take ownership over the garden. One day, Mrs. Mathy had given them flower seeds to plant in the asparagus beds. Walking through the garden with these students, they knew which beds had been tilled and proudly informed me. Although the students were told they could take turns planting and playing on the playground, one student watched and helped garden the whole time. When asked why she did not go to the playground, she said she “likes being in the garden,” but doesn’t have one at home because her father “loves his lawn.” She enthusiastically explained to the students that flowers attract pollinators, such as butterflies and bees, to the garden. She also said she would like to take care of the garden over the summer. The students were very pleased by the asparagus they had grown, and said they enjoyed it in their salads during school lunches. Last fall, they explained, tomatoes and carrots from the garden had been used in these salads. While working in the garden, one boy stated that he loves Brussels sprouts, explaining that his
grandmother cooks these with a raisin sauce, but he does not like the sauce because it is too sweet. The students were very polite and dedicated, asking questions such as, “May I please get my gardening gloves and jacket?” While using sticks to scratch very shallow lines in the soil and plant the flower seeds, the students found an earthworm and carefully worked around it.

In the fall, students had caterpillars in their classroom and were excited by the ones they found in the garden. When coming across one, they would move it to a safe place. Many plants had been destroyed due to a heavy rain that had occurred before school restarted. There was also a lack of parent involvement over the summer that year, and squirrels had eaten most of the fruit from the trees. However, the students were undeterred. They pulled weeds from all of the beds that no longer contained vegetables and cleaned up along the fences. The students also harvested pear tomatoes and purple, red, and yellow potatoes to take to the cafeteria. They mentioned that potatoes from the garden were also used in their lunches last year.

During a September 2015 interview, two nine-year-old students, who had been working in the garden for the past three years as Girl Scouts, reflected on their experiences. While sitting at a picnic table next to Wolf Park, the girls were very confident in speaking to their knowledge about growing fruits and vegetables. Although their classmates were enjoying free time on the playground next to us, they seemed to prefer sharing stories about the adjacent garden they had worked so hard to maintain. The first student, Kayla, said she spent time gardening with her family before getting involved with the school garden. According to Kayla, they planted peanuts, tomatoes and peppers at her home, and her grandmother grows rhubarb, carrots, dill and onions, along with other plants. Kayla also often picks fruit from her grandmother’s pear tree. When asked about having their own garden someday, both girls happily exclaimed “Yes!” and
described what they would like to plant. Both listed tomatoes as one of their first choices, and Kayla explained that pear tomatoes and orange tomatoes are her favorite.

Both appeared environmentally conscious, also describing the types of trees they hope to plant someday. The second student, Alisa, stated, “I would like to plant a tree if a son or daughter is born… I’ll plant a tree, so they can pick them in another year or when they’re older.” Kayla followed by stating, “I want to plant a tree, too. I definitely want to plant a cherry tree because those are definitely one of my favorites.”

They also described how they learned to identify plants in the garden. Kayla explained, “When we first started, we were really excited, and we all ran into the garden, and we got to pick weeds. And then there was this big bed of weeds, and we had to learn which ones were carrots and which ones were weeds. And I didn’t pull any carrots, but I had to ask some of my friends, ‘is this a carrot?’ because another person was pulling carrot tops.”

Both students said they did not realize how many different possibilities they had in the garden. At first, they thought they would only be pulling weeds when they returned from their summer vacation, but they ended up harvesting potatoes and planting radishes. They also both expressed disappointment over the missing fruit on the cherry tree, as Kayla stated, “I wish there was another cherry tree or fruit tree that wasn’t picked over yet, but all the squirrels got to them.”

The girls described picking pears, apples, and apricots from their grandmothers’ fruit trees, and Alisa stated, “I like them right off the tree. I don’t really like them from the grocery store.” Kayla agreed, and when asked why they prefer this over the grocery store, she replied, “I feel like the grocery store is not as fresh… like they have been sitting out, and they taste a lot different than you just going outside and just picking a cherry, washing it off, and eating it right away.” Alisa added, “Even though they say ‘fresh,’ it doesn’t mean they’re really fresh. And it’s more fun to pick it off the tree than to get it from the grocery store.”
Both expressed a significant level of gratitude for the opportunity to work in a school garden. Kayla stated,

“Knowing there’s a garden at our school is really special because not everyone is going to have a garden at their school. It’s usually just like a nice flowerbed in front of there, and not a nice, pretty garden. And it doesn’t even have to be pretty. It’s just special because I guess you could call it a tradition to pick things out of the garden.”

Throughout the conversation, both students conveyed a great deal of pride for the garden and displayed a substantial amount of knowledge about fruits and vegetables for their age.

Irving Elementary School

Along with teaching reading classes, Sharon Hartrich started the Irving Garden Club three years ago. She provided students with a questionnaire on why they wanted to join the Club and received 80 applications. Since she could only accept a certain number of students, she decided to use the Garden Club as an opportunity to help students improve their attendance and behavior. In the spring of 2015, the Club had 25 participants. Students had an outdoor space where they worked, along with plants inside the classroom. They also collected leftover food scraps in the cafeteria for the Club to compost. Throughout the school year, the Club met on Tuesday mornings from 8:30-9:00 am. Over the summer, Mrs. Hartrich took the plants home and brought them back in the fall. Some parents donated money or items, volunteered their time, or sent their students to work on an extra project with the Club, such as painting a fence.

In April 2015, students planted Indian corn, Jerusalem artichokes, collard greens, and Swiss chard. In another meeting, Mrs. Hartrich passed out milkweed seeds that she had collected while teaching students about how Monarch butterflies rely on this plant for nutrition. To motivate students to try new foods, she prepared vegetables in a unique way. During their time in the Club, students sampled roasted beets, turnips, zucchini chips, sweet potato fries, and
artichokes. A local nursery donated pumpkins to the club, which she dehydrated and sprinkled with sugar to make “pumpkin chips.” While working indoors, students prepared flowerbeds, painted planters, filled planters with dirt, or crushed eggshells and nutshells for compost. Mrs. Hartrich also frequently gave away various seeds, such as cantaloupe or corn, for students to take home and plant in their own gardens.

In a December 2015 interview, Mrs. Hartrich explained the history of the garden and the impact she believes it has made on her students. Although the Garden Club had recently struggled with some administrative changes, her perseverance and dedication to the Club was evident when witnessing the plants and gardening materials that filled her windows, tables, and floor. I met her in the classroom at 8 am, and she laid tools, seeds, and snacks out on the tables, preparing for the Club meeting as we spoke. The idea was conceived three years ago, when students became excited by a lecture on gardening. After noticing an empty patch of land in front of the school, she asked the principal if she could plant a garden. Since students are required to have good attendance and behavior, along with completing their homework, in order to become members of the Club, she has noticed students making these improvements in her classroom.

She has also noticed that the students who have stayed in the Club for years really enjoy the hands-on, interactive learning aspect, explaining that they generally stay engaged and show her what they have learned. For example, one boy told her the soil had high levels of nutrients after finding an earthworm. For students who are reluctant to work independently, she finds activities that seem better suited to their personality or learning style. During the Club, she witnessed some students mentoring others. She believes the Club has also caused interaction between students who normally would not be working with each other. Mrs. Hartrich has noticed a significant change in the personality of one particular student since she joined the Club. Before
becoming a member, Mrs. Hartrich explained, this student never talked to anyone. She stated, “Since she’s been in Garden Club, she has actually been more interactive with other kids, speaks to other kids, and has been more assertive.”

According to Mrs. Hartrich, the students ate almost everything they grew or worked with during the Club. In the winter, they made ranch flavored pumpkin seeds. After the students cleaned and dried the seeds, Mrs. Hartrich cooked them. When the students were outdoors, she said they harvested tomatoes and ate them while they were working in the garden. She also shared their products with students in the cafeteria. Mrs. Hartrich said, “Most of the kids who are in my Garden Club will try almost anything once.”

When asked about students maintaining an interest in gardening outside of school, she said many have started their own gardens at home or cared for plants purchased at the Club’s plant sale. One student brought a plant back to her a year after taking it home, questioning why it was not growing. Mrs. Hartrich explained to her that the plant had outgrown its container, and that she would need to transplant it. She helped the student transfer the plant into the new container, expressing enthusiasm over the fact that she had kept it alive for a year.

Near the end of the spring 2015 semester, Mrs. Hartrich was told that she could no longer use the outdoor space for the Garden Club because the school had received a grant for a buddy bench, which the administration had decided to build on the space where the garden had been. Therefore, Mrs. Hartrich transferred all of their outdoor plants into containers and moved these into the classroom. When asked about the transition, she stated, “It has been a challenge because I can’t work with as many students now. And a lot of students are disappointed because I used to be able to do a larger group.” When they were working outside, she explained, she could get students involved even if they were not officially Garden Club members. For example, if a
student was walking by and appeared interested, she could ask him/her to work on a project. After moving indoors, students continued to ask her when they would be able to work outside again. She has attempted to create an atmosphere in her classroom that resembles their outdoor space, including a trellis that she assembled in the classroom. However, she was forced to become more selective about which students could join the Club due to the lack of space.

When asked whether the administration has expressed an interest in helping them find a new location, she said the school dietician expressed that she would like for the Club to find a new space and for the students to spend time outdoors, but the administration has not mentioned whether this is possible. Mrs. Hartrich did not know how the school came to this decision, explaining that she was simply told the buddy bench would be placed in the garden space, and that they needed to relocate. Along with a lack of administrative support, the Club has also faced challenges due to lack of funding. Their main source of funding has been random donations, such as someone getting a bag of soil or free plants from the local nursery. Since many teachers have too many obligations to become heavily involved in the Club, Mrs. Hartrich looked into the possibility of hiring someone to work on grant writing and fundraising for the Club. However, she discovered this was not a possibility.

Although many parents are unable to become involved with the Club due to work schedules and personal obligations, some have shown their support. Mrs. Hartrich said one parent asked her company to provide a donation to the Club, which allowed them to purchase some supplies they needed. Others have brought their students to the school to work on summer projects and asked if she needed any additional support. She stated, “For our population, that’s a lot.” When they initially started the outdoor garden, people would occasionally vandalize the space, but this decreased as more students joined. She stated, “The kids have actually been more
and more respectful because the more they saw it, and the more kids were involved, the more that has gone down.”

According to Mrs. Hartrich, the Garden Club has been a positive opportunity for students who are working hard and doing well in school, and it provided them with an experience they may have otherwise never had. Although teachers are frequently focused on students who need the most attention due to behavior issues or not completing assignments, the Garden Club provided an opportunity for students who work toward good behavior to receive the same kind of attention. She stated, “It gives them something to contribute. Especially when we were outside, it gives them something to be proud of.”

During a December 2015 interview with a parent of two Garden Club students, Nessa McGill, who also works as a lead lunchroom supervisor at Irving, explained the significance of the Club to her third grade son and fourth grade daughter. They both joined the Club when it started three years ago, and they both frequently talked about their experiences with the Club when they were at home. Along with wanting to start their own gardens at home, they often told her about the food they tried during the Club and how it was made. She believes the Club was beneficial to her students due to their unique personalities and learning styles. Since her son has a more “mechanical,” learning style, she explained that the hands-on approach really appealed to him. Her daughter is very shy, and Mrs. Hartrich would give her projects that fit her preferences. McGill explained that her daughter likes to work individually, which the Garden Club allowed her to do. She stated, “She can just work on her plants, and it’s her safety.”

She explained that her son had experienced behavior issues in the past, but has worked toward controlling his emotions since he does not want to lose his membership in the Club. She stated, “They just like the fact of being part of an organization that, for one, not every kid at
Irving gets to be a part of. So it gives them something to look forward to.” When asked about their reaction to the Club moving indoors, she stated, “They were upset. They really liked being able to go outside… And we really didn’t have any control over it because they got donated some work to do to the playground, and it just took up where we had it.”

When interviewing third and fourth grade Garden Club students, there was a very noticeable difference between their level of articulation and that of the students in the Washington Garden Club. The students in the Washington Garden Club were very eager to share their experience and spent a lot of time discussing their favorite fruits and vegetables, as well as their opinions on the garden and why they enjoy harvesting food from it. At Irving, on the other hand, the students were very shy and hesitant about speaking, appearing unsure of how to respond to questions. Below are some excerpts from these conversations.

“Student One” was in third grade and had been in the Garden Club for two years.

**Interviewer:** What is your favorite thing about the Garden Club?
**Student One:** Smashing pumpkins.

**Interviewer:** Did you take any pumpkins home with you?
**Student One:** No.

**Interviewer:** Have you tried a lot of different food since you have been in the Garden Club?
**Student One:** Yeah.

**Interviewer:** What was your favorite?
**Student One:** Ranch-flavored pumpkin seeds.

**Interviewer:** What was your favorite thing to do outside?
**Student One:** Dig up some stuff from under the ground.

**Interviewer:** What kind of stuff?
**Student One:** Old plants.

“Student Two” was in fourth grade and had been in the Club for at least a year.
Interviewer: What is your favorite thing about the Garden Club?
Student One: That I get to grow plants.

Interviewer: What have you learned about the plants?
Student Two: I learned that they grow, and they need water to help them grow.

Interviewer: Have you eaten any of them?
Student Two: No. I ate pumpkin seeds.

Interviewer: Do you like working with other students in the Club?
Student Two: Yeah.

Interviewer: What do you learn when you are working with other students?
Student Two: They helped me work when I was doing it by myself.

Interviewer: What is your favorite thing you have grown?
Student Two: My favorite thing that I grew was a pumpkin.

Interviewer: Did you take it home?
Student Two: Mhmm. We made it as pumpkin pie.

Interviewer: Were you in the Garden Club when it was outside? What did you like about that?
Student Two: That I got to make handprints on the wall.

Interviewer: What did you grow outside?
Student Two: There were a bunch of bricks, and we got to move them so we could grow plants.

Interviewer: What kind of plants?
Student Two: I forgot because that was last year.

In February 2015, Mrs. Hartrich sent an e-mail stating that she was planning to have a plant and seed sale after spring break, and then she would wrap up the Garden Club for the remainder of the year. She planned to take a break from the Garden Club and discontinue any student activities at that point. When asked whether she had any intentions of re-starting the Club, she stated, “I would love to re-start the Garden Club in the future. Unfortunately there needs to be some very specific changes before that can happen.”

Conclusion
It appears that the lack of administrative support for the Club at Irving created many challenges for Mrs. Hartrich and her students. Although some parents offered support and seemed happy to have their students in the Club, there was very little involvement from parents as compared to the Washington school garden. This is likely due to the large number of low-income families with greater mobility, which creates barriers for parents who may have longer work hours or may not know how long they will be able to keep their students in that particular school. At Washington, on the other hand, parents were heavily involved in fundraising efforts, as well as building and maintaining the garden. The parents held several fundraisers throughout the community, donated materials, and conducted outreach to ensure that everything came together smoothly. The principal was also very supportive. Although Mrs. Hartrich even mentioned setting up a miniature garden on another side of the building after they lost their original space, the principal turned down the idea because, according to Mrs. Hartrich, she did not like the way it would look, indicating that she would rather have flowers or something to beautify the space other than vegetables grown by children. With almost no support for this endeavor, Mrs. Hartrich was single-handedly running a Garden Club that held significant interest amongst students who seemed to be greatly benefiting from this type of program, as illustrated by their improvements in behavior, attendance, self-confidence, and eagerness to learn.

Interviews revealed that Garden Club students at Irving did not have as much knowledge about vegetable gardening, and their communication skills were not as developed as students in same grade level at Washington. This could be attributed to the fact that students at Washington had families who valued gardening and exposing their students to food this way, and these parents may have had more time to be involved in these activities with their students. The fact that the Irving students did not have the same level of knowledge as the Washington students
reveals a greater need for a program like this at their school. Since Mrs. Hartrich is a reading teacher, it is also more difficult for her to work the Club into her classroom lessons, as opposed to the science teacher at Washington. Given her teaching duties, the fact that Mrs. Hartrich struggled to keep the Club going without outside support is not surprising. However, the consequence is disappointing given both the need and demand from these students. Although the Local Food Systems and Small Farms Extension Educator for McLean County attempted to find a new location for the teacher, this effort was unsuccessful. If Extension still had a staff member devoted to Farm to School, this employee would be able to devote more time to connecting teachers in these situations to community resources and could work toward securing grants for these programs. Based on my interviews, Farm to School Extension Educators in other states are able to frequently network with other community organizations to gain support for these schools.

A systematic review of the benefits of school gardens developed by several researchers, including many different qualitative and quantitative studies, indicates that Mrs. Hartrich’s strategy of recognizing and catering to the individual needs of those in her Club has educational benefits for students. (Ohly, Gentry, Wigglesworth, Bethel, Lovell, Garside, 2016). In their analysis of a study that involved a teacher who tailored activities to the needs of specific children, taking into consideration their individuals skill sets, the researchers stated, “In our view this has obvious links to the well-being impacts of confidence and self-esteem” (Ohly, Gentry, Wigglesworth, Bethel, Lovell, Garside, 2016, 30). According to their findings, “well-being impacts such as stress reduction may lead to academic impacts for some students, echoing the proposed mechanisms of Attention Restoration Theory, which suggest that contact with nature can restore depleted ability to concentrate” (Ohly, Gentry, Wigglesworth, Bethel, Lovell, Garside, 2016, 30). In reference to the impacts of garden-based education, “the ‘experiential’ or
hands-on learning style was described as an effective way to teach children academic subjects in a more applied and holistic way” (Ohly, Gentry, Wigglesworth, Bethel, Lovell, Garside, 2016, 30).

It appeared that students in the Irving Garden Club required more individualized attention and were more likely to suffer from emotional and behavioral disorders or learning disabilities. Ohly, Gentry, Wigglesworth, Bethel, Lovell and Garside’s (2016) findings also revealed that school gardens are likely to be the most beneficial for this population of students:

“Secondly, school gardens appear to have particular benefits for children who have complex needs (behavioural, emotional, or educational) and do not thrive in an academic environment. The evidence suggests that these children may be able to express themselves better in the garden, leading to feelings of calmness, self-esteem and success. Gardening may therefore be described as physical, social and visceral; distinct and complementary to the individual and cerebral nature of classroom education.” (Ohly, Gentry, Wigglesworth, Bethel, Lovell, Garside, 2016, 33).

In Mrs. Hartrich’s case, even when the Club was moved indoors, it appeared that students did not experience as many of these benefits as they had when working outdoors. Based on her comments and those from the parents and students, it was clear that students who struggle in traditional classroom settings were more likely to feel comfortable working on their own projects in the garden, which allows them to learn in their own unique style. Ohly, Gentry, Wigglesworth, Bethel, Lovell, and Garside (2016) also stated that the success of school gardens require support from stakeholders in the school and community. As evidenced by the discontinuation of the Irving Garden Club and the success of the Washington Garden Club, this is a crucial element that may be more difficult to find in low-income schools.

Increased focus on the benefits of gardens indicates there may be growing support for these programs. For example, four architects from Italy and the Netherlands have proposed an urban farm pre-school model called Nursery Fields Forever, which operates completely outdoors.
(Anzilotti, 2016). According to The Atlantic’s City Lab, Jonathan Lazar, one of the architects, stated that the projects aims to create “a real hybrid between a farm and school where children’s physical, social, emotional, and cognitive development would be encouraged by interaction with plants and animals” (Anzilotti, 2016). As projects like this continue to develop, future studies will most likely reveal the long-term social and educational impacts of exposing children to community farms and gardens.
5.1 Sustainability Initiatives

The Role of Land Grants in Global Food Security

Although commercial interests have significantly influenced agricultural education (Caldart, 1983), many land-grant universities (LGUs), including the University of Illinois, have been collaborating to research environmentally and culturally sustainable solutions to the global food crisis. In November 2015, Alex Winter-Nelson, Director of the Department of Agricultural and Consumer Economics (ACES) Office of International Programs at the University of Illinois at Urbana-Champaign, participated in a roundtable with other LGUs, including Cornell University, Michigan State University, University of Minnesota, University of Missouri, Purdue University, and the University of Nebraska, to discuss the role of LGUs in fighting food insecurity (Winter-Nelson, 2016). The Chicago Council convened the meeting on Global Affairs, and representatives from each institution specifically discussed the ways in which LGUs are uniquely equipped to build and support resilient food systems. In order for LGUs to work toward assisting other countries in building sustainable food systems, they must, Winter-Nelson (2016) states, “ensure the resilience of vulnerable people, often smallholder farmers in developing countries, who need control over productive assets, appropriate technologies, supportive market and public institutions, and the knowledge to adapt and thrive in a changing world.”

During this meeting, the group identified four important characteristics that separate LGUs from other players in food security initiatives: staying power, scope, knowledge dissemination, and public interest (Winter-Nelson, 2016). According to Winter-Nelson (2016) food and agricultural research requires a specific understanding of environmental and social contexts. Since many LGUs have conducted research both across the U.S. and the world, and
have established relationships with research institutions in other countries, Winter-Nelson (2016) believes researchers at LGUs have the knowledge to build resilient food systems in developing countries. In 1963, the U.S. Agency for International Development (USAID) assisted the University of Illinois in establishing Njala University of Agriculture in Sierre Leone (Winter-Nelson, 2016). Winter-Nelson (2016) states, “Njala has since produced a long line of distinguished scientists and administrators and its partnership with the University of Illinois continues in both research and instruction for building better food systems.”

Winter Nelson (2016) also argues that LGUs have the capacity to develop these food systems due to the wide range of disciplines represented by academics conducting research in this field. Since food system development requires input from specialists in fields such as biology, economics, policy, nutrition, horticulture, engineering and other fields, it is essential to have these representatives in the planning process. According to Winter-Nelson (2016), “Land grant universities are unique in that they bring together experts in these disciplines as well as regional experts and can integrate knowledge in a way that is sensitive to food systems considerations.”

International Food Security at Illinois; the Center for Global Food Security at Purdue University; the Global Center for Food Systems Innovation at Michigan State, the Tata-Cornell Agriculture and Nutrition Initiative; the Interdisciplinary Center for Food Security at Missouri; and the Water for Food Institute at Nebraska are examples of initiatives that have been started with the goal of bringing together researchers from a variety of disciplines (Winter-Nelson, 2016).

Winter-Nelson (2016) argues that considering the university’s history of providing information to the public regarding food production over the past 100 years, there are many opportunities for LGUs to continue disseminating this knowledge. According to Winter-Nelson
(2016), “That history is being leveraged to improve knowledge of food production, climate adaptation, nutrition, and health through USAID-university partnerships like Integrating Gender and Nutrition within Agricultural Extension Services (INGENAES) based at the University of Illinois.” USAID is also working with many LGUs that specialize in particular food-based research through its Feed the Future Innovation Laboratories, which addresses a variety of topics surrounding resilient food systems, such as sustainability, climate change, markets, etc. (Winter-Nelson, 2016). Analyzing the potential for LGUs to become increasingly involved in this movement, Winter-Nelson (2016) states, “Transformation of the food system implies large scale, coordinated efforts in multiple dimensions that transcend private interest groups, national boundaries, and scientific disciplines. LGUs offer exceptional capacities to address the challenge.” As noted in chapter two, many members of indigenous cultures across the globe have been threatened by the industrialized food system, experiencing a loss of control over their own land and production techniques. As Winter-Nelson (2016) mentioned, the key to developing resilient food systems in these areas involves collaboration from researchers who are sensitive to these cultural differences and willing to give control back to the members of these communities.

The Agro-Ecology and Sustainable Agriculture Program

Originated at a time when small farms were struggling across the state, the Agro-Ecology and Sustainable Agriculture Program (ASAP) resides within the Department of Natural Resources and Environmental Sciences (NRES) as an educational resource and tool for community members working toward advancing sustainable food and farming systems. According to the ASAP website, the organization began forming in 1988 when Dr. Harvey J. Schweitzer was named coordinator for sustainable agriculture within the Agricultural Experiment Station (AES). This was a collaborative effort between the College of Agriculture
and Cooperative Extension Services. An Ad Hoc Committee on Sustainable Agriculture was formed, which increased to over 100 members within 12 months. In 1989, Dr. Schweitzer retired, and Dr. John Gerber was named coordinator of the Agro-Ecology Program (for both AES and CES). A quarterly publication of Agro-Ecology News and Perspectives began that fall, and an agro-ecology seminar series started during the 1989-90 academic year (ASAP, 2016).

In 1992, the Office of Research in the College of Agriculture appointed Dr. Richard Warner as head of the Agro-Ecology Program, and Dan Anderson was hired as coordinator of on-farm research for farmers that had joined numerous sustainable agriculture organizations across the state. In 1994, Dan Anderson and Deborah Cavanaugh-Grant, who were both working as Academic Professionals in the Office of Research, began running the program, carrying out Extension activities related to sustainable agriculture under the supervision of Dr. Warner. This is also the year that the name was changed to from the Agro-Ecology Program to the Agro-ecology and Sustainable Agriculture Program (ASAP). During this time, ASAP was very focused on outreach and working with farmers, sustainable agriculture programs, and conservation agencies across both the state and region. They continued publishing Agro-Ecology News and Perspectives, supported training programs and field days, and facilitated the USDA’s Sustainable Agriculture Research and Education (SARE) programs (ASAP, 2016).

In 2003, ASAP moved into the NRES Department and was supervised by the new Department Head, Wes Jarrell, with the goal of making the program self-supporting within three years. Extension educators who had joined the Organic Task Force brought attention to the growing need for this program due to the passage of the National Organic Standards. In 2004, Michelle Wander was appointed faculty director of ASAP and created a board and faculty leadership team. The program has worked to develop and support educational events, such as the
Illinois Organic Producers Conference and the Illinois Specialty Crops, Organic and Agritourism Conference. In 2006, Cavanaugh-Grant left ASAP to develop the Illinois Small Farms program. In 2010, ASAP joined the Inter-institutional Network for Food and Agricultural Systems funded by the Kellogg Foundation to respond to the need to reduce human and environmental vulnerabilities across the food system. ASAP also had a large role in establishing the Illinois Organic Growers Association and continues to encourage networking amongst students, researchers and community members interested in sustainable agriculture (ASAP, 2016). Along with promoting community outreach, ASAP provides funding to graduate students who frame their research around questions relating to sustainable agriculture.

Alternative Farming & Local Foods in Campus Environmental Agendas

In 2013, the Institute for Sustainability, Energy and Environment (iSEE) was formed at the University of Illinois at Urbana-Champaign. According to the organization’s first annual report, their top priority is to create “a carbon-neutral campus by 2050,” which the university committed to working toward by signing the American College and University Presidents’ Climate Commitment (iSEE, 2013-2014). According to the report, “With the world population projected to increase rapidly in coming decades, we want to find solutions for the ever-growing demand for food, water and energy while ensuring a safe, productive and sustainable environment for all global citizens” (iSEE, 2013-2014). Along with research on sustainable infrastructure, water and land stewardship, and energy efficient technologies, iSEE has sponsored an Agroforestry for Food Project led by Urban and Regional Planning Professor Sarah Taylor Lovell. According to the project overview on iSEE’s website, Taylor Lovell described the project as follows:

“My Agroforestry for Food team is studying an alternative option for agriculture in the Midwest, initially targeting areas that are not best suited for row crops. We are comparing
a variety of systems—mixtures of trees, shrubs, and forage or hay—that yield multiple food (and fuel) products including fruits and nuts. We call them ‘Multifunctional Woody Polycultures’ because of the potential benefits of a more complex mix of permanent species. In addition to providing harvestable products in abundance, these alternative systems could offer environmental benefits such as permanent wildlife habitat, efficient use of nutrients, and storage of carbon—all of which we will measure. We recognize that these systems must be profitable for the farmer, so we are accounting for all costs and income streams to compare with the conventional corn-soybean rotation. We will also explore the potential for alternative agriculture to contribute to healthier rural communities by improving the agricultural landscape and providing job opportunities for residents” (iSEE, 2016).

The team has been working near the University of Illinois Energy Farm, and they planted over 12,000 trees and shrubs, including a Chinese chestnut tree, apple trees, pecan trees, currant shrubs, and elderberries on approximately 20 acres in the first week of May 2015 (iSEE, 2016).

In 2015, the university released its new Illinois Climate Action Plan (iCAP), which outlines the plan to create a carbon neutral campus by 2050. The initial version was released in 2010, and the updated guide reviews their progress and analyzes areas of improvement. While much of the plan proposes methods for reducing greenhouse gas emissions, the primary topics include energy conservation and building standards; energy generation, purchasing and distribution; transportation; water and storm water goals; purchasing, waste, and recycling; agriculture, land use, food, and sequestration; carbon offsets; financing; curricular education; outreach; and sustainability research.

In its section on reducing the carbon footprint of on-campus food, the plan states, “Dining already procures 28 percent of food from sources within 150 miles of campus, which includes 95% of all the produce grown on the Sustainable Student Farm.” (iCAP, 2015, 57-58). Although the committee had been focusing on increasing the percentage of local food purchases, the plan states that more attention will be given to researching greenhouse gas emissions (GHG) from food services, including which items generate the highest level of emissions, and it proposes
sharing this information with food vendors in order for them to consider how they may reduce GHG emissions based on their local purchases. The plan states, “The campus could also make a concerted effort to work with local farmers to develop robust markets for local foods, and local food processing facilities, which will enable a greater use of local foods both by our campus and our community” (iCAP, 2015, 57-58).

5.2 Local Foods for Institutional Buyers

Perspectives from the Director of University of Illinois Dining

According to Dawn Aubrey, Associate Director of Housing for Dining Services, food-purchasing trends have been evolving based on the values and interests of students. Dining Services is valued at $52 million annually, including five retail operations, a food truck, online services, full-service catering, and one faculty dining location, as well as their own warehouse, linen and floral departments. In 2014, they spent $1.52 million on fresh produce, including button mushrooms, yellow onions, sweet red peppers, red potatoes, broccoli, spinach, melons, blackberries, raspberries and pineapple. In 2014, the top purchases were ground chuck ($214K), mozzarella cheese ($208K), beef julienne strips ($166K), fresh chicken breast ($154K) and frozen chicken breast ($136K). In terms of moving toward a more sustainable food system, Aubrey mentioned that the University of Illinois is the first Big Ten school to implement “trayless” dining. Currently, according to Aubrey, 25 percent (by dollar volume) of campus food purchases are local. She also claimed that they divert 90 percent of their waste by recycling paper, plastic and glass; sending rendered fats to local farms for dust control; converting waste vegetable oil into biodiesel; and establishing four aerobic digesters on campus.

After completing a campus waste study in 2006 and talking with students about their priorities regarding sustainability, University of Illinois Dining Services realized there was a
demand for expansion in local food purchasing. Aubrey stated, “They made it very clear, they
cared about sustainability, local food being one aspect of it. So we have an obligation, not only to
do the right thing, but to reflect our students’ values.” After examining where their current
products were coming from and analyzing how much of this could be purchased locally, they
began to make changes.

When deciding which local farms to purchase from, Dawn explained that representatives
from Dining Services actually visit these locations, such as Central Illinois Poultry in Arthur,
Illinois, where they purchase chickens and turkeys. She stated, “We want to make sure it’s
produced appropriately. If it’s an animal protein, that animals are humanely treated and
appropriately slaughtered. Of course making sure they adhere to Temple Grandin’s humane
standards for livestock handling, as well as livestock harvesting.” While searching for local
producers and processors, according to Aubrey, Dining Services discovered that raw milk from
the University of Illinois South Farms could be pasteurized at a plant in Carlinville, Illinois. She
stated, “That’s the milk we serve. So it’s produced right here; it’s processed in Carlinville, and
we’re buying it back… We feel good about that.”

Although some products, such as bananas or lemons, cannot be purchased locally due to
climate in the Midwestern United States, Aubrey explained that they purchase within the U.S.
whenever possible and search for fair trade products when importing. When products cannot be
sourced locally, Dining Services can still occasionally support local businesses. For example,
Dining Services purchases coffee from the Columbia Street Roastery in Champaign, which is fair
trade and rain forest certified. Describing the relationship between the roasters and their coffee
growers in other countries, Aubrey explained how these towns and villages have benefitted. In
one particular case, she stated, “They have established roads, they pay for the school in the area, they pay for the hospital in the area, through their fair trade and rain forest certified coffee.”

Aubrey explained that many different definitions of “local” exist, and Dining Services has been tracking their products based on these varying interpretations. In order to comply with the Illinois Local Food, Farms, and Jobs Act, which requires that 20 percent of the products purchased by state institutions be produced in Illinois, Dining Services prioritizes Illinois products. Although this is the primary focus, they are also trying to purchase products from within a 100 to 150 mile radius of campus, which includes Indiana. According to Aubrey, 17 percent of the food dollars spent come from within 100 miles of campus, while 28 percent comes within a 150-mile radius of campus. When asked why they are currently examining the number of purchases that come specifically from a 100 to 150 mile radius, Aubrey said this focus came from the carbon footprint calculations in the original iCAP plan. She stated, “It was really about 150 miles being the ideal from a carbon footprint standpoint, and that’s where that definition originally came from.”

Since meat purchases, specifically beef, create the biggest carbon footprint for Dining Services, Aubrey stated that they have been hosting semi-annual educational events about being “flexitarian,” which teaches students about non-meat options and ways to reduce their meat consumption without becoming vegetarian. She added that some companies are working with a soy lab on campus to create new plant-based textured proteins. In March 2016, Dining Services hosted two educational events each week as part of national nutrition month. Although these events were geared toward promoting non-meat based nutritional options, Aubrey has welcomed local meat producers in order to educate students about the importance of local foods.
According to Aubrey, Dining Services is able to get a surprising amount of meats from central Illinois farms. Rantoul Meats provide a great deal of their pork products, and they purchase poultry from a farm in Barry, Illinois. When purchasing beef, Aubrey explained that they practice “nose to tail,” which means they attempt to use every part of the animal. Other non-meat products purchased from within 100 miles of campus include pumpkin, oats, apples, peaches, berries, maple syrup, jams, cabbage, soy, eggs, and cheese.

Aubrey recently began discussions with individuals who work on the University of Illinois campus farms about purchasing their eggs, and she believes these will be offered in the dining halls relatively soon. University of Illinois faculty and Extension educators have also been working to secure funding for a campus grain mill, which would be focused on heirloom grains. During a trial run, Aubrey stated, they were able to bake cookies, breads, pizza crust and various kinds of pastries from the heirloom grains. She assisted with two grants to grow grains and beans on campus, and she is hopeful that they will obtain funding for the mills. They are also working on renovating a campus food laboratory, which will allow them to work on experimental projects, testing out different ways to prepare and take advantage of local products. Working with a local fisherman, Aubrey has explored the possibility of serving fresh, local carp in the residence halls, which could also serve as a strategy to combat environmental concerns caused by invasive Asian carp in the Illinois River. She said, “He filleted them in front of us…. He showed us some versatility, and we just made some fried fish. We tried a few other applications, including fish tacos. It was delicious.”

Moving forward, Aubrey would like to focus more on educating students about the local products available in the dining halls. Although they formerly had signs and chalkboards, which highlighted the local products featured in each meal at the entrances to the dining halls, they
have moved away from doing this. Along with information on which products were from campus farms, these signs provided information on other farms that featured products in the dining halls as well. As President of the National Association of College and University Food Service, Aubrey participates in professional practice reviews with other institutions. While reviewing Michigan State University’s (MSU) local food purchasing practices, she discovered they have a very advanced marketing system, citing the website development and promotion of their Spartans Feed the World program, as well as their educational greenhouses. Aubrey argued that although the University of Illinois purchases more local products, MSU has gained a great deal of attention due to the publicity of its local food and sustainability programs.

According to Aubrey, Dining Services is also exploring the possibility of freight farming, which involves a growing system built completely within a freight or shipping container. These are designed for high yield, consistent harvests, and may also include climate technology and innovative growing equipment. Representatives from Central Illinois Produce approached her after they invested in a freight, which will be operated by one of their staff members who is a hydroponics expert and formerly worked with Tiny Greens. While it is likely that Central Illinois Produce will be able to provide Dining Services with a substantial amount of greens from this operation, Aubrey believes this could also serve as an educational resource for students.

**Local Foods Workshop: Observations and Panelist Perspectives**

In November 2015, University of Illinois Dining Services hosted a Local Foods for Institutional Buyers Workshop with the goal of bringing together different actors from across the local food purchasing process, including producers, vendors, distributors, dining staff, purchasers, Extension educators, students, researchers and various community members. Approximately 60 participants were in attendance. Representatives from Eastern Illinois
University, Northern Illinois University, Illinois State University, Heddington Oaks Nursing Home, The Land Connection, Unit 4 School District, Champaign-Urbana Public Health Department, the Institute for Sustainability, Energy and Environment, U.S. Foods, FarmLogix, and Testa Produce were among those present. Producers from Grani’s Acres, B.E. Farms, Violet Acres, Living Water Farms, Heartland Meats, Autumn Berry Inspired, and the Wisconsin Apple Growers Association participated as well.

Upon arrival, participants had the opportunity to network with each other while enjoying a breakfast that featured products from local farms. This included breakfast sandwiches with Severson Farm Biscuits, cheese from Marcoot and Ludwig Creamery, Autumn Berry jam, kale from the Sustainable Student Farm and coffee from the Columbia Street Roastery. Dawn Aubrey welcomed everyone to the workshop and began by explaining the ways in which menu trends within the residence hall cafeterias have been evolving. According to Aubrey, they have featured many different local items by testing out new methods for offering these foods, such as pickling a variety of products, offering candies like goat milk caramels, and creating healthy comfort foods. With over 9,000 students on meal plans and six “all you care to eat” operations, according to Aubrey, there is room for expansion in their local food purchasing initiatives.

The first panel included two students who work in residence hall cafeterias, and they shared their own personal reasons for supporting campus local food initiatives. The first student worked as a supervisor in Student Dining and Residential Programs (SDRP). Along with supporting the local economy, he believes that becoming familiar with local food is a way for students to develop pride in their community. When students experience the freshness and unique flavors of these products, the student explained, this influences their food purchasing and dietary decisions once they leave campus. His fellow student presenter worked in Lincoln
Avenue Residence Halls, and she shared her personal connection to local foods based on her background, growing up on a small farm in Brazil where almost everything her family ate was locally grown. Reflecting on the deeper connection that people develop to food when they are eating with the seasons, she believes that students develop a greater appreciation and respect for their environment when consuming local products. The crowd was visibly moved by the strong sentiment in her voice while recounting her family’s relationship to the meals they consumed in her hometown. After moving to Chicago, she had some trouble adjusting to Western food culture, but explained that she has found ways to adapt by becoming more familiar with local products in Illinois. Along with working in the residence halls, she also works part-time in the university admissions office, and has discovered through this position that parents like to hear about campus local food initiatives as well.

Sustainable Student Farm (SSF) Manager Matt Turino presented on the products their farm provides to University Dining Services. Along with selling 95 percent of their produce to Dining Services, the SSF also serves as an educational resource for students who have an interest in gaining hands-on farming experience and learning about small-scale local food systems. In 2009, Crop Sciences Professor Bruce Branham and former graduate student Zack Grant started the SSF after obtaining a grant from the Student Sustainability Committee. Along with funding from Dining Services, they have received continued support through the Student Sustainability Committee and the Department of Crop Sciences. The farm operates on about 2.5 acres, and approximately 10,000 square feet is occupied by year-round high tunnel production. In addition to selling their produce to Dining Services, they host a weekly market on the quad every Thursday from 11 am-5 pm from May to November.
According to Turino, the SSF produces nearly 50 different crops. While they provide nearly 25-30 different crops to Dining Services, they sell tomatoes in the largest quantities. Turino stated that they provide Dining Services with 1,500 to 2,000 lbs of tomatoes each year, which they process into sauce that can be used throughout the school year. Along with tomatoes, Turino said they sell large portions of greens, kale, Swiss chard, potatoes, sweet potatoes, onions, squash and cucumber. Although some students know this produce is provided by the SSF, Turnino said he would like to create signs to generate a greater awareness.

Turino believes the main goal of the SSF should be to provide educational experiences to students, including leadership skills they may not be able to develop on a for-profit farm due to production demands. He stated, “We are trying, even if it hurts our efficiency, to create spaces where students can gain empowering experiences using a wide range of different tools and skills that are involved in vegetable production.” Turino added that he would like to work through students to promote an increased recognition and understanding of the benefits of local and regional food systems. When asked about other visions for the SSF, Turino stated that he would like to see the farm become a resource for local producers who would like to try new methods they may not be able to test on their own land. This could include showcasing the SSF’s own techniques that have been successful, as well as allowing farmers to research other alternative practices that they believe could be fruitful to their own operation. Regarding additional support to local farmers, Turino stated, “I think the university could become much more involved in being something like a food hub or distributor, doing more research in the classic land-grant kind of way and being more of a resource for people.”

Dane Hunter, graduate student in Natural Resources and Environmental Sciences (NRES), presented his life cycle assessment of the food items purchased by the University of
Illinois Dining Services, which he conducted as part of his thesis research. His presentation featured charts and graphs revealing the relationship between meat consumption and greenhouse gas (GHG) emissions on campus. In his presentation, he referenced the 2010 iCAP, which outlines the goal of reducing agricultural emissions on campus by 50 percent by 2020, and exceeding the state local food procurement standards by making more than 30 percent of food purchases from local sources (within 100 miles) by 2015. Due to the level at which meat production, particularly beef, contributes to GHG emissions, as well as “the regional capacity for grain, legume, and oil crop production,” Hunter (2016) recommends “future research into specialty grain and bean crops and development of processing facilities to handle food quality specialty grains, legumes, and oils for regional consumption.”

Stating that beef is the biggest expense for Dining Services, he argued that switching to more plant-based proteins could reduce food procurement costs, saving money for students and the university, as well as GHG emissions on campus. His recommendations included “Meatless Mondays” and creating a vegetarian meal plan. He also argued that the university should adopt a “local” definition, such as the University of Michigan Ann Arbor, and insist on production, processing and distribution all occurring within a particular zone surrounding campus. According to Hunter, local food purchasing can significantly benefit regional economy, and his research revealed that over $22 million could recirculate if a completely regional food system were established. As he concluded, Hunter introduced Local Food and Small Farms Extension Educator Bill Davison, who described an initiative to create a grain mill on campus. Along with a few other university employees, he was applying for a grant to establish the mill, which could potentially develop a market for local grains that could be purchased by Dining Services.

Food Service Employee Perspectives & Food Safety Regulations
The next panel included Food Service employees from Illinois State University (ISU) and Northern Illinois University (NIU). The ISU representative recalled attending a University of Illinois Extension meeting at Starved Rock over 10 years ago to discuss bringing more local products into university dining halls. However, she also described the challenges they have faced in implementing these practices. ISU has competed with Chicago markets, which may seem more ideal for local growers selling to high-end restaurants in the city. She also believes there is a perception that Iowa and Wisconsin are ahead of Illinois in terms of bringing local foods into campus dining halls. Although she described ISU as being in the early stages of this initiative, she stated that it is clear students want more local foods in the dining halls, and they have about 8,500 students on a meal plan, which presents an opportunity for farmers who are interested in selling bulk products. ISU Dining is currently purchasing greens from a farmer in Arthur, IL, and the university hosts a local food dinner each year. They are also developing a full-scale bakery that should open within the next year. The NIU representative also described their university as being in the early stages of moving toward local food purchasing. Since DeKalb is a small farming town, he said the university is trying to integrate campus into the community and introduce students to the work of local residents. He stated that students are raising their expectations as they search for sustainability initiatives and local foods.

A trained chef who has been working with the University of Illinois for the past ten years described his experience with integrating more local foods into his menus. He stated, “When you eat foods that are meant to be eaten in that season, they taste better. Although he stated that Dining Services is expanding its sustainability and local food purchasing agenda, they also have a commitment to students to keep their prices as low as possible. He argued that this requires a multi-faceted approach. Some of his suggestions included making meat a side rather than a
center part of their dishes, supporting expansion of the growing season at the SSF, which has allowed them to provide Dining Services with produce 10-12 months per year, taking advantage of pilot plants and food labs that convert vegetables like tomatoes into pizza sauce or other products that can be preserved. Explaining the local food purchasing process, he stated that Dining Services generally identifies items they need, and distributors contract with growers to obtain these. He explained that they are unable to provide local growers with financial support for start-up businesses due to limitations in their ability to use money from students. However, there is potential for local producers to contract with distributors to be growers for the university.

The following presentation came from a University of Illinois Extension Educator who specializes in the Food Safety Modernization Act (FSMA), which outlines good manufacturing practices for farmers. He emphasized that the policy applies to anything eaten raw, and described some of the terms that farmers should watch out for while reviewing the document. For example, if you package your own food, your operation becomes a “facility” rather than a “farm.” Other specific terms included the difference between “packing” and “packaging” or “manufacturing” and “processing.” Since the law has recently been updated, he encouraged producers to review the document, which can be found on the Food and Drug Administration (FDA) website.

*Workshop Observations: Insights from Local Producers*

The next portion of the workshop included presentations from local farmers who clearly expressed a passion for the work that goes into creating their products. These producers explained the challenges of establishing their own operation, how they found a niche in the local market, and what is required to develop a relationship with institutional purchasers. The first presenter was the founder of Autumn Berry Inspired, and he explained how the farm uses autumn berries to produce a variety of flavored jams, puree, and chia fruit leather strips.
Although the autumn olive tree is considered an invasive species, in 2012, Autumn Berry Inspired was founded based on its philosophy that by taking advantage of these berries and creating unique products, they can decrease environmental concerns surrounding the spread of this tree. After selling at the farmers market and advertising their product across the community, local businesses and institutions began contacting the farm to purchase their products. Along with providing their products to University of Illinois Dining Services, they also sell to local restaurants, such as Big Grove Tavern, and well-known food trucks, such as Cracked and Pandamonium Doughnuts. A local brewery-pub also uses their berries to create flavored beer.

Specializing in Piedmontese cattle, the representative from Heartland Meats declared they are the only American Humane Certified beef producers in the U.S. Located in Mendota, Illinois, this family farm was established by a current owner’s great grandfather in 1903. Operating since 1987, Heartland Meats has been federally labeled as “All Natural” and “Raised Without the Use of Added Hormones.” They sell their fresh frozen specialty beef directly to consumers after it has gone through their own federally inspected processing plant, which only processes the beef they raise. The owners explained that their specialty product contains only half the amount of saturated fat found in traditional beef. After being approached by U.S. Foods to become a vendor for state institutions, they began selling to the University of Illinois Dining Services. Their product is also available at a food co-op and restaurant in Chicago, a café and bistro in Wheaton, and a grocery store in Peru, Illinois.

Beginning as a small grocery store and gas station, Herriot’s Coffee and Columbia Street Roastery in Champaign, IL is part of a family business that has been growing since the 1950s. Roasting nineteen different varietals from sixteen countries, they provide their coffees to restaurants and coffeehouses across a 100-mile radius of Champaign-Urbana through a delivery
route system. The owner explained that they have a direct relationship with all growers, emphasizing that they are very focused on benefitting the farmers. For example, he said, they pre-buy the coffee and give the growers zero-interest loans. They also directly import teas from China, India, and Sri Lanka. Their relationship with University of Illinois Dining Services began when they responded to a request for proposal (RFP) to obtain their equipment and products.

Located in Strawn, Illinois, Living Water Farms is a family-run operation focused primarily on the production of small-scale greens. After noticing that no farmers in their area were growing these crops, they began producing a large variety and unique blends of greens, including arugula, cress, micro bulls blood, escarole, and purple mizuna. The farm representative argued that their products have a longer shelf life than imported greens. After establishing a connection with University of Illinois Dining Services, they found that extra steps must be taken in order to sell to institutions, such as ensuring that everyone who works on the farm is following food safety guidelines. Living Water Farms also founded a group called Stewards of the Land with the goal of helping family farms become more sustainable and profitable. Members of the organization, known as stewards, are farmers within a fifty-mile radius of Fairbury, Illinois, which is a small community amongst large commercial corn and soybean fields. While promoting specialty crops, they are working to help farmers increase their yields per acre and increase revenue with the hope that these small farms will remain in their families for generations to come.

Some of the farmers also had their products featured during the lunch break. Greens and seasonal vegetables were available from the SSF. The vegetables were used in a quiche that also contained local eggs and cheese from Marcoot and Ludwig farms. Heartland beef sliders and Rantoul Foods pork sliders were smoked on local wood for the main course. As a snack, the chef
prepared deviled local eggs. Severson Farm bread was available with Autumn Berry cream cheese, as well as Severson Farm chocolate chip cookies with local black walnuts. During the meal breaks, community members, students and researchers were able to network with producers and those actively working in local food system development. At my table, a postdoctoral research associate in Recreation, Sport and Tourism explained that his previous research on the benefits of community gardens in a low-income, inner city region of Chicago led him to develop a greater interest in local foods, and he was eager to learn from the different presenters.

After the workshop, six participants contacted University of Illinois Dining Services about selling their products. Aubrey believes they will be providing products from at least two of these farmers to students in the near future. Looking toward future workshops, Aubrey intends to have more information available for farmers on how to navigate the local food purchasing process. As increased attention is focused on specialty crops across the state, she believes these resources are necessary. She stated, “Illinois is so much more diverse. In years gone by, we have gotten away from it, which is why we have so much corn and soybeans around us. But I’m seeing, as time goes on, more biodiversity introduced around us.”

5.3 Biotech Industry Funding and Commercial Partnerships in Academia

Potential Risks of Industry Funding

In the 1980s, industry investment in scientific research grew significantly, likely resulting from a greater awareness of the commercial benefits for businesses and decreases in public funding for academic institutions (Caldart, 1983). In the agricultural sector, this period of increased emphasis on biotechnology research corresponds with small farmers experiencing a sense of isolation from the university, as noted in the previous chapter. Caldart (1983) explores the causes of industrial interest in academic research focused on agricultural technologies. He
states, “This awareness stems, in part, from a 1980 Supreme Court decision holding that the results of research in biotechnology are patentable under U.S. patent laws (Caldhart, 1983, 24).”

Explaining the formation of these relationships between research institutions and agribusinesses, Caldhart (1983) states, “Because most of the pioneering work in biotechnology was performed in university research laboratories, private industry has begun to extend partnership offers to academia in an understandable effort to invest in a potentially lucrative field (Caldart, 1983, 24).”

Considering the simultaneous decreases in public funding, this opportunity to collaborate with commercial partners was very attractive to academic institutions working in this field of research (Caldart, 1983). According to Caldart (1983), the disappearance of government grants left academic institutions with only two options: partner with private industry or decrease research and education initiatives (Caldart, 1983).

Although Caldart (1983) explains that private funding in academia has been occurring since the 1600s, he argues there has been a shift in the motives of these donors. He states,

“What many contemporary observers find disturbing about the current trend in private funding from corporate donors is that it is not motivated by broad philanthropic concerns. Instead, it is motivated by a narrow pecuniary interest: the desire to utilize research results for private gain. In a very real sense, the universities are now experiencing a shift from corporate contribution to corporate investment in academia” (Caldart, 1983, 25).

Analyzing the shift in focus toward financial gain for these donors and the large sums of money being poured into these institutions, Caldart (1983) argues, “This trend suggests that private industry investment, which in the past represented only a small fraction of the total university budget, could play an increasingly important role in shaping the direction of academic research” (Caldart, 1983, 25).

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1 Diamond v. Chakrabarty, 447 U.S. 303 [1980]. In a 5 to 4 decision, the U.S. Supreme Court held that “a live human-made micro-organism is patentable subject matter under 35 U.S.C. §101” (447 U.S. at 305).
Although many universities now rely on private funding, and these relationships can be beneficial to both institutions and corporations, a primary focus on profit can also pose risks. In reference to the assumption that businesses will choose to “surrender profit,” Caldart (1983) states, “If, as recent examples indicate, industry chooses not to do so, then, I would argue, both academic freedom and public interest stand in danger” (Caldart, 1983, 26). According to Caldart (1983), this could also lead to the university having decreased control over its own operation and educational activities, which may also create barriers to intellectual freedom. While public research grants are generally designed to address public needs, Caldart (1983) argues that corporate funding reflects the goals of the industry’s investors, causing public interest to become a secondary goal.

Caldart (1983) addresses four dominant impacts that appear to be occurring as a result of the connection between industry and universities: “the impact on the institutional autonomy of the university; the effect on the nature of university research; the likely restrictions on access to research results; and, finally, the long-term impact on university policies” (Caldart, 1983, 27). Exploring implications of industry/university joint ventures, Caldart (1983) provides the example of Monsanto Corporation funding genetic research at Washington University, which was directed by Monsanto employees as well as university representatives. He states, “Moving across this spectrum, we find that the funder is more and more integrated into the university structure, raising many troublesome questions about the funder’s role in the formation and execution of certain university functions” (Caldart, 1983, 28). Furthermore, Caldart (1983) argues that industry funding can compromise the academic integrity of universities by limiting their structural freedom and ability to design their own educational and research goals.
As universities collect commercial funding, Caldart (1983) argues that intellectual discourse will continue to become more challenging and constrained. He states, “This will be particularly significant in the area of biotechnology, where there is little distinction between ‘research’ and the ‘development’ of commercial product, and where the fruits of the research-the biological mechanisms themselves- are patentable items” (Caldart, 1983, 30). According to Caldart (1983), this has led researchers to refrain from communicating with their peers in order to protect the profits of their investors. He states, “The proper functions of university research are inconsistent with the profit motives of the private investor and a mere ‘code of etiquette’ for the university will not suffice. No set of procedural safeguards could eradicate the basic substantive inconsistency” (Caldart, 1983, 31). Instead, Caldart (1983) argues, universities should adopt official mechanisms for reviewing all industry research proposals to be sure all have both academic and social value.

**Biotech Companies Recruiting Academics**

According to Szelényi and Goldberg (2011), “Funding for academic work obtained from business and industry maintains a significant role among the manifestations of academic capitalism. Indeed, this type of funding establishes an immediate connection between commercial, profit-driven goals and faculty work” (Szelényi and Goldberg, 2011, 775-776). As researchers (Szelényi and Goldberg, 2011) question whether this has caused universities to shift away from their original focus on the public good, journalists have been revealing the power of agribusiness companies to dictate the goals of researchers. In a recent *New York Times* (2016) publication focused on the funding that companies like Monsanto have been pouring into research institutions, the author stated, “the debate over bioengineered foods has escalated into a billion dollar food industry war” (Lipton, 2015). As a response to commercial agriculture
companies enlisting academics to conduct research on their behalf, Lipton (2015) explains that large organic firms, such as Stonyfield Farm, have “aggressively recruited academic researchers,” which has led to much public confusion as arguments are being published from both sides. Lipton (2015) states, “The efforts have helped produce important payoffs, including the approval by federal regulators of new genetically modified seeds after academic experts intervened with the United States Department of Agriculture on the industry’s behalf, the e-mails show.”

According to Lipton (2015), “the biotech industry has published dozens of articles, under the names of prominent academics, that in some cases were drafted by industry consultants.” Companies like Monsanto have also provided a great deal of grant funding to research scientists across the country geared toward “biotechnology outreach” and the defense of genetically modified foods (Lipton, 2015). Kevin Folta, chairman of the horticultural sciences department at the University of Florida, was provided with this funding from Monsanto; however, the university now intends to donate these funds to a food pantry (Lipton, 2015).

Information about the linkages between academics and Monsanto, in cooperation with the Biotechnology Industry Organization and the Grocery Manufacturers Association, were made public through “thousands of pages of emails” that were obtained by the nonprofit group U.S. Right to Know (Lipton, 2015). Lipton (2015) states, “There is no evidence that academic work was compromised, but the emails show how academics have shifted from researchers to actors in lobbying and corporate public relations campaigns.” The Council for Biotechnology Information, which is run by BASF, Bayer, Dow Chemical, Dupont and Monsanto, recruited Dr. Folta and other researchers to become part of their new website, GMO Answers, which was designed to dissipate concern over GMO products by providing the public with answers from academics.
However, the emails revealed that the group also provided Folta with responses, which he posted almost word for word. (Lipton, 2015).

Monsanto also worked extensively on “biotechnology outreach and education activities” with University of Illinois professor emeritus Bruce Chassy. According to Lipton (2015), an individual email between Chassy and a Monsanto executive address both the details of his grant funds and a continuous effort to convince the Environmental Protection Agency (EPA) to discontinue its proposal to increase regulation of pesticides for insect-resistant seeds. Lipton (2015) stated, “Chassy said he had initiated the fight against the E.P.A. plan before Monsanto pressed him. But he conceded that the money he had received from the company had helped to elevate his voice through travel, a website he created and other means.” After Chassy and an industry lobbyist met with the EPA, the agency abandoned their proposal (Lipton, 2015).

In March 2016, Chicago Public Media’s WBEZ investigation revealed that Chassy was provided with more than $57,000 from Monsanto in less than two years, and he did not disclose this funding on state or university forms designed to prevent conflicts of interest. According to Monica Eng (2016), “Documents further show that Chassy and the university directed Monsanto to deposit the payments through the University of Illinois Foundation, a body whose records are shielded from public scrutiny.” These payments can be transferred to individuals through “university payments,” which they are not required to disclose. Eng (2016) also notes that in 2015, Chassy co-wrote a three-part series for the Huffington Post that described initiatives to label GMO food products in the U.S. as “a disaster in waiting.” In these articles, he listed himself as “Professor Emeritus of Food Science and Nutrition, University of Illinois at Urbana-Champaign,” but researchers who study academic conflict of interest have expressed concern over the fact that he did not mention his financial ties to Monsanto when publishing these
arguments, especially considering that members of Congress are influenced by expert advice when voting on GMO labeling bills (Eng, 2016).

Although other well respected media outlets, such as the *New York Times* and *Boston Globe*, reported on Monsanto and other biotechnology companies funding academic research, Eng (2016) describes the primary focus of the WBEZ investigation, asking “how could a land grant university professor take money from one of the world’s largest GMO makers to do ‘outreach’ on GMOs without telling the public, readers of his articles, or graduate students taking his GMO safety course?” Since Chassy directed Monsanto to send the payments to the University of Illinois Foundation, the funding was not made public at the time. However, according to Eng (2016), “Financial records obtained through the Freedom of Information Act (FOIA) indicate that Monsanto sent more than $140,000 in ‘biotech research and outreach’ payments through the University of Illinois Foundation between 2006 and June 2012, the month Chassy retired.” University records revealed that between 2005 and 2015, at least $5.1 million in Monsanto funding was routed through the foundation for university programs and employees (Eng, 2016).

According to Eng (2016), “Chassy’s emails reveal more than payments routed through foundations. They suggest an accommodating relationship with industry executives.” Eng (2016) outlines an email from 2012 in which Chassy asks a Monsanto executive about his upcoming “mission to China,” inquiring about where he will speak and to whom, as well as the length, topic and title of the speech. In another email, Chassy asked Monsanto for help with content for his YouTube videos about GMOs (Eng, 2016). The Monsanto executive also proposed funding Chassy’s Academics Review website. In this exchange, the executive suggested paying academics to respond to anti-GMO studies “without revealing Monsanto’s involvement” (Eng,
The executive stated, “From my perspective the problem is one of expert engagement and that could be solved by paying experts to provide responses… The key will be keeping Monsanto in the background so as not to harm the credibility of the information” (Eng, 2016).

As Cadart (1983) predicted, the growth of the biotechnology industry has strengthened the influence of commercial interests in academia, allowing the goals of industry representatives to dictate research agendas at educational institutions across the country. Although industry-funded research may include social benefits, universities captured by industry and profit-driven research are at risk of losing touch with the land grant mission and its emphasis on service to the community and public good. Although Cadart (1983) suggested implementing formal mechanisms to prevent this from occurring, it appears the measures currently in place are allowing industry-directed research to become commonplace at many universities.

5.4 Faculty Perspectives on Sustainable Agriculture Research

Building Connections Between Campus & Community

Michelle Wander, faculty director of the Agroecology and Sustainable Agriculture Program (ASAP), has devoted much of her career to working with farmers, researching and developing sustainable agriculture practices. Although her program has a fairly small budget, she has worked with several graduate students who have received ASAP scholarships over the years. For example, one of the recent scholars created the life cycle assessment for Dining Services to evaluate the environmental impacts of their food purchases, which was presented at the Local Foods Workshop. His findings supported the argument that Dining Services could lessen its carbon footprint by shifting from GHG intensive food products to more local products. Along with serving as the faculty director of this program and empowering graduate students to conduct meaningful research, Wander serves on the advisory board of the Student Sustainability
Committee, and she encourages fellow members to fund initiatives that will have the most significant impacts across campus. She stated, “I’m always fighting for a definition of sustainability that doesn’t get reduced to saving money by buying energy efficient light bulbs.” Although these have short-term impacts, Wander explained, she also guides students toward more ambitious initiatives.

Challenges to Local Food Research

Despite some of these initiatives, according to Wander, the university still views the promotion of local and organic food as biased research. For example, when applying for funding from the Beckman Center to bring a colleague to campus to work with Dining Services on educating students about the value of eating locally produced food, specifically focusing on locally produced vegetable proteins to reduce greenhouse gas emissions and support the local economy, committee members said they could not provide her with the Beckman award because this was advocacy work. She stated, “The benefits of local are not accepted on this campus... And they have not really been proven or researched in the academic sphere.” In order to demonstrate the value of local food purchasing, she argued that researchers must better develop these questions and articulate the tradeoffs of different economic and social structures that dictate our diets.

Although there is a great deal of important agricultural research being conducted at the University of Illinois, Wander argues there is less visibility and support for this work here as compared to other LGUs in the Midwest. She stated, “The amount of infrastructure and capitalization for ag research at the U of I is, actually… and you can quote me on this… it’s pathetic.” Comparing our field infrastructure to Iowa State, she added, “they have so much more going on, and so much more opportunity in that state for meaningful agricultural research
beyond commodity ag.” According to Wander, the majority of gifts for research in crop sciences have been focused on biotechnology initiatives. Although these can include some important contributions for sustainability as well, she stated, “I think the university has shrunk its aspirations to where the money is.”

**Participatory Research with Farmers**

Wander has used participatory research for a great deal of her work, and she explained some of the benefits and challenges involved with this method. For example, she recently concluded a study that involved 70 different farms, including both organic and conventional. Based on the farmer’s background and familiarity with the work researchers are doing, responses tend to differ. Although the organic research program was funding this study, she did not want the conventional farmers to feel uncomfortable participating in the study or to represent them negatively. She explained that some farmers might be wary of participating in comparative studies due to past representations that researchers have created of them. Wander stated, “You have to be really respectful, and the truth is… all these farmers have different values and different normative framings for what they do. And they’re all really interesting people, and they define success differently.” Explaining the potential differences between farmer interests and researcher goals, she added, “You learn a lot when you work with farmers about what their priorities are, and it can be really motivating to change what you do because you realize they’re not asking that question.”

According to Wander, some farmers are very angry with the university because they believe the money is being misdirected, and they believe it is not fulfilling its responsibility to serve the public good as a LGU. After the apparent shift toward commodity-focused agriculture over several decades, Wander believes there is no possibility for shifting to an organic focus. For
those who are determined to work in this field, she argues, they must obtain funding on their own. She encourages researchers interested in sustainable agriculture to pursue this work despite the stance of the university. However, she believes that some are deterred from finding their own funding because they believe this is the university’s responsibility. She stated, “there are still some people who just would not support sustainable ag programming at the U of I, because they believe the university should be supporting it itself.”

Faculty Support for Extension Education

Although many faculty in the College of Agricultural, Consumer and Environmental Sciences (ACES) attempt to conduct research that is relevant to their stakeholders, Wander believes that many faculty are unaware of Extension, as it has been shrinking over the years. She stated, “I would criticize U of I’s management of Extension openly, where they have done a terrible job trying to match-make Extension and faculty. They make no effort to do that.” Rather than collaborating with faculty, she believes the university has managed Extension as a separate entity. However, many faculty members who focus on applied research have been directly contacting community members who may be impacted by their work.

Although she does not have an Extension appointment, Wander was one of the first people to start eOrganic, a national Extension community of practice. She explained that when Extension personnel became concerned about their funding, they developed online resources, making their products more easily accessible and reusable over time. This included a grant competition in which individuals applied to create online content for their areas of interest, which led to the creation of eXtension communities of practice in several different fields. She stated that as a land grant employee, she believes it is essential for her to continue working on the eOrganic community of practice, even though it may not be included in her job description.
Although these programs are beneficial to the community, she believes other faculty may be hesitant to take on these roles. However, it could benefit them professionally when they are being evaluated on outreach initiatives. Based on her conversations with organic farmers, there is a tremendous need for more of these resources, and the online format is making this information more accessible.

Based on Wander’s observations and those of Illinois Extension educators interviewed throughout this study, many nonprofit organizations and private businesses are being created in response to the needs that the university is not fulfilling. In fact, Wander has known some educators who chose to leave Extension and start their own private consulting businesses due to the restrictions and demands placed upon them by the university. She stated, “We’ve reduced our portfolio and coverage of topics… As we get thinner and thinner, we get less and less done.” In her early years as a faculty member at the University of Illinois, Wander remembers being in a meeting in which the facilitators had a map of all of the land-grant institutions. As they pointed to Illinois, Purdue, Iowa, and UW-Madison, she explained, “They said, in ten years, there will only be one left. And we knew we just didn’t have the public interest, or demand, or money.”

Along with her work at the university, Wander is also the co-owner of Blue Moon Farm, located north of Champaign-Urbana. They are well known for their salad greens and grow 40 other vegetables, herbs and flowers. Their organic farm has been operating in its present location since 1997, and 70 percent of their crop goes to the Urbana Farmers’ Market. Over the years, they have increased production through season extension, better crop care, and increased mechanization. Their products are also available at local stores and restaurants.

**Supporting Resources for Local Farmers**
While completing graduate school at the University of Nebraska, Sam Wortman initially planned to work in Extension, which he described as a big part of Nebraskan culture. From 2012-2016, he taught Urban Food Production courses in the Department of Crop Sciences at the University of Illinois at Urbana-Champaign. During this time, he maintained strong connections with Illinois Extension educators. He stated, “Even though the numbers are shrinking of Local Food Systems and Small Farms Educators, I try to stay involved with them as much as possible and get my information to them as much as possible.” As well as providing them with his research, he also regularly speaks at conferences, symposiums and meetings hosted by Extension, which he describes as the best way to get his information to Illinois farmers. Since farmers do not regularly visit the campus for information anymore, he believes it is important for faculty to support Extension programs in their counties.

Wortman also encourages his students to conduct applied, participatory research whenever appropriate and make presentations throughout the community. One of his PhD students is studying how atmospheric pollutants and different microclimatic variable like the urban heat island effect impact vegetable crop yields, and he has research sites across the Chicago metro region. After beginning his work, the student organized a weekly research symposium at the Garfield Park Conservatory, where he is conducting a study. According to Wortman, about 25 people showed up and participated in dialogue about the work. He has also presented at some of his other sites, and a mixture of people have attended, including Master Gardeners and individuals who are simply interested in learning more about urban farming. Wortman believes these informal meetings, organized outside of the campus and Extension, are beneficial in establishing a connection between the community and university.

*On-Farm Research: Logistics and Benefits*
On several occasions, Wortman has worked with farmers to coordinate traditional grower field days. A specific farmer, who has been working with another graduate student, has allowed Wortman to carry out different on-farm trials on his land. He also hosts annual field days focused on soil health, conservation, cover crops and local foods. According to Wortman, approximately 70 people attended the field day last year, providing the opportunity for him and his graduate student to present their research to farmers and community members who were interested in learning more about the project. The graduate student gave tours of their plots, pointing out different cover crops and showing a poster of the results. They have also made this research available to the public by regularly presenting at organic farming conferences.

When asked about setting up on-farm research contracts with farmers, Wortman explained that he generally writes payment for the farmers into grants when applying for funding. This payment covers the cost of the land, any potential yield loss due to their experimental treatments, and the time they spend working with the researchers. He stated, “We do a lot of on-farm research, so that’s kind of a big expense for us. But that’s also another form of outreach by having our research off campus.”

According to Wortman, it is common for Extension Educators in Nebraska to conduct informal on-farm research without a budget. For example, when farmers are interested in trying a new cover crop, they may purchase the seed on their own and work with an Extension Educator to set up a trial in which data can be collected and potentially used in replications. He stated, “The educator would help them collect data and use that data to give talks at other Extension events, but they were not actually publishing the results like a campus researcher would.” Although he has witnessed some Local Food Systems and Small Farms Educators in Illinois receiving grants for certain projects, he believes that many are conducted without budgets. He
stated, “I think it’s mostly a lot of grower interest that helps facilitate exchange of seed, ideas, and kind of a low-cost, informal on-farm research network.”

While informal on-farm research can be very valuable, Wortman explained that the nature of academic studies forces the researchers to maintain a great deal of control over these plots. Although Extension Educators can provide seed to farmers and visit the farm on a few occasions to assist in data collection, academic researchers must closely track the work being done on the land in order for their study to be rigorous enough for peer-review and publishing. Since many farmers are primarily concerned with producing a crop, they are unlikely to focus as much on the studies being conducted on their farms. Wortman explained that many of his on-farm studies have failed due to misunderstandings with the farmer, such as confusion about whether a plot should be tilled. He stated, “To have good on-farm research, you need to have really good communication with the farmer… I’ve worked with farmers where it’s really hard to get ahold of them, and when that communication breaks down, the trial does not go well.”

Although challenges may exist, Wortman firmly believes on-farm research is one of the best approaches faculty members can take, particularly as resources for Extension dwindle. He stated, “We’re still expected to maintain the same level of research productivity. Just by nature of doing that work out in the community… on farms, more visible to people… gets that farmer and other farmers talking about the research and results.” By combining research and outreach, faculty can meet multiple goals with a single project, which Wortman has worked toward achieving on a regular basis. His graduate student who has been conducting cover crop research on a local farm is now using the farmer as a professional reference as she applies for jobs. He stated, “Just learning about his farming practices and what goes through his mind. She will be
collecting data, and he will stop by to chat… It’s really valuable interaction you don’t get if you’re just doing research on South campus.”

Along with the graduate student researching the benefits of different cover crop mixtures, Wortman’s other on-farm research has involved weed-blasting technology, which has been tested on multiple farms. Discussing the community benefits of on-site research, Wortman explained that a Chicago-based site, where his PhD student was conducting a study, is keeping the garden they established for this project. The adult life services center will be maintaining the garden as an activity for the residents and using the produce for their farmers’ market stand. According to Wortman, even as the study was occurring, some residents would harvest produce from the garden and interact with the researchers. He added, “Plus, some of the Master Gardeners in the Chicago region, for the first couple years of the project, were helping with data collection, so it was kind of a citizen science effort.”

*The Future of Outreach and Education*

As educational technology advances, Wortman believes faculty and Extension educators will be required to make more materials available online. Although he has been happy to speak at workshops and special Extension programs, the demands placed upon faculty create difficulties when trying to fit such events into their schedules, particularly when attendance may be low. Rather than planning many different in-person events, he suggested moving more programs online through resources such as eXtension. He stated, “More and more farmers are coming online every day, so those types of online tools are going to be really important for getting on-campus information out to the general public.” He mentioned that the Illinois Local Food Systems and Small Farms Educators have already created some successful online programs, such as their winter webinar series. He added, “We have to get creative with all kinds
of different tools. We need to be looking at how Extension can create some good apps that farmers can use.”

Although Wortman believes in-person events are valuable for networking and creating opportunities for meaningful dialogue with farmers, he argued there should be fewer of these, attracting larger numbers, while creating more online education platforms. Webinars frequently offer opportunities for question and answer sessions, but these are often less valuable than having in-person conversations with the farmers. He stated, “We need to have a consolidation of events, trying to use online tools more effectively, or putting resources into high impact publications that can be widely distributed to growers across the state.” As funding for Illinois Extension programs has continued to decrease, it may become increasingly necessary to find other avenues for disseminating this information.

5.5 University of Illinois Extension: Local Food Systems and Small Farms

According to the University of Illinois Extension website, educational programming is offered in five broad areas: energy and environmental stewardship; food safety and security; economic development and workforce preparedness; family, health, financial security and wellness; and youth development. Extension educators operate out of 27 regional unit offices, serving all of the state’s 102 counties. The Local Food Systems and Small Farms (LFSSF) team is currently composed of 12 educators serving multiple counties across Illinois. Their specializations range from organic fruit, vegetable and poultry production; soil and water conservation; high tunnels; livestock and horse maintenance; disease and insect management; backyard grains; forestry; urban and rural fisheries; beekeeping; cover crop utilization; business and niche marketing. The following LFSSF educators were chosen for interviews due to their
affiliation with farm to school programs and the local food purchasing initiatives at the
University of Illinois. Both were involved in the planning of the Local Foods Workshop.

**Livingston, McLean, and Woodford County Local Food Systems & Small Farms Educator**

After working as an organic vegetable farmer in Woodford County, Bill Davison began
his career as a LFSSF Extension Educator over two years ago. Along with developing seed
libraries, which are community resources for sharing seeds at the public libraries in Normal and
Eureka, he has also developed a food forest in partnership with the Town of Normal. The forest
serves as a community orchard where residents are able to harvest any fruits or vegetables,
including berries, herbs, asparagus, nuts and fruit trees. He is also working on a participatory
corn-breeding project with local farmers and a faculty member in ACES. This involves growing
open-pollinated corn with the hopes of allowing the crop to become more productive, reliable,
and resilient. Davison is currently in the process of attempting to secure grants for projects
related to soil health, grains, and nutrition as well.

His biggest project, the Grand Prairie Grain Guild, was established in 2015 as part of an
initiative to rebuild the regional grain economy with staple crops, including corn, beans, wheat
and other small grains, such as sunflower or other oil seeds. He stated, “The idea is that we use
the ability, the talent at the University of Illinois, to help breed and create varieties that are well
adapted to Illinois. So we find varieties that work well for the farmers, chefs, millers, and
bakers.” According to Davison, the Guild conducted variety trials that were very successful, and
they are now expanding. With 210 members, the Guild is identifying various markets, restaurants
and grocery stores interested in purchasing local food-grade grains and beans. The group is
working to build a small grain economy within central Illinois, which may allow farmers to
diversify and produce a couple acres of heirloom or organic wheat, oats, rye, corn or soybeans
along with their commercial production. Although their primary focus is wheat, which can be used to produce local bread, Davison is confident the Guild will continue to grow and work with other crops.

*Perspectives on Local Foods Workshop and Farmer Resources*

Although Davison was impressed by the presentations given by students at the Workshop, particularly the one from Brazil, he was slightly overwhelmed by the complexity of the local food procurement process. He was relieved to learn that Dining Services has flexibility, and that some farmers have signed on as vendors, but he wished they could have spent more time discussing economics, specifically focusing on the pressure on local farmers to sell at lower prices. He said, “The farmers are already making sixteen cents on the food dollar. Most of the money is made in the middle, so we’re basically forcing farmers into the industrial model where they take all the risk.” Explaining that farmers have lost money in recent years, he stated, “We have to find a way for farmers to make a living wage, or else we’re just going to keep losing farmers.” Davison mentioned the Midwest Organic Farmers Cooperative, which is owned by over a hundred farmers, as an organization that could be helpful in assisting farmers in getting fair prices for their products and earning some of the money lost in the middle of the process.

When asked about further support for farmers attempting to sell their products to institutions, Davison stated, “It should be someone’s full-time job to help potential farmer vendors navigate that system…. Like if somebody comes to the university and has a product they want, there should be a mechanism, a person to take them through the process.” Davison also suggested that the University of Illinois create a center for regional food systems, similar to the centers that have been established by other Midwest land-grant institutions. According to Davison, this would allow those involved in this process to “bring the full capacity of the
university to bear on fixing the food system and developing a local food system,” including a broad spectrum of faculty and scholars from business, agriculture, social sciences, horticulture, education, and other entrepreneurs. He stated, “There just needs to be a lot more support, because now we just have these fragmented non-profit groups working on a part of the system, but nobody is looking at the whole system. That’s what we need.”

Exposing the Community to Local Foods

According to Davison, over a hundred residents have gotten involved in his food forest project over the past year, and he is looking forward to watching it expand. He stated, “It’s just going to get better in the next ten years because it’s going to start producing more fruits and nuts. The prairie is going to develop, the trees will grow, and it will have a real forest feel.” Although community gardens have been used as a tool for development in low-income areas (Rich, 2012), this food forest was not designed for that purpose. However, Davison explained that some families have expressed an interest in recreating this project in West Bloomington, a section of the city with less developed neighborhoods. When asked about establishing food forests there, he stated, “I think there’s some potential anywhere there’s a community garden, or a park with some mowed grass. It doesn’t have to be elaborate… just plant a little group of trees or berries.” Davison and others involved in the food forest have presented at a nearby school, and they are planning to bring classes to the forest for field trips, which may involve pruning, picking berries, or making jams. Reflecting on the reactions and enthusiasm that he has witnessed from families who have visited, he stated, “There was a family out there with four little kids, and there were some ripe raspberries, and they just ran over and started eating them.” Davison has also been involved in discussions with community members about starting Corn Clubs, which would allow
young people to learn about growing specialty corns. According to Davison, this would likely begin with 4H Clubs before expanding more broadly.

*Future University Involvement*

Davison believes a center for regional food systems would be the most ideal method for the university to become invested in creating a fully functional local food system. After discussing this idea with the head of University of Illinois Extension, Davison was encouraged by the level of interest expressed and the possibility of securing funding for this initiative. Although this would require a faculty member to write a proposal for campus funding, he believes the initial support would be enough to start a small center. Moving forward, Davison suggested the center could grow each year through USDA support and other grant funding.

*Logan, Menard, and Sangamon County Local Food Systems & Small Farms Educator*

Formerly serving as the LFSSF Educator for Sangamon, Menard and Logan Counties, Deborah Cavanaugh-Grant has over 25 years of experience working in sustainable agriculture. Although she retired from Extension in December 2015, Cavanaugh-Grant is continuing her work as a private consultant for local farmers in central Illinois. She has provided guidance to several organizations, including the Central Illinois Sustainable Farming Network; Grow Springfield; the Illinois Farmers Market Association; the Illinois Local Food, Farms and Jobs Council; the Illinois Organic Growers Association; Slow Food Springfield; the Spence Farm Foundation; and the USDA Advisory Committee on Beginning Farmers and Ranchers. From 2006 to 2011, she served as the University of Illinois Extension Specialist for Small Farms and Sustainable Agriculture, leading their educational programming. Cavanaugh-Grant was also the co-founder of the Central Illinois Farm Beginnings Program and served as the Illinois Coordinator of the North Central Region Sustainable Agriculture Research and Education
(SARE) program. From 1994 to 2006, she was a co-coordinator of the University of Illinois Agroecology and Sustainable Agriculture Program, and she served as the Resource Planner and Coordinator of the Sustainable Agriculture Grant Program for the Illinois Department of Energy and Natural Resources from 1987-1992.

**The Creation of Local Food Systems and Small Farms Educators**

According to Cavanaugh-Grant, when the LFSSF team was initially created, 16 educators were placed across the state, and they worked together identifying the goals and mission of their organization. Although she had extensive experience in this area and was already working with individuals and non-profits in the field, LFSSF educators in other parts of the state, where local food is less discussed, faced more difficulties. She stated, “You go to Southern Illinois and those places… it’s a totally different universe. People don’t even know what you’re talking about or why you’re talking about it.” Over time, she believes it is helpful for Extension educators to meet with other organizations working in this area to get established and build connections within the community. She stated, “You see what the needs are, and then you figure out, as an Extension person, the mission of our organization and how you can interface with those people in terms of partnerships that would be of benefit to both organizations.”

**Extension Educator Challenges**

Although the different LFSSF educators have unique fields of specialization, she believes their organization is often overlooked by the public due to the various non-profits in this field and the myriad sources of information available. Cavanaugh-Grant explained that she has attended many meetings in which participants had never heard of Extension. As marketing, technology, and outreach evolves, she has adjusted to catering to different audiences. While some of her clientele do not use computers, others want information via many digital platforms.
This has caused some complications for Extension educators as they determine the best way to communicate with their clients, and it will likely continue to change over the years.

As non-profits focused on small farms and sustainable agriculture continue to grow, Extension educators in this field have struggled to compete for federal funding. Although the government previously allocated substantial portions of money to LGUs for this work, non-profits have started competing for these funds. Combined with the state budget crisis and impacts on county revenue, Cavanaugh-Grant expressed concern about the future of LFSSF Extension programming. She stated, “We have very little investment from the Urbana campus, very marginal compared to all of our surrounding states.” According to Cavanaugh-Grant, many LFSSF educators contact colleagues in neighboring states because they have not been receiving information they need from central campus to provide to their clients. She explained that she has always gotten information from Appropriate Technology Transfer for Rural Areas (ATTRA), which has conducted a great deal of sustainable agriculture research, as well as other sources. She stated, “I would have to work with people across the country and find people in the Rodale Institute… Farmers who wanted this stuff, they were very disheartened with campus. Farmers are pretty amazing, and very intelligent, entrepreneurial, and creative.” According to Cavanaugh-Grant, five to six LFSSF educators have left in the past year, and it does not appear as though they will be replaced.

Meeting the Needs of Local Farmers

In the 1980s, she started the Illinois Sustainable Agriculture Society for farmers who felt disenfranchised by the university. Working with a colleague at the American Farmland Trust, she secured a Joyce Foundation Grant to develop an on-farm research program for local farmers. She stated, “We worked with farmers across the state, and these were commodity farmers. They
were not fruit and vegetable farmers. These were cash grain farmers, livestock farmers who wanted to do sustainable agriculture research and move their farms in that direction.” The Illinois Sustainable Agriculture Society was composed of various regional groups in which farmers would come together to discuss their ideas and research alternative farming practices.

Cavanaugh-Grant stated, “There was a lot of pushback from the campus-based researchers… and so they formed their own groups, you had these groups of organic growers who started doing their own on-farm research.” Although central campus did not get involved with farmers who approached faculty about organic research during the 1980s, she stated that interest in sustainable farming has increased across the university and state. With new technologies available, farmers are finding new ways to communicate and exchange ideas with each other. She stated, “It’s all about networking with this group of farmers, to figure out what they’re going to grow, and developing a collaborative marketing plan… Farmers are still doing this… It’s just the tools they are using to communicate has changed.”

According to Cavanaugh-Grant, most small, diversified farmers in central Illinois still need assistance with business and marketing. She stated, “They are not getting the training, and they are not developing the tools and systems they need to become effective at what they are doing.” In some cases, farmers do not consider the cost of vending at markets or their overall production costs, which causes them to lose money rather than make a profit when they sell to the community. In her opinion, the local food movement would greatly benefit from farmers having more resources and training for business and marketing. She mentioned this would be particularly helpful for farmers who have an interest in getting involved with farm to school, which requires them to follow specific guidelines in terms of quality and quantity.
Cavanaugh-Grant stated, “You have all of these non-profits and other things that have started in response to this void that the institution could have provided in this arena, where other land grants did step up.” When asked about why LFSSF Extension programming has not been supported as much at the University of Illinois, she explained that between limited human and financial resources, as well as tuition dollars being funneled largely into research and teaching, Extension has not been prioritized on this campus, whereas others have managed to support research, teaching, and Extension. She stated, “I have spent my whole career working in this area and being on the fringe because this is not something that people thought was important.” Although the greater university and general public may not have been as responsive to her work in sustainable agriculture until more recently, these efforts were certainly appreciated by the local farmers. Dave Johnson, who participated in her study circles and on-farm research initiatives, stated, “Deborah Cavanaugh-Grant was the person who stuck out in helping us have some semblance of structure in alternative agriculture.” Her name was also mentioned by several other farmers and professors who were interviewed during this process.

Budget Cuts & Extension

As Illinois spent a year without a state budget, colleges and universities were forced to shut down many programs and delay plans as they waited for their funding to be determined. This prevented Extension from being able to hire employees to replace those who had left. According to the Herald-Whig, a media outlet in Quincy, IL, another LFSSF Educator who spent 36 years with Extension is retiring this year, and the County Extension Director will not be able to replace him due to their hiring freeze. The article stated that, according to the County Director, even if they were able to hire someone to replace him in the future, that employee would not be doing everything this LFSSF educator did. Extension educators in other parts of the state will be
responding to the LFSSF clientele in Adams, Brown, Hancock, Pike, and Schuyler counties. The map below, located on the Illinois Extension website, illustrates the locations of the 12 remaining LFSSF educators. Although they have been placed in offices across the state, there are visible gaps where no LFSSF educators are present in western, southern and northern Illinois.

*Figure 5.1*

While the number of LFSSF educators has been shrinking over the past year, the number of Illinois Extension employees across the state has also sharply declined in the past 30 years. In 2011, the *Peoria Journal Star* provided a report on the number of agricultural specialists employed by Extension. According to the former head of Extension, the article stated, the
number of agricultural specialists decreased from 92 in 1986 to 15 in 2011. These specialists are faculty members who work on Extension research in exchange for compensation from Extension. In addition to this number dropping, in just two years, the number of multicounty Extension units across Illinois fell from 76 to 27, and the number of Extension educators was down from 250 to 125 (Tarter, 2011).

The Growing Need for Local Food Systems & Small Farms Educators

According to Davison, Cavanaugh-Grant and others interviewed during this study, more farmers have been exploring the possibility of entering specialty crop markets. As this number increases, there is a greater need for educators who can teach farmers about the logistics, equipment, marketing, and business knowledge required to become competitive in alternative farming. According to the University of Illinois Farmdoc Daily, “Current projections place average net income on Illinois grain farms at about $20,000 per farm, considerably below the $104,000 per farm average for 2014. At current projections of commodity prices, net incomes in 2016 will likely be low as well” (Schnitkey, 2015). The graph below illustrates the “average net incomes on Illinois grain farms enrolled in Farm Business Farm Management (FBFM) from 1996 through 2014, along with a projection for 2015” (Schnitkey, 2015).

Figure 5.2
Although the market regularly fluctuates, the current net incomes for commodity grain farmers have not been this low since 1998-2002. This has led farmers to start exploring alternative markets, leading to new opportunities for LFSSF Extension Educators. In a study conducted in 2009 with farmers in Tennessee and North Carolina, 80 percent of the participants indicated they need more education and outreach information about alternative and organic markets. (Muhammad, Isikhuemhen, Basarir, 2009). According to the results, “When farmers were asked in which areas they need more information in order to enhance adoption of alternative enterprises, a majority (77.3%) of farmers (75% in Tennessee and 80% in North Carolina) indicated that they need more Extension/education/outreach information” (Muhammad, Isikhuemhen, Basarir, 2009). It was suggested that more information should be made available via the Internet, as well as through on-farm demonstrations in order for farmers to become more comfortable with pursuing these markets. Food safety practices, marketing skills, regulations and requirements were also identified as areas in which farmers need more information in this field. (Muhammad, Isikhuemhen, Basarir, 2009).

Conclusion

Reflective of the feelings expressed by Cavanaugh-Grant, Keith Warner (2007) explains the difficulties of those working in sustainable agriculture programs at LGUs. According to Warner (2007),

“Advocates of alternative agricultural science and extension programs have generally had to overcome deep-seated institutional resistance, and when they have succeeded, these programs have remained rather small. These programs understand small and medium farmers as their primary clientele, so their marginal political power should not be surprising. Many suffer serious and sustained budget cuts. Nevertheless, they have facilitated some scientific experts stepping out into the field to develop agroecological alternatives, and the limited entry of agroecological approaches into the dominant agricultural science institution in the United States (Warner, 2007, 57).
As Davison mentioned, it seems as though farmers could benefit from having their own separate organization devoted entirely to providing resources and education to small, diversified farmers. While these programs have not been supported by many LGUs in recent decades, it seems that non-profit organizations and community advocates are increasing in this field. For example, Practical Farmers of Iowa (PFI) was founded by a local farmer, Dick Thompson, who had been conducting research and providing education on his own land for years, hosting hundreds of farmers, teachers, Extension educators and community members. Warner (2007) stated, “PFI founders were convinced that Thompson—and other farmers like him—had developed strategies that could address the crisis in farming, but they could not get the attention of ISU (Iowa State University) researchers” (Warner, 2007, 40).

However, in 1987, a group of Iowa legislators passed the Groundwater Protection Act, which created the Leopold Center for Sustainable Agriculture at ISU. This was the first sustainable agriculture program at a Midwest LGU, and its focus was on conducting research into the negative impacts of large scale agriculture, developing sustainable practices and educating the public about their findings through working with the ISU Extension system. Soon after the Leopold Center was established, they developed a close relationship with PFI. Working closely together, they provide PFI staff with office space and university employee status. They have also provided funding to PFI farmers to conduct on-farm research, and the university now has a graduate program in sustainable agriculture. Warner (2007) stated, “They bridge the gap between universities and the practical needs of farmers, and they reverse the collapse of hope in rural communities” (Warner, 2007, 41).

Before returning to his alma mater at the University of Missouri (UM), John Ikerd gained experience working in Extension Agricultural Economics at North Carolina State University,
Oklahoma State University, and the University of Georgia. Upon his return to Missouri, Ikerd worked with the USDA to provide state and national leadership for research and education programs related to sustainable agriculture from 1989 to 2000. According to Ikerd (1999), Extension educators working to build a sustainable agriculture program at UM did not receive any support or financial assistance from the university administration, and they were forced to rely on volunteer efforts from Extension regional specialists and educators while working tirelessly to find grant funding for their travel costs and program expenses. Although they did not gain much attention from the community while operating as a top-down model, Ikerd (1999) explains the changes that occurred in their program once farmers became actively involved. Once their Extension team began sharing responsibility with farmers, they became successful partners in the teaching and learning process. Ikerd (1999) argues that a “people-empowering, networking model” is necessary for Extension educators implementing sustainable agriculture programs rather than the “traditional technology development and transfer model of Extension.” Since sustainable agriculture emphasizes diversity and alternative farming practices, Ikerd (1999) argues that educational programs in this area should reflect these characteristics. He states, “Sustainable agriculture educational programs must be in harmony with the nature of the things to which they are applied… it seems only logical that our models for educational programming should be models appropriate for site-specific, individualistic, dynamic systems of farming” (Ikerd, 1999).

Although many farmers did approach LGUs during the 1980s, Warner (2007) explains these universities did not have responses for the issues they were raising. He stated, “They did not want more technology transferred. They wanted a different kind of science for an alternative kind of agriculture. They needed a different kind of program for an alternative kind of extension”
(Warner, 2007, 57). According to Warner, the sustainable agriculture programs at LGUs tend to focus on issues relevant to small farmers in these locations. For example, he states, many sustainable agriculture Extension specialists in Wisconsin and Kansas are focused on grazing, while the programs in New England “emphasize direct marketing, organic production, and artisanal food” (Warner, 2007, 55).

The following chapter will focus on five Midwest LGUs that have centers for sustainable agriculture or Extension educators working in local food system development. Iowa State University, Ohio State University, Purdue University, Michigan State University, and the University of Wisconsin-Madison were chosen based on their proximity to Illinois, as well as the recognition they have received from colleagues in Illinois for their work in sustainable agriculture and local food education programming. Due to the similarities between agricultural climates in these states, as well as the relative size, academic environment, and reputation of these LGUs, the University of Illinois may benefit from adopting some of the sustainable agriculture programs and practices occurring at fellow Midwest LGUs.
CHAPTER 6: LOCAL FOOD EDUCATION AT MIDWEST LAND GRANTS

6.1 Iowa State University

Leopold Center for Sustainable Agriculture: An Introduction

Located on the Iowa State University (ISU) campus within the College of Agriculture, the Leopold Center for Sustainable Agriculture works closely with colleges, universities and non-profit organizations across the state to conduct research on alternative farming and conservation practices. According to their website, the organization’s goal is “to identify and develop new ways to farm profitably while conserving natural resources as well as reducing negative environmental and social impacts” (Leopold, 2016). State fees on pesticides and nitrogen fertilizers fund the Center, as outlined in its creation through the 1987 Groundwater Protection Act. Their name is a tribute to Aldo Leopold, author of The Sand County Almanac, lifelong conservationist, and Iowa native. Since 1988, they have awarded over 500 competitive grants for agricultural research projects (Leopold, 2016). Their website states, “The Center’s mission includes an educational component to inform the agricultural community and the general public about its research findings. The Center collaborates with ISU Extension and Outreach and others to communicate research findings” (Leopold, 2016). Although the Leopold Center is primarily devoted to water quality, their focus has grown over time. Currently their four initiatives include: ecology, marketing and food systems, policy, and crosscutting research.

The Growth of Organic Production in Iowa: University Reactions

According to Delate and DeWitt (2003), after organic production increased across Iowa, a group of citizens, including Extension staff, organic and conventional farmers, and agricultural professionals, requested that the ISU College of Agriculture establish an organic program. “These citizens recognized that, despite the growth in organic agriculture across the US, research
and Extension activities in organic farming systems were limited, particularly at land grant universities” (Delate & DeWitt, 2003, 80). In 1997, ISU hired an organic specialist as a member of the College of Agriculture faculty, and the Leopold Center offered their support for the program. According to Delate and DeWitt (2003), the Leopold Center maintained that farmers are essential to this research and “encouraged the organic specialist to establish a research agenda based on organic and transitioning farmer-identified problems. Extending research results throughout the state’s farming communities was also a goal of this new program.”

Focus groups were assembled to identify what kind of information on organic production was most needed by farmers and community members across the state. At the request of participants, long-term agroecological research (LTAR) sites were created in four different regions across the state to study the short and long-term impacts of both organic and conventional farming practices. According to Delate and DeWitt (2003), “By involving local farmers in the planning process, experimental design, sampling protocols and review of research results in the long-term experiments, we sought to obtain outcomes that would benefit the entire community.” After receiving requests for more Extension services in this field, ISU developed an organic agriculture publication series and Organic Gateway webpage, and events hosted by this program drew large numbers. In the first 3 years, Delate and DeWitt (2003) explained, “the organic specialist presented 140 invited talks on organic agriculture to an audience of 6000 producers, agricultural professionals and consumers. Field days attracted 1150 participants, ranging from organic and conventional farmers to Extension specialists and students.”

In a survey on organic agriculture programs at land-grant universities (LGUs), Delate and DeWitt (2003) found that many institutions do not have the necessary support to fully address the requests of producers. Most of these programs were either very limited or nonexistent, with
just a few Extension personnel hosting workshops or field days without faculty involvement. Many Extension programs had not even developed any educational materials on organic agriculture. While 57 percent cited having administrative support for this type of work, 37 percent claimed to receive little support from their administration. Others expressed an interest in sustainable agriculture, but did not feel they have the time to devote to this work due to the demands of their current positions. Three respondents indicated that “limited financial resources had been directed toward organic research, Extension and education activities at the college level” (Delate and DeWitt, 2003, 86). However, 61 percent of respondents noted that they expect organic efforts to increase at their university in the next five years, and many stated this as likely being a response to “increased farmer demand” (Delate and DeWitt, 2003, 86). As commodity prices have continued to drop, Delate and DeWitt (2003) argue that organic production is expected to continue growing. Delate and DeWitt (2003) also mentioned that land grant research has revealed that organic systems are economically feasible, and government support for these systems is expected to increase. “Land grant universities are expected to respond to this demand through the development of organic agriculture research, education and Extension programs at their institutions” (Delate and DeWitt, 2003, 87).

Two years after its implementation, the Organic Agriculture Program at ISU was ranked as one of the most highly active programs in this field at a LGU, and ISU was one of just three LGUs with certified organic research land (Delate and DeWitt, 2003). According to Delate and Dewitt (2003), this program succeeded due to administrative support, adequate resources and community participation in the development and implementation. “In order to develop policies that enable establishment of alternative agriculture enterprises, an ongoing assessment of farmers’ needs and constraints will be required” (Delate and DeWitt, 2003, 87-88). Although
they mentioned the need for more research faculty in this field at ISU, tangible organic agriculture organizations have formed, which “will assist understaffed land grant university scientists by serving as sounding boards for organic farmer research and education needs” (Delate and DeWitt, 2003, 88). As these networks involve producers and consumers in the research, education and outreach process, Delate and DeWitt (2003) argue that opportunities for researchers and Extension educators are expanding in this field at LGUs.

*Local Food and Farm Plan: State Responses to University Action*

In January 2011, the Leopold Center presented a Local Food and Farm Plan to the Iowa State Legislature. This included recommendations for state appropriations; creating a Local Food and Farm Advisory Board and Local Food and Farm Program Fund; business development support; financial assistance, food safety; support for local processors and beginning, transitioning or minority farmers; and local food incentives (Iowa, 2011). According to their report, the Leopold Center worked with over “1,000 individuals across the state to develop the Iowa Local Food and Farm plan recommendations, using a variety of methods including working sessions and workshops, listening sessions, one-on-one visits, and surveys” (Iowa, 2011). The state approved funding from their agriculture and natural resources budget to create a Local Food and Farm Initiative. In August 2011, the Local Food and Farm Initiative was tasked with working on four goals: expanding local food production, processing, distribution and marketing; increasing consumer and institutional spending on local foods; increasing profitability of farmers and businesses engaged in local food enterprises; and increasing the number of jobs related to local foods (Local, 2014). The report illustrated some of the progress that had been achieved. For example, local food sales to institutions grew to $1.43 million in 2013; 26 farms reached $8.6 million in sales in 2013; between 2008-2013, 62 jobs were created in this field and 63 new local
food producers or enterprises were established; and 16 schools spent $33,792 in food purchases from northeast Iowa farmers during 2013-2014 (Local, 2014).

The Role of LGUs in Agricultural Transitions

In a speech delivered at the 2013 national conference celebrating 150 years since the passage of the Morrill Act, Fred Kirschenmann, Leopold Center Distinguished Fellow, explained the ways in which LGUs may change the course of their outreach and research agendas to better serve farmers. According to Kirschenmann (2013), a great deal of the current science at LGUs is being devoted only to “intensifying our current technologically-driven, energy intensive agriculture,” and he argues that “ecology and evolutionary biology” are more relevant in shaping resilient food systems. Therefore, he suggests that LGUs “devote at least some of our limited resources to the application of these post-enlightenment sciences in agriculture” (Kirschenmann, 2013). Furthermore, he stated, LGUs should funnel more resources into the restoration of soil. Kirschenmann (2013) suggested that LGUs “redirect at least 30 or 40% of our research efforts in our LGUs to strategies that enhance soil health” in order to prepare for environmental issues continuing to be caused by industrial agriculture and climate change. Kirschenmann (2013) also argues it is necessary to increase our biodiversity, mentioning that some LGUs are beginning to focus on heirloom grains and specialty crops for food production. He stated, “Some LGUs are even cooperating with farmers to form farmer seed breeding clubs to help farmers produce seeds that are more adapted to their local ecologies. Often these ventures create interesting collaborations among farmers, researchers, chefs and other entrepreneurs” (Kirschenmann, 2013).

Along with changing the trajectory of research at LGUs and coordinating with local farmers, Kirschenmann (2013) suggests reinventing the Cooperative Extension Service (CES).
He stated, “Engaging ‘the people’ to provide them with the knowledge necessary to achieve their goals in food production and preparation was part of the original vision of the CES” (Kirschenmann, 2013). As communities move toward a “more knowledge intensive food production system,” Kirschenmann (2013) argues these services are more needed now than ever. According to Kirschenmann (2013), as food systems became more technology driven, private sector companies began undermining Extension by conveying their results to the public. However, as food systems are being restored, he believes Extension has an extremely critical role to play, and he believes LGUs have a responsibility to help Extension personnel prepare for this crucial task of working with farmers and others involved in the food system. Kirschenmann (2013) stated, “Providing farmers with the knowledge to restore the health of their soils and the biological and genetic diversity of their farms is but one example of the immediate need to assume the responsibility and opportunity of this new knowledge intensive CES.” In his final recommendation, he suggested “LGU’s could begin to engage entrepreneurs in the private food and agriculture business sectors to begin preparing for the changes coming at them” (Kirschenmann, 2013).

The Value of Integration in Local Foods Programs

Craig Chase, Program Manager for the ISU Extension and Outreach Local Foods Team, has been working with the Leopold Center since 2011. According to Chase, the marketing and food systems component was not part of the original format of the Center, but was added on when people started asking what kind of crops they could put into rotation, rather than corn and soybeans, to enhance water quality. After they started advertising these specialty crops, farmers wanted to know how these products could become more profitable. Therefore, Chase explained, the marketing and food systems program was designed to “help farmers diversify, help
communities that want smaller farms, more numerous farms… We were helping them through research grants and so forth to figure out what they should be doing.” Although they do not host farmer education programs themselves, they provide resources, such as farmers’ guides to selling different products and information on licenses, certifications and regulations. They also have information for farmers who are interested in processing their own products or starting shared kitchens, as well as resources for beginning farmers or those exploring alternative enterprises. Chase stated, “We have primarily resources, tool kits, those types of things that either the farmers themselves could use directly or an Extension educator wanting to give a program on this would be able to glean that information from us.”

Splitting his time, Chase has a 30 percent appointment with the Leopold Center and 70 percent with ISU Extension System Outreach, leading the Local Foods Team. Once the food systems program outgrew the structural capacity of the Leopold Center, they began working under ISU Extension. They also collaborate with several other small farm and local food organizations that work directly with farmers across the state. Chase said, “We work with community educators, local food educators, training them on topics and giving them information they need.” According to Chase, the ISU Local Foods Team works closely with a Regional Food Systems Working Group (RFSWG), which includes practitioners and community leaders from over 25 food-based organizations. This group was initiated by the Leopold Center in 2003 with the goal of developing a stronger and more sustainable food system by working with educators, producers, food businesses and community activists across the state. The ISU Local Foods Team provides training to this group when they meet on a quarterly basis. Chase explained that, although the Local Foods Team does not work directly with farmers, they provide information to members of this group to take back to their own organizations and provide to their clients. In his
words, “we train the trainers.” The Leopold Center’s website states that the RFSWG aims to “develop and implement a process for continuous learning across Iowa about what it takes to make a regional food system more vibrant and sustainable” (Leopold, 2016).

Although ISU Extension just formally established their Local Foods Team on October 1, 2015, the members were already familiar with this movement due to their interconnections with related programs and organizations. Although they only have 12 educators on their Local Foods Team, Chase explained that they network with personnel and field specialists from many other organizations. He stated, “Our role is to cross all Extension units in all colleges and all departments, and we do that through the Iowa Food Systems Working Group…. We have people from agriculture, community and economic development, human sciences.” Chase stressed that their program is very integrated, adding that they have support from the Vice President of Extension and Outreach and build connections with many different sectors across campus and the community. Describing how their programs relate to the other Extension units, he stated, “If somebody wants to talk about 4H, we can talk about Farm to School, Extension programs and school gardens…We can talk about the role of food in community development, whether it is buildings and infrastructure or food access issues.” When the local food coordinators were working out of the Leopold Center, Chase explained, they were very research and grant-focused. Now that they are working under Extension, they are more focused on outreach.

ISU Extension also works closely with Farm to School and Food Corps, a nationwide AmeriCorps program that connects children to healthy, nutritious food from local farms. While states with Food Corps each have different programs overseeing their members, Chase explained that ISU Extension was hosting six Food Corps sites and 11 services members for the 2015—2016 year. According to the Leopold Center’s final Local Food and Farm Program Report,
“Food Corps members worked in six Des Moines Public Schools (DMPS) to build gardens, incorporate the garden activities into classroom curricula, teach nutrition education, and include local foods in school lunch menus and snacks” (Local, 2014). They raised the number of teachers using school gardens as part of their classroom curricula from 17 to 50, recruited 87 community members to work in the gardens, and harvested 400 pounds of produce that were either used by the school or donated (Local, 2014). Along with providing information to Food Corps and Farm to School programs, Chase stated that ISU Extension also works with special populations, such as prison inmates, to help develop community gardens. Although they may not work directly with all of their clientele, Chase said they network very closely with field specialists and county-based personnel who are on the front lines, getting questions from the farmers and community members. He stated, “We try to coordinate our work with approximately 150 non-profit organizations around the state, whether that is Practical Farmers of Iowa, the Women, Food and Agriculture Network (WFAN), or local food policy councils.” Moving forward, Chase believes the local foods team will either grow substantially as a program or become much more decentralized, with local food specialists in every Extension unit, similar to the structure of the RFSWG.

*A Food System for the Future*

According to Kirschenmann (2013), other countries have already started adapting their farms in response to global and environmental challenges. He provided a domestic example from Virginia, Polyface Farm, which “annually produce 30,000 eggs, 10,000 to 12,000 broilers, 100 beef animals, 250 hogs, 800 turkeys and 600 rabbits on 140 acres, using a rotational grazing system that requires very little fossil fuel” (Krischenmann, 2013). Reflecting on the productivity of this ecological farming model, he asked, “How much more could we do if we devoted at least
30 percent of our public research dollars to exploring adaptations of such agroecological approaches?” Nine years later, other members of the Leopold Center are still exploring options for addressing this crisis. In the spring of 2016, the Leopold Center met with Drake University’s Agricultural Law Center to discuss the issue of climate change and the future of agriculture (Adams, 2016). Participants included farmers, academics, journalists, agribusiness employees and representatives from other farm organizations. Many speakers argued that farmers must diversify and prepare for moving into different markets, which will require greater educational programs for producers. According to the Leopold Center’s report on this event, “Whether that education and training comes from coop and industry representatives, government agencies, neighbors, or Extension staffers, it will have to emphasize that soil is a precious and highly vulnerable resource and enough has been squandered already” (Adams, 2016).

Conclusion

In speaking with Chase and researching the history of the Leopold Center, its relationship to ISU, and their coordination with other local food and small farm organizations, collaboration was the overriding theme of their local food system development strategy. By allowing the Leopold Center to operate as part of the university, researchers in this field have unique access to resources unavailable at institutions without a center for sustainable agriculture. Over time, it appears their collaboration with university researchers and Extension educators has grown, as well as their partnerships with other sustainable agriculture organizations, such as Practical Farmers of Iowa and the Women, Food and Agriculture Network. According to Chase, these relationships are vital to their work and connection to the community, and appear to have been the key to their success as a model sustainable agriculture education program.
6.2 University of Wisconsin

Since its inception, the University of Wisconsin-Extension (UWEX) has a long history of priding itself in the creation of programs that address the needs of the community. According to the UWEX website, “Throughout the past century of progress, UW-Extension programs were created, not only by the university, but also by Wisconsin people who petitioned their state and local governments for the university to respond to their needs” (History, 2016). Furthermore, UWEX claims their programs have “grown and changed over the years to meet the changing needs of people, communities, the state, and the nation” (History, 2016). UW-Madison Professor Roger Williams (1996) explains how the needs of small farmers changed between the 1980s-1990s due to the financial crisis. In a 1994 survey of Wisconsin farmers experiencing financial hardship, the number one concern was low milk or other commodity prices, followed by high costs of input and high taxes (Williams, 1996). The physical and emotional consequences of this were particularly alarming, as one-fourth indicated they had experienced thoughts of suicide. Many also noted feelings of worthlessness, difficulty sleeping, withdrawal from family and friends, confusion, increased fear of people/things, restlessness, increased aggression, and increased smoking and alcohol abuse (Williams, 1996).

According to Williams (1996), Extension agents should have knowledge about different community agencies that can assist local farmers and spread awareness of these resources through outreach events and various forms of media. Along with financial consultation, many farmers expressed a need for medical and legal assistance, livestock feed and food stamps, and some also revealed they were unaware of who provides these resources. Williams (1996) stated, “Work in these arenas can counteract the criticism sometimes leveled at Extension agents that ‘Extension only works with the most successful farmers in the county.’” Williams (1996) also
encouraged Extension agents to work toward addressing seven key policy issues through writing articles, hosting forums or exerting their personal influence to advocate for small farmers. This included:

“a.) promoting commodity pricing which allows farmers to survive b.) cutting property taxes and/or valuing agricultural land on the basis of its current use c.) allowing capital gains to roll over into a retirement account so older farmers are not taxed heavily as they exit farming d.) creating environmental policies that protect natural resources and allow farmers to produce food and earn a living e.) providing health insurance by changing Medicaid eligibility requirements or making sure farmers are covered in health care reform packages at the federal or state level f.) creating outreach programs to link farmers with resources to meet their financial, legal, or human service needs; and g.) providing job training for distressed farmers to help them supplement their farm income or transition out of farming” (Williams, 1996).

Although the farm crisis of the 1980s was widely publicized, the aftermath experienced by many farmers in the 1990s was largely overlooked. While many farmers are still struggling, several programs have been initiated across the University of Wisconsin system to support small, diversified farms and community agriculture.

*The Center for Integrated Agricultural Systems*

In 1989, the Center for Integrated Agricultural Systems (CIAS) was established within the University of Wisconsin-Madison’s College of Agricultural and Life Sciences. According to their website, the CIAS mission is “to build UW sustainable agriculture research programs that respond to farmer and citizen needs… and involve them in setting research agendas. This means that human relationships are at the core of everything we do” (About CIAS, 2016). Their training, education and research programs promote social, economic and environmental sustainability, while working to reduce costs and increase profits for farmers. The website also describes their program as “unique, in part, because of our commitment to involve citizens and academics, representing many disciplines and professions, as equal partners on our research team” (About CIAS, 2016). Along with offering farmer-training programs, CIAS staff members,
representing a wide range of expertise, conduct research on agricultural issues affecting farmers across the state of Wisconsin.

**Beginning Farmer Training Programs**

According to their 2015 Annual Report, CIAS took over the Integrated Wisconsin Cropping Systems Trial, which compared conventional and organic crop forage systems over long periods of time. CIAS also recently received funding to launch a school for beginning organic grain farmers. In 2015, CIAS trained 110 beginning farmers through their grower schools in grass-based dairy and livestock farming, and apple, grape and vegetable production.

Over 20 years ago, CIAS partnered with the Farm and Industry Short Course in UW-Madison’s College of Agricultural and Life Sciences to launch the Wisconsin School for Beginning Dairy and Livestock Farmers (WSBDF) (The Wisconsin School, 2016). This was initiated in response to the rapidly decreasing number of beginning farmers, which fell 20 percent in the past five-year census period (The Wisconsin School, 2016). With the average farmer being over 58 years old, CIAS was concerned about the future of agriculture in Wisconsin, which comprises “16 percent of the state’s industrial revenue while contributing over 400,000 jobs to the state’s economy” (The Wisconsin School, 2016). A recent CIAS survey revealed that over three quarters of WSBDF graduates are farming, and half of them have started their own business (The Wisconsin School, 2016).

In total, over 500 participants have completed the program, and WSBDF is now offering distance education for students at various campuses and Extension offices across Wisconsin. The program includes a wide range of expertise: “WSBDF course materials draw from the knowledge of experienced farmers, Extension specialists, government agencies and other agricultural professionals, many of whom serve as WSBDF instructors. Students find the diverse
instructional team both engaging and grounded in practical experience” (The Wisconsin School, 2016). Students create a business plan for their future farm, along with gaining hands-on experience working in pastures. According to CIAS, “Beginning farmers today face serious obstacles, such as high land prices and other investment costs. WSBDF gives these farmers the connections, practical approaches, tools and skills to face challenges with confidence” (The Wisconsin School, 2016).

Wisconsin Farm to School

Along with carrying out several organic research projects, CIAS recently led a workshop on sustainable regional food freight, co-hosted the Northern Nut Growers Conference, and hosted the Wisconsin Farm to School Conference, which welcomed over 200 attendees (CIAS, 2015). Vanessa Herald, Farm to School (FTS) Outreach Specialist, has been working at CIAS for the past four years, providing information to school food personnel and farmers on a state and regional scale. As the Great Lakes Regional Lead for the FTS Network, she works with state leads from Minnesota to Ohio, sharing resources and keeping her partners informed on FTS activities across the region. Describing the work of CIAS in a December 2015 interview, she stated, “We focus on participatory research, so we really work with producers and community members and others to see what their needs are and engage with them in doing the research and outreach that we do.”

Along with farmer training sessions, CIAS provides many online resources, such as farm to school toolkits, which contain much of the preliminary information their clients need. They also host workshops and give presentations at conferences, such as the Wisconsin Local Food Network. When working independently with producers, Herald explained, some partnerships require funding. For example, they have been able to work with apple growers in the past due to
grants they received specifically for providing local apples to schools. She stated, “We also work one on one with producers if they are trying to troubleshoot a certain problem, maybe around food safety issues or if they’re trying to connect with a certain institution.”

According to Herald, Wisconsin has created a strong organizational structure for FTS across the state. Along with the FTS Advisory Council that was created through legislation, they have a FTS steering committee and leadership group that meet monthly, and grassroots community members working on FTS initiatives who receive a biweekly newsletter. Herald explained that the FTS movement has been growing each year since she started working in Wisconsin. Although some school personnel may feel overwhelmed by the thought of starting a FTS program, Herald explained that many teachers, kitchen staff and administrators now believe this is a manageable and worthy goal, and she suggests beginning with easy steps, such as taking advantage of procurement resources and building connections with local farmers in the community. When asked about university involvement in FTS, Herald stated, “Universities often have capacities for research that other organizations don’t have, especially when we’re looking at evaluation, reporting or telling stories about the impacts of farm to school in ways that help us realize we need to advocate for funding.”

Herald anticipates the FTS movement will continue to grow as demand increases from students and parents, especially since more schools are regularly featuring local items on their menus. She stated, “People are starting to see the longer term benefits in terms of student participation, student connection with food, their learning… It’s really just becoming a normal part of how a lot of schools are operating.”

UW College Food Project
Both the UW-Madison Housing Food Service and their Memorial Union have worked to procure food directly from local farmers, small farmer cooperatives, and organic sources. The UW-Madison Housing Food Service also works to educate students through special meals that feature the farmers who supply this food. Farmers have staffed an educational display table to talk with students while they wait in line to enter the cafeteria, and CIAS staff offered organic vegetables from the student garden on campus. According to CIAS, “In December of 2000, UW-Madison became the first major public university in the U.S. to commit to putting foods grown on local farms on the regular menu at their dorm dining centers” (The College Food, 2016).

Although demand for local foods has increased from students, faculty and staff originally started the local food purchasing initiatives at UW-Madison. In the mid-1990s, this began with CIAS working with food service administrators and chefs to create local food menus, including ones focused on food system issues. “These menus addressed topics such as energy use, food security, sustainable agriculture, and the economic development potential with local food systems… The efforts were called ‘consciousness catering’” (The College Food, 2016). After placing requests for local catering, CIAS continued this work with assistance from a USDA Sustainable Agriculture Research and Education (SARE) grant. The dining halls now regularly feature three local items obtained from Wisconsin farmers: “tortilla chips made from organic blue corn grown in Janesville, apples grown in Richland Center, and organic potatoes from Antigo” (The College Food, 2016). Although the Housing Food Service administrator who supported the first local food dinners experienced challenges with high costs and finding enough vendors to supply the different products, they started small and have continued searching for different options to continue these dinners at a reasonable price. In 2001, UW-Madison’s Memorial Union hosted a catered event for 1,000 guests that featured four locally grown meals
with products from four cooperatives that represent hundreds of farmers, as well as items from seven individual farmers. As a consequence of this success, the Union has devoted a portion of their menu specifically to local foods, and four main brokers were chosen to work between farmers and the Union. “As the Union develops its new catering menu, a series of meals will be developed based on what farmers can provide throughout each part of the growing season” (The College Food, 2016).

*Milwaukee Urban Discovery Farm*

In 2013, UWEX Local Foods and Micro-Farm Coordinator Ryan Schone began coordinating the Milwaukee Urban Discovery Farm (MUDF), an educational program for local growers who have an interest in building a sustainable local food system in their communities. According to Schone, “UWEX provides 72 acres of rental plots to eager urban farmers and community gardeners…. UWEX agriculture dates back to the early 1970s when the first plots were rented on the Milwaukee County Grounds” (Schone, 2014). The program started by renting three of these plots to local growers interested in trying new production methods on “microfarms,” which range from 30’ X 30’ to half acre plots (Schone, 2014). UW-Madison’s Community and Regional Food Systems program is overseeing the MUDF, and the project involves several other cities, including Detroit, Boston, Los Angeles, Chicago, Minneapolis, Cedar Rapids, and Madison (Julson, 2014).

The program expanded to four of UWEX’s 11 garden sites and included an urban farm near a fruit market on the south side of the city. Participants receive subsidies, and the rental costs are based on their financial status. As participants, they develop a business and marketing plan, have the option of joining a Community Supported Agriculture (CSA) program, and they are required to keep records and complete paperwork as data for the study (Schone, 2014).
Monthly workshops are also provided, and participants are able to choose the topics. Guest speakers offer information on various farming issues, such as soil health and seed selection (Julson, 2014). UWEX also has an Organic Learning Center in Milwaukee County, which “provides hands-on education, teaching farming basics like crop rotation, drip irrigation, seasonal hoop-house growing, and composting” (Julson, 2014). Overall, the program aims to investigate the potential of urban micro farming as a source of reliable family income.

**Participatory Research with Farmers**

In a study that was partially funded by CIAS, researchers tested the potential effectiveness of “radial teams,” which include diverse members from different backgrounds, disciplines, and professions. Stevenson, Posner, Hall, Cunningham and Harrison (1994) identified major challenges faced by LGUs conducting applied agricultural research, suggesting LGUs should “adopt systems level research; expand the circle of research and Extension collaborators; and communicate results to broader audiences, including consumers and policymakers.” The radial model of team organization was applied to two Wisconsin projects: a whole farm case study of a dairy operation that was being converted from conventional to organic management and an integrated cropping systems field-sized trial that compared productivity, profitability and environmental impact. Their study concluded “radially organized teams of scientists, farmers and other agricultural professionals can make important contributions to agricultural research and Extension” (Stevenson, Posner, Hall, Cunningham & Harrison, 1994).

Due to the hesitancy that some research scientists expressed in allowing farmers to have decision-making power in these groups, one of their suggestions included “broadening the acceptance of the contributions that nonscientists make to multiprofessional research teams”
(Stevenson, Posner, Hall, Cunningham & Harrison, 1994). As described by Stevenson, Posner, Hall, Cunningham and Harrison (1994), “the issue of farmers’ power drove several prospective university scientists away... Both proactive and reactive organizational mechanisms have been used to give the nonscientists on the teams a sense that they are ‘owners’ of the projects and exert real authority.” In order to properly address the research challenges faced by LGUs, Stevenson, Posner, Hall, Cunningham and Harrison (1994) state that research agendas should also expand beyond traditional agricultural production issues, arguing that more attention should be devoted to studying the whole farm, ecology, and how social and community elements, such as of class, race, gender, and generational equality, fit into the larger food system.

In 2007, UW-Madison created its Agroecology MS Program, which involves faculty from 20 different departments across campus to provide broad, interdisciplinary expertise to students studying agricultural systems, including environmental and socioeconomic perspectives. The Director of CIAS also serves as the co-chair of this program. Located within the College of Agricultural and Life Sciences, some of the students in the Agroecology program are working directly with local farmers to “find ways to sustain communities, reduce the use of chemicals and increase profitability” (Grauvogl, 2012). One student worked with pork producers in the Upper Mississippi Valley, including the Driftless region, to help these farmers identify effective marketing techniques. Another student researched whether mob grazing with cattle can be used to control Canada thistle without chemicals. This student planned to “visit with farmers about how they learn new techniques and decide to adopt them... to work with farmers to help them discover and adopt the best of new strategies” (Grauvogl, 2012).

Julie Dawson, Horticulture Professor and faculty in the Agroecology MS Program, conducted a study to determine farmer interest in participatory plant breeding research.
Explaining the traditional role of land-grant institutions and importance of public involvement in academic research, Dawson and Goldberger (2008) stated, “Some scholars and activists argue that citizen involvement can contribute to the ‘democratization’ of university science and technology decision-making. When citizens are involved in the research process, research results are more likely to be relevant, accepted and put into action.” Furthermore, there is an argument for direct farmer involvement in agricultural research: “They argue that farmers, the primary beneficiaries of most research conducted in colleges of agriculture at Land-Grant universities, should be actively engaged in the research process” (Dawson & Goldberger, 2008, 177). They argue that participatory plant breeding (PPB) takes advantage of both scientist and farmer knowledge: “In PPB projects, scientists and farmers work together to set breeding objectives, generate genetic variability, make selections, evaluate experimental varieties and generate and disseminate seeds. Agricultural scientists interested in these types of participatory research approaches certainly want farmers involved in their programs” (Dawson & Goldberger, 2008, 177-178).

After conducting a survey of wheat growers in the state of Washington, their study revealed that approximately 52 percent of growers were interested in PPB with the university programs. As their conclusion explains, “A majority of farmers—at least in Washington State—also want a more participatory public agricultural research system. They themselves want to be actively engaged in the research process” (Dawson & Goldberger, 2008, 185). Amongst the characteristics of those who were most interested in agricultural research participation, they stated, “growers who reported being ‘highly affected’ by inadequate attention from WSU researchers were the most likely to be interested in working with scientists to develop new wheat varieties” (Dawson & Goldberger, 2008, 186).
Conclusion

The large variety of community agricultural education and outreach programs that have been created by the University of Wisconsin, along with the reception from local farmers, indicates that organizations like CIAS are in high demand amongst a new generation of Midwest growers. By making these resources available to those outside the academic setting, university researchers are opening doors for mutually beneficial collaboration throughout the community. However, it appears that many of the needs addressed by Williams (1996), such as the financial, medical, and social challenges faced by older generations of farmers, are still not being fully recognized by the university, as several of the new programs are geared toward beginning farmers, more often younger individuals who do not have the same types of hardships.

6.3 Michigan State University

In a study conducted by researchers at Michigan State University (MSU), Colasanti, Wright, and Reau (2009) argue that Extension educators could play a larger role in fulfilling the land grant mission through coordinating community partnerships focused on food system development. According to these researchers, both activists and academics have advocated for “food system re-localization.” In 2004, stakeholders across five counties in southeast Michigan began meeting to discuss the relationship between agriculture, food, and economic development. The group became known as the Food System Economic Partnership, and their goals were to “improve the viability of the agricultural sector in the region; provide economic revitalization opportunities for urban areas; improve consumer understanding of what is produced, processed, and marketed in the region; and improve producer understanding of consumer needs” (Colasanti, Wright and Reau, 2009). Their work teams include Research and Development, Business Innovation and Networking, Farm to School, and Education and Outreach.
During the FSEP meetings, Extension educators provided guidance and informal facilitation, allowing other participants to serve as leaders. According to Colasanti, Wright and Reau (2009), “Extension educators work diligently to maintain a broad base of participant engagement to ensure that individuals representing every aspect of the food system are given a voice.” Describing the cooperative research that occurs within FSEP, “They are forging a new learning-centered dynamic that puts co-discovery at the center of the relationship between university and non-university personnel and ending the educators’ exclusive claim to knowledge, whether real or perceived” (Colasanti, Wright & Reau, 2009). FSEP focuses on issues from the perspective of community members and those outside the academic setting. “They are not engaged in textbook interpretations of social problems, but real-world interpretations as defined by local residents” (Colasanti, Wright & Reau, 2009). Due to the variety of participants, there are many in-depth discussions about food system values, ensuring that community members of many different backgrounds are represented. According to Colasanti, Wright and Reau (2009), “Citizens must have a context in which they can dialogue about their values and visions for sustainable agriculture. Community-Extension partnerships such as FSEP that take a leaderful approach move us closer in this direction and invigorate the land grant mission.”

**Michigan Good Food Charter**

In 2009, the MSU Center for Regional Food Systems (CRFS), the Food Bank Council of Michigan, and the Michigan Food Policy Council developed specific goals for the Michigan food system that promote access and environmental sustainability while strengthening the local economy. Five working groups identified priority goals for the food system and presented these at a statewide summit. After collecting feedback from participants and the general public, the Michigan Good Food Charter was released in 2010. According to Pirog, the Good Food Charter
(GFC) includes 20 different members on their steering committee, the majority of which are nonprofit organizations, and they meet four times per year to discuss the advancement of their goals. The six goals outlined in the GFC, which they are working to meet by 2020, include:

1.) Michigan institutions will source 20 percent of their food products from Michigan growers, producers and processors.
2.) Michigan growers will profitably supply 20 percent of all Michigan institutional, retailer and consumer food purchases and be able to pay fair wages to their workers.
3.) Michigan will generate new agri-food businesses at a rate that enables 20 percent of food purchased in Michigan to come from Michigan.
4.) Eighty percent of Michigan residents (twice the current level) will have easy access to affordable, fresh, healthy food, 20 percent of which is from Michigan sources.
5.) Michigan Nutrition Standards will be met by 100 percent of school meals and 75 percent of schools selling food outside school meal programs.
6.) Michigan schools will incorporate food and agriculture into the pre-K through 12th grade curriculum for all Michigan students, and youth will have access to food and agriculture entrepreneurial opportunities.

According to the GFC, 59 percent of Michigan residents struggle with food insecurity, despite the state ranking second in the country in most diverse agricultural production (Colasanti, et. al., 2010). The Charter outlines 25 policy priorities that include detailed strategies for reaching the previously mentioned goals within 10 years. This includes creating new economic opportunities, bringing healthy food to all neighborhoods, and bringing healthy food into the mainstream (Colasanti, et. al., 2010).

Center for Regional Food Systems: An Introduction

Although the university was involved in the creation of the GFC, the CRFS was not formally established as an organization until 2012. Rich Pirog, Senior Associate Director at CRFS, was recruited from Iowa State University’s Leopold Center to help start the organization. In a January 2016 interview, Pirog explained that a number of MSU researchers began a group focused on sustainable food system development in 2004. After interest grew and the group
applied for grant funding, the university agreed to provide three years worth of financial support
to help the group launch the CRFS. Other organizations, such as the Kellog Foundation, which is
located very close to MSU, have been providing funds to food systems researchers at the
university for several years.

Addressing Farmer Needs

When asked about the greatest needs of Michigan farmers, Pirog stated, “There needs to
be a more comprehensive support system for local farmers… The help that farmers get is not
well coordinated. There are very few places that have organizations… have the capacity…
budget, staff… totally focused on local farmers.” Pirog mentioned Practical Farmers of Iowa as
an example of an organization that is completely devoted to local farmers. He added, “Here in
Michigan, we have a lot of great programs, but there is not one organization that has a good
budget, totally represents farmers and doesn’t sway from that mission… It is an important thing
to happen in any particular location.”

According to Pirog, much of the support for local farmers tends to be small grants,
workshops and other piecemeal offerings. Further analyzing the success of Practical Farmers of
Iowa, Pirog explained that they have over 10 staff, a budget over two million dollars, an
endowment, and a savings program for beginning farmers. He stated, “Every state needs an
organization like Practical Farmers of Iowa… That organization brings farmers to Washington
D.C. to help them testify on policy issues, brings them to the state capitol in Des Moines.”

Although the CRFS is very supportive of farmers, Pirog explained, their mission is broader than
addressing the needs of farmers. In his opinion, they would benefit more from a non-profit
organization that can assist farmers in all of their issues.

Farm Education Programs
Financing Farming in the U.S. (FFUS) is one of the CRFS projects that may be most beneficial to local farmers, as it is geared toward small and midsized farm operations. Since the group began conducting research, their network has grown to include over 25 national and community organizations, including policymakers across the country. In 2016, the group released a document on new funding sources for food-related businesses with a directory of financial aid categories. This includes crowd funding, accelerator, miscellaneous and additional federal resources, and the document provides descriptions on different sources, allowing the reader to decide which one may be most appropriate for his/her business plan (Guel, 2016).

The CRFS also provides a nine-month Organic Farmer Training program that focuses on producing fruits, vegetables, herbs and flowers for local markets. Students learn how to manage a 10-acre certified organic farm while developing business and marketing skills. The course combines hands-on farm work with lectures, readings and assignments centered on farming principles and practices. After completing the program, students earn a certificate from the MSU Department of Horticulture and the MSU Student Organic Farm.

Networks and Organizational Partnerships

According to Pirog, the CRFS is most effective in facilitating networks for local food organizations across the state. They just created a network of local food policy councils, and the leaders from these groups meet regularly. He stated, “We’re trying to play a more network facilitating role to help organizations succeed across the entire state, and there are very few other states doing that… We do a lot more network building and convening than other university groups do.” When analyzing the work of other states, Pirog added, “There are many things that universities can do besides just research projects and having Extension people do outreach projects. And I think some universities don’t fully understand and realize how important their
role could be.” In Michigan, 15 staff members have at least half-time appointments working solely on local food issues across the state. Pirog stated, “The local food folks tend to not be as savvy on production, but they have more marketing skills, and the skills to run businesses rather than just being able to plant something and knowing when to harvest it.”

CRFS also supports the Michigan Good Food Fund, which provides loans across the whole food value chain, including production, processing and distribution loans to both food hubs and food retail outlets. In the summer of 2015, this fund was created by investments from several different foundations interested in creating jobs and building businesses focused on healthy food access. The Center also coordinates a Michigan Food Hub Network, as well as a learning community, which allows all state food hubs to meet three times per year to discuss collective projects and other initiatives. Pirog explained that the university uses a great deal of produce from their research farms, including a state of the art hoophouse that produces greens ten months out of the year and resides directly outside one of the newest campus cafeterias.

CRFS has a goal of promoting healthy food access, and they frequently promote and advertise for organizations that share this mission, such as the Hoophouses for Health program, which provides farmers with hoophouses through interest-free loans. Pirog stated, “The farmer pays that back with no interest through a voucher system by selling produce at farmers markets to people that are eligible for SNAP benefits…Those people with the vouchers get free produce.” According to Pirog, the program also recently teamed up with Michigan Farm to School to allow farmers to provide this produce to children and families in K-12 schools. Operating out of CRFS, Pirog explains that Michigan Farm to School is viewed as part of their larger Farm to Institution Network, which includes hospitals, colleges, and food hubs, as well as a mini grant program for farm to school initiatives.
Farm to Institution

CRFS also has a Farm to Institution Network, which works toward meeting the GFC’s goal of 20 percent of food in Michigan institutions coming from local sources by 2020. They work with several different institutions, such as hospitals, colleges, early childhood programs and schools. Farmers, advocates, researchers, suppliers and food advocates are welcome to become members and join this effort to increase local food purchasing across Michigan. The network has also started an institutional purchasing campaign entitled Cultivate Michigan, which coordinates tours and educational events showcasing different local products. In July, they facilitated a tour sponsored by the Cherry Marketing Institute, which included a lunch sponsored by the MSU Product Center. Seven Farm to Institution stakeholders and three MSU Extension Educators participated. According to the MSU Extension report, “The first stop was Cherry Bay Orchards in Sutton Bay to meet with Don Gregory, who has been growing cherries there since the early 1970s… Participants learned how cherry farming is a long term commitment and investment for growers” (Borgman, 2016).

In 2012, researchers at the CRFS conducted a study on farmer perspectives on farm to institution (FTI), arguing that Michigan provides an interesting case due to having over 55,000 farms, nearly 10 million acres in farmland, and the seventh largest group of vegetable farms in the country, as well as a food and agriculture industry that contributes $96 billion to the state economy each year, comprising 22 percent of the state’s employment (Matts, et. al., 2015). Their survey revealed that “social values” were the biggest motivating factor for farmers wanting to sell to institutions, as they most frequently cited “supplying healthy foods to customers” and “supplying local food to customers” in their reasons for participating in FTI (Matts, et. al., 2015). It appears that many farmers do not generate much income from selling to these institutions as
compared to commercial markets. “Over 75% of the small subset of farmers who indicated that they sold produce to institutions reported gross sales of $5000 or less from this type of market” (Matts, et. al., 2015). Since many of these purchases are made in low volume and several of these institutions operate on a tight budget, the revenues may not always compensate for the true costs. However, Matts, et. al. (2015) argue that selling to these institutions may have unquantifiable benefits, such as free marketing and promotion, potentially leading to long-term economic profits.

Although farm to school is often advertised as an economic opportunity for farmers, these researchers argue that low-volume sales commonly present challenges. “If this trend in farm to school is consistent across other institutional markets, this may favor direct sales by smaller, diversified farmers who often experience these high transaction costs in other market outlets and push out larger-scale, more specialized farmers” (Matts, et. al., 2015, 68). Some farmers who participated in the survey pointed to the need for more information on entering institutional markets, as well as which institutions are interested in forming these relationships. Although several online marketing tools are available to help with building these connections, the researchers stated that further educational opportunities could be useful in this area. Farmers also expressed an interest in learning more about food safety rules and regulations for selling to institutions. “Outreach and education opportunities, such as farmer-to-farmer training and dissemination of research results in a practical format, may be effective tools to help farmers understand how to enter and sustain institutional markets” (Matts, et. al., 2015, 68). Although FTI may not be the most economically feasible option for farmers, the researchers explained, “As the demand for local food increases, it will be critical to continue to understand the benefits and challenges to farmers participating in FTI to best serve the needs, challenges, and opportunities unique to this market outlet as they emerge” (Matts, et. al., 2015, 69).
6.4 Ohio State University

Ohio State University Extension (OSUE) has four major program areas: family and consumer sciences, 4-H youth development, community development, and agriculture and natural resources. *Healthy Food Systems*, an Extension publication on local foods in Ohio, explains that OSUE is uniquely qualified to lead community-based work related to food because it is the only organization in the state that “touches” every part of the food system (Fox, et. al., 2016). “These ‘touch points’ allow the organization to facilitate meaningful dialogue and action that transcends such elements as production, distribution, and consumption. Such integrated work can result in improved access to local food and ultimately improved health and wellness” (Fox, et. al., 2016). The remainder of *Healthy Food Systems* provides detailed information on OSUE resources and programs focused on Food Production, Food and Business, Food and Health, and Food and Community. This includes curricula for many different 4H programs, new farmer training, food safety information, business planning, and community garden resources. Although the Local Foods Signature Program is a relatively new addition at OSUE, Extension educators have been working in this field for a number of years.

*Local Foods Signature Program*

Brian Raison, Ohio State University (OSU) Professor and Extension Field Specialist in Community and Organizational Leadership, was part of an Extension group that initiated the OSU Local Foods Signature Program. According to Raison, there were many different OSUE educators working on local foods issues, but in different areas and locations. After realizing how little contact these individuals were having with each other, Raison sent a message to about 300 OSUE educators, asking which ones were working on local foods issues and whether they would like to meet for a discussion. Approximately fifty educators attended, and during the meeting,
Raison observed two schools of thought amongst participants. One perspective was that Extension Educators should be going into communities and teaching, while the other held that they should act as facilitators. Raison explained, “I saw the opportunity that they were both correct… It’s not one versus the other; it’s both. But it’s our attitude; it’s our priorities; it’s our leadership, and how we do it.”

As an OSUE Educator in Community Development, Raison focuses on strategic planning, organization and leadership. He stated, “Local foods is really where a lot of that manifests itself.” The local foods meeting had participants from all four of their major program areas, as well as state specialists and staff from their Research and Development Center. Six months after the initial meeting, they met again and defined their mission for local foods as an Extension program. Another six months after outlining their goals, they approached the Extension administration, requesting to create a Local Foods Signature Program. The proposal was initially turned down, but they continued working as an official team. Raison explained, “We were just a group of people who got together and shared ideas, and the local food movement obviously kept growing, and creating jobs, and expanding health and nutrition, and getting people thinking about their food.” In 2012, the OSUE administration agreed to create a Local Foods Signature Program, and it now has two co-leaders who develop curricula and events to serve clientele with questions in this area.

Based on his conversations with farmers, the greatest need in this area has been resources and alternative marketing approaches for those interested in expanding into specialty crops. As a result, they are developing a virtual market that will allow people to purchase online, and farmers will be able to drop their products off in a central location for customers. They have also started an educational program for small and beginning farmers. Raison explained, “We’re doing this
thing called small farm college where we’re helping new and emerging farmers to figure out how to tap into the local food market, how to diversify, how to go organic if they want, how to sell their food and their crops and get a good return on their dollar.” Raison expects this field to continue growing due to the number of requests and inquiries they have been receiving. He mentioned the phrase “food as economic development,” which is a term they have been using to describe the growing number of jobs and business opportunities in this area.

Community Partnerships

According to a study conducted by OSU faculty, staff and Extension Educators, OSUE recently collaborated with community organizations on a two-year Urban Agriculture Overlay Planning Project, which was funded by the U.S. Department of Housing and Urban Development. “The goal of the project was to explore how this urban Columbus Ohio neighborhood could make the production, processing, distribution, preparation, and celebration of food a catalyst for urban re-development in the Weinland Park neighborhood” (Fox, et. al., 2015). Located near the OSU main campus, Weinland Park has roughly 4,500 residents, and many struggle with poverty, unemployment, and crime. Since the community decided to choose food as the focus of the neighborhood transformation, OSUE educators were able to take a leadership role in the revitalization project. “Extension educators set the stage for stable relationships, inter-organizational linkages, and feedback loops upon which localized food systems could be built” (Fox, et. al., 2015).

After assembling a multidisciplinary team, OSUE educators took several steps to create an educational component of this project. First, they assembled a Community Food Assessment Survey, which asked participants about their preferred learning methods, educational interests, and views on food production, business, family, and community. They also created educational
workshops, such as a Grow Your Own series, and developed a Master Urban Farmer curriculum. “To advance sustainable community economic development, the OSU Extension team developed a food-related education plan for the neighborhood. The comprehensive guide draws upon a foundation of national, state, and local Extension research-based programming” (Fox, et. al., 2015). The Extension team released a publication entitled *Learning about Food in Urban Communities*, which included an education plan with four primary objectives: 1.) Food Production (sustainable food production practices and food production capacity); 2.) Food and Business (business start-ups, employment, and investment) 3.) Food and Family (healthy behaviors and health indicators) 4.) Food and Community (social, environmental, and economic conditions) (Fox, et al., 2015).

Similar initiatives have occurred in Cleveland, where community organizations and OSUE educators are also collaborating to bring healthy food to low-income residents. OSUE in Cuyahoga County collaborated with the New Agrarian Center (NAC) to develop City Fresh, a program that provides local food at “fresh stops” in low-income neighborhoods (Ohri-Vachaspati, et. al., 2009). The steering committee also included representatives from Heifer International, Innovative Farmers of Ohio, and the Cleveland Department of Public Health. “The main objective of the program was to create a local self-sustaining food system, connecting rural and urban growers with new markets and existing programs to help improve access to fresh locally grown produce in low-income neighborhoods” (Ohri-Vachaspati, et. al., 2009).

The City Fresh study analyzed the consumption of vegetables and fruits and the effectiveness of a Market Gardener Training Program. A higher number of participants reported being able to purchase fruits and vegetables after the intervention, and a larger increase was observed amongst the low-income participants versus those not categorized as low-income...
(Ohri-Vachaspati, et. al., 2009). The Market Gardener Program specifically attempted to recruit underserved populations, including women, minorities and low-income residents, and results indicated that three-fourths of participants were either female or African American. The opportunities ranked most highly within the training program included “the seed grant program, the summer workshop series, urban growers’ network, and individual technical assistance” (Ohri-Vachaspati, et. al., 2009). Although some incomes were small during the first and second year, most participants indicated that they expected their production and profits to grow over the next few years. Some of the primary challenges faced by participants included a lack of access to land, water, and capital (Ohri-Vachaspati, et. al., 2009). The project was largely funded by a grant from the USDA Community Foods Program, but according to the researchers, other sources of support are available for Extension educators interested in starting a similar initiative. “Extension professionals working in communities where similar grant dollars are not available may be able to partner with local growers and other social entrepreneurs to tailor existing Extension programs to improve access to fresh, local, healthy, affordable food” (Ohri-Vachaspati, et. al., 2009).

Farm to Institution

Raison (2015) explored the potential for Extension educators to expose hospitals to the benefits of local food purchasing. In an online survey, foodservice directors were asked about their knowledge of and interest in using local foods, opportunities or barriers to purchasing, and their knowledge of Extension and its local food programs. While over three-fourths of the hospital foodservice directors had knowledge about the local food movement, “only 57.7% were currently using local foods in their operations” (Raison, 2015). The study also revealed that a low number of hospitals had established gardens or other local food related programs.
“Knowledge of government programs to help hospitals and the USDA’s support of local food use in hospitals was the lowest, with only 19.5% and 15.6%, respectively” (Raison, 2015). However, slightly over half (54.5%) of the participants expressed an interest in receiving assistance from Extension educators in finding local food purchasing opportunities, while 53.5% are interested in assistance with marketing local items in their cafeterias and 50.5% would like help developing employee wellness programs that feature local foods (Raison, 2015).

Although the needs in hospitals may differ from the traditional farm to institution approach, the survey results indicate an interest from food service directors in getting involved with local food purchasing opportunities (Raison, 2015). Although the study was based in Ohio, Raison explained, “There are many similarities among the U.S. land-grant university Extension systems, and there are similarities in healthcare systems across the country as well. Thus, opportunities for action, outreach, and programming certainly exist in other locations” (Raison, 2015). The study suggests that Extension personnel should consider developing new outreach techniques and partnerships based on the opportunity to create and further develop farm to hospital programming. Potential training programs include local food safety issues, liability insurance, distributor programs and how to source and purchase (Raison, 2015). The study also suggests reaching out to community partners who may offer outside expertise in developing these relationships with hospitals. According to Raison, such local food initiatives “provide opportunities for Extension educators to expand networks that create new partnerships benefiting hospitals, healthcare institutions, local farmers, and food production/distribution operations coalescing in triple bottom line results that deliver positive social, environmental and economic outcomes” (Raison, 2015).

eXtension Communities of Practice
Along with some of his colleagues, Raison started a Community, Local and Regional Food Systems (CLRFS) eXtension Community of Practice (CoP), which has grown to be the second largest network in the system due to a high level of interest. eXtension CoPs allow Extension educators from across the country to communicate and share information with each other, as well as their clients and other individuals with a shared interest. Approximately 68 communities exist, and the topic areas range from disaster issues to energy, environment, farm, family, youth, pest management and health and nutrition. According to Raison, Fox, and D’Adamo-Damery (2014), the CLRFS CoP was created in 2012 and grew to be the eighth largest within two years. According to their study, “The eXtension system has over 17,000 user accounts. Each month, approximately 2,000 people actively participate in some manner. That means you have the potential of reaching a lot of people with a lot of expertise specific to the topic/area you’re searching” (Raison, Fox, and D’Adamo-Damery, 2014).

In 2014, the CLRFS CoP had over 275 members, including Extension educators, research scientists and practitioners. “It is designed to provide information and networking opportunities for educators, community-based practitioners, policy makers, farmers/growers, families, and those individuals involved in building equitable, health promoting, and economically balanced food systems” (Raison, Fox, and D’Adamo-Damery, 2014). According to Raison, Fox, and D’Adamo-Damery (2014), CoPs are working to: “1.) create new accessible public content; 2.) compile and summarize information published by our member organizations; and 3.) offer a unique, online meeting place for people with diverse interests and affiliations to share information and learn from each other.” Along with providing scholarly articles and relevant research-based information to the public, they provide an “Ask an Expert” webinar series. Users
are also able to post questions and typically receive several responses from specialists, researchers or practitioners within the next 24 hours.

**Conclusion**

Raison believes land-grant institutions will continue to become more invested in local foods due to the growing demand in this field. He stated, “There is just too much interest in health and sustainability and where our food comes from and teaching these lessons to subsequent generations… and so I think Extension has a huge role.” In order to help more practitioners get involved in the local foods movement, Raison stated, “We’re working on a national certification program that would help food systems workers get some additional credentialing, for example, so they could improve their outreach, their teaching, their communication, their programming, their approach even to food systems and communities.”

During a meeting with local food system practitioners and Extension Educators at Iowa State University’s Leopold Center, Raison observed that the greatest request amongst these individuals was assistance with administration, management, team building, planning and networking.

As networks like eXtension continue to grow, more practitioners and other individuals outside the university will have access to resources that will allow them to develop administrative, planning and management skills, which can be applied to local food system development. In studies conducted by researchers and OSUE educators, the overarching theme has been local food systems as a form of economic development, and low-income neighborhoods have seemed open to these interventions. By partnering with other community organizations, OSUE educators are able to better understand the needs of these citizens. These partnerships also provide OSUE with the diversified skills and knowledge of those working outside the university, addressing various complexities of local food system development.
6.5 Purdue University

As the Purdue Local Foods Coordinator, Jodee Ellett works with educators in many different fields across both central campus and Extension, such as the small farms, food safety, urban agriculture, and nutrition programs, as well as the Purdue Center for Regional Development. Although she is the only staff person in Extension designated as a Local Foods educator, she recently hired a program assistant and collaborates with other teams on projects in this area. Her current projects include building a shared use kitchen funded by a Sustainable Agriculture Research and Education (SARE) grant, creating a curriculum for rebuilding local food systems, and working with County Offices to host a Local Food Summit.

Ellett frequently works with faculty members who have an interest in applied research, education and local foods, collaborating on grants or program development, but she claims it can be challenging for them to receive “credit” for this work if they do not have an Extension appointment. Rhonda Phillips, the faculty lead for the Purdue Local Foods Program, is a professor in agricultural economics and has conducted research on the connections between food cooperatives and community development. According to Phillips (2012), “Food is central to community well-being and, as such, represents a nexus for exploring both community development and cooperative development processes and outcomes.” This concept of local food systems as a form of community development has become central to the work of Extension educators, as communities demand increased access to healthy foods and farmers search for increased economic opportunities. Over the three years that she has worked in this position, Ellett has noticed farmers facing a great deal of instability across their markets, which has caused her to focus on developing alternatives, such as food hubs, small grocers, restaurants, or online opportunities that may be more profitable for farmers than weekly markets.
Outreach and Education

In order to help farmers locate and enter more stable markets, Extension regularly hosts educational workshops focused on these topics. During the winter of 2016, they hosted four wholesale success workshops, an Indiana Small Farms Conference, and a Horticultural Conference and Tradeshow. According to Ellett, the wholesale success workshops teach farmers how to enter wholesale markets, maintain their business models, and increase capacity to draw new customers and generate more robust profits at farmers markets. They are also working with the Hoosier Farmers Market Association to host a farmers market forum, which will focus on marketing strategies. She has encouraged farmers to communicate and learn from each other through joining the Indiana Food Hub Network, which has been educating members on how to start a food hub or expand their markets. Ellett also recently started working with a local entrepreneur to create a virtual farmers market, which will allow farmers to sell their products online. According to Ellett, the tentative launch is scheduled for the end of 2016.

Small Farm and Sustainable Agriculture Team

According to their website, “The Purdue Small Farms and Sustainable Agriculture Team formed several years ago to support the growing number of small and alternative farming operations. The team is a collaborative effort, engaging researchers, educators, and farmers to help foster this diverse community” (Small Farms, 2016). These educators meet a few times over the year to discuss current projects and future goals. In 2013, they hosted the first Indiana Small Farm Conference, which had over 200 attendees and 45 sessions. In 2016, the Conference featured many different farmers from across the state, as well as a farmer panel. The sessions included farm management, vegetable production, livestock production, on-farm energy and
equipment, farm financing, flower farming, and restoration agriculture. The fifth annual Indiana Small Farms Conference will be held in March 2017.

The Small Farms Team also specializes in organic agriculture, animal production and crop resources. In 2015, they launched a Beginning Farmer and Rancher program that was funded by the U.S. Department of Agriculture to increase the number of new farm businesses across the state and provide assistance to these farmers. This included five sessions in which participants were provided with information on beginning farmer resources before touring a variety of different local farms, including a creamery, a “U-Pick” urban farm, a hydroponic operation, beef, pork, and egg production, cover crops, and high tunnel production. The discussion sessions included uses of cover crops; benefits and challenges of hiring interns; marketing to institutions, such as hospitals and schools; building community partnerships with local businesses and organizations; and support services for new farmers (Pack, 2015).

*Sustainable Student Farm & Purdue Dining Services*

In 2011, Purdue launched a five-acre Sustainable Student Farm, which provides both paid internships and volunteer opportunities to students. Purdue also has a new major called Sustainable Food and Farming Systems, which includes coursework that students carry out on the farm. Students in the “Small Farms Experience” courses manage the farm along with volunteers from the Purdue Student Farm Organization, part-time undergraduate staff and full-time summer interns. The Purdue Student Farm website states, “Our educational work is all about food: how to grow it on a small, ecological scale, the art of making produce for profit, how to eat vegetables in delicious, nourishing ways, understanding how food intersects with environment, economy, and community” (The Student Farm, 2016). According to Ellett, Purdue Dining Services regularly purchases produce from the farm due to strong interest from a chef at
Ford Dining Hall. At one point, Ellett explained, the students had over 800 pounds of eggplants that needed to be used, and the chef purchased each one. The student farm sells produce on campus and at the West Lafayette Market, and they take all of their leftover produce to Ford Dining Hall after the campus market.

In 2015, the Student Farm started a farm share program, which is modeled after community-supported agriculture. By purchasing a $250 credit, members have access to fruits and vegetables grown at the farm for 10 weeks, while the money supports the continued operation of the farm and education of the students working there. Members can purchase their items on the student farm website until their credit runs out, and three different pick-up locations are available on campus during the afternoons (Paul, 2015).

Local Food System Development

According to Ellett, there is a division in Extension between educators working directly with growers to provide hands-on training and those who focus on community development. However, in order for development to continue, these different elements must form a system. She explained, “We have a role in Extension to support system development… The way to keep local food systems here for the long term is to make them indispensible to each other. Make these various components of the food system absolutely indispensible.” As land-grant institutions become more involved in local food system development, Ellett believes research scientists and educators must recognize the many reasons behind general eating habits. She stated, “There’s all the social elements of what food is in our culture, and that’s what I think the land grant institutions are a little more challenged to work and understand, that “people” part of the food system.” As Extension moves forward in this field, Ellett believes that recognizing the personal
and cultural connections people have to food is essential to building the capacity to further develop local food systems.

Knowledge Sharing in Extension

Ellett expressed significant gratitude for her Local Food colleagues across the country. She stated, “I don’t think working with people in other states is very commonplace for Extension, but in local foods, it is. So I know my colleagues in many other states. Up until now, there hasn’t been an academic conference for us.” According to Ellett, many Local Food educators attend the National Association of Community Development Extension Professionals (NACDEP) conference since this field embraces local food system development. However, the recent creation of the Journal of Agriculture, Food Systems and Community Development led to the North American Food Systems Network, which is quickly developing as an online community and professional development platform for those working in this field. Ellett stated, “There’s a lot of work being done by Extension professionals to build Extension’s capacity to work in local food systems… building our capacity to have this as a real sector for Extension.”

Conclusion

Although Ellett expects their local foods program to grow, she is trying to be strategic about which projects she focuses on each year. Currently, she is working on building a shared use kitchen with the funds they received from a SARE grant. For her next project, she plans to focus on expanding farm to school across the state and expanding farmers’ markets, including training sessions for growers on direct marketing strategies for their online market. While the Local Foods program at Purdue is smaller than those at the other Midwest land-grant institutions included in this study, it appears that other Extension programs, such as small farms, urban
agriculture, and community development, take local foods into consideration when working on their projects.

Similar to Ohio, some of the local foods work has fallen under the umbrella of community development. Unlike Ohio, their Extension educators do not seem to have published many reports focused on local food system development or research with farmers on their websites or the *Journal of Extension*. Their small farms website does, however, have informational materials and brochures for their clients. As the Local Foods Coordinator, Ellett collaborates with outside organizations to host workshops and develop projects, such as their virtual farmers’ market. While she has clearly tackled many different initiatives, the goal of working as a system may be challenging without a central organization focused on small farms and local food systems development, such as the Leopold Center or the MSU Center for Regional Food Systems. She mentioned finding support from her colleagues in other states, which University of Illinois Local Food Systems and Small Farms educators mentioned doing when they could not locate resources from the central campus. Similar to the programs at the University of Illinois, individuals and small groups are working toward improving local food education, but resources can be difficult to obtain without a primary unit devoted to this work.

### 6.6 Program Comparison

The following chart analyzes various components of the programs at each university. Iowa, Michigan and Wisconsin have centers specifically devoted to this research, but Illinois, Ohio and Purdue do not. Therefore, Extension programs related to local foods were analyzed at these universities. At institutions with local and regional food centers, the findings represent components of these centers only, rather than an outside Extension program. Information included in this chart is based on findings of this study, which occurred in 2016.
Table 6.1

<table>
<thead>
<tr>
<th>Program</th>
<th>Age (Est.)</th>
<th>Staff Size</th>
<th>Farmers designing research</th>
<th>Beginning farmer training</th>
<th>Farm to School</th>
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<td>11</td>
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<td>No</td>
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<td>Iowa Leopold Center</td>
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<td>8</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
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<tr>
<td>Wisconsin Center for Integrated Agricultural Systems</td>
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<td>Michigan Center for Regional Food Systems</td>
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<td>No</td>
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<td>Yes</td>
</tr>
<tr>
<td>Ohio Local Foods Signature Program (Extension)</td>
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<td>Yes</td>
</tr>
<tr>
<td>Indiana Local Foods Coordinator (Purdue Extension)</td>
<td>2013</td>
<td>1</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

**Farmers Designing Research**

Although the Leopold Center has the smallest number of staff, Practical Farmers of Iowa complements their work by focusing on farmer-led research and beginning farmer training. They are the only state included in this study that appears to have a non-profit deeply involved in research being designed by farmers. The Center for Integrated Agriculture’s “Citizens Advisory Council” is comprised of sixteen Wisconsin farmers, and this group regularly works with CIAS staff and faculty associates to create research and training projects that will benefit small and
medium-sized farms across the state (Citizens, 2017). The remaining programs do not appear to have farmers designing research projects.

**Beginning Farmer Training Programs**

Michigan’s Emerging Farmers Program is a Beginning Farmer and Rancher Development Project funded by the United States Department of Agriculture (Michigan, 2017). It is a collaborative effort between the Center for Regional Food Systems, Michigan Food and Farming Systems, and Michigan State University’s Student Organic Farm. It includes workshops, training, and tools to assist farmers in receiving funding for their projects. UW-Madison’s Center for Integrated Agricultural Systems offers a Wisconsin School for Beginning Dairy and Livestock Farmers that includes classroom sessions, internships, and farm tours. Their classroom instruction, which addresses the business and financial aspects of farming, runs from November through March, and their internships generally occur from April through July. Illinois Local Food and Small Farms Educators offer beginning farmer workshops that address business entities, marketing plans, and record keeping.

**Farm to School**

In Wisconsin, Michigan, and Ohio, Extension runs the state’s farm to school program. In Indiana, the state lead for farm to school is in the Department of Education, and in Illinois, the state lead works for a non-profit called Seven Generations Ahead. In Iowa, the state lead is based in the Iowa Department of Agriculture and Land Stewardship. However, Iowa Extension works with schools to provide resources on topics like cafeteria coaching, cross-age teaching, and school gardens. UW-Madison has a farm to school outreach specialist who networks with stakeholders across the Great Lakes region and works to connect farmers with local schools. Along with farm to school, Michigan has coordinated a farm to institution and food hub network.
CHAPTER 7: CONCLUSION

7.1 Challenges and Opportunities in Local Food Education

While meeting with the many different stakeholders involved in this process, several major themes emerged surrounding the lack of university involvement in local food education. Although both universities and farmers across Illinois have been facing a great deal of economic pressure in recent years, which has led to researchers focusing more on grant-funded projects that will bring in the most revenue, investment in small farm and local food education programs could become an economic opportunity for universities. By honoring the land grant mission and its responsibility to local farmers and taxpayers, universities could become more relevant across the community, causing people to view it as a resource rather than an alienated entity. Over the course of this research, these themes related to local food education barriers were clearly evident.

Challenges for Farmers

Across chapters, participants raised issues addressing the lack of support for farmers. Firsthand accounts from farmers were very telling as to their sense of isolation from the university. Early pioneers of the sustainable agriculture movement in central Illinois explained that farmers requested assistance from the university regarding alternative and organic farming techniques during the 1980s and 90s, but discovered that researchers were not interested in this type of work. At a time when farmers needed the university the most, they felt neglected and turned away from this institution. If researchers were willing and able to participate in this work with enthusiastic farmers, it could be beneficial for both the academic sphere and the community. By conducting research on the trials that farmers are running with new alternative farming techniques, researchers could apply their skills and expertise to helping farmers develop more efficient growing methods, benefitting others in the community and adding to the literature in
this field. According to Walter, Wander, and Bollero (1997), on-farm participatory research should allow farmers to play a role in framing a research design that addresses both their questions and the disciplinary questions of the academic researcher. This input is helpful to the scientists, as they explain: “Farmers further direct the researchers’ efforts by asking questions and suggesting solutions to anticipated problems” (Walter, Wander, and Bollero, 1997, 66-67).

Similarly, Wes and Leslie at Prairie Fruits Farm have received little attention from the university, although they would be very pleased to have researchers and Extension educators on their land. Ray Ropp from Ropp Cheese Farm expressed the need for farmers to receive more training on marketing and business techniques, which is offered by LFSSF Extension educators, but may be less frequent and robust due to the small number of staff and resources.

Challenges for Educators

Across chapters, it was also clear that faculty and educators who wish to work with farmers face their own difficulties when trying to carry out such projects. Although she has conducted her own research on the benefits of organic farming, Michelle Wander explained that universities have been hesitant about endorsing organic and local food research, and she has faced challenges when trying to work on projects that would make more local products available on campus. According to Wander, university representatives are not willing to accept the benefits of locally produced food and still view this as a “biased” research topic. Although Sam Wortman was able to rent plots from local farmers, which allowed his students to conduct on-farm research within the community, he faced challenges when trying to provide presentations at Extension events, due to this work being outside his job description. In both cases, these professors have a strong desire to work with farmers and offer their services, but experience pressure when trying to meet all the demands of their position with the university.
Local Food Systems and Small Farms Extension Educator Deborah Cavanaugh-Grant revealed that she developed connections with colleagues across the country to find information on sustainable agriculture practices due to the lack of information coming from the university on this topic. After spending 30 years working with Extension, she believes the university does not value this branch of the land-grant system, and described this organization as being in general decline over the past three decades. According to Cavanaugh-Grant, many nonprofits, such as the Illinois Stewardship Alliance, Spence Farm Foundation, Family Farmed, and Seven Generations Ahead, have been created in response to the lack of support from the university. She has also seen this happening at community colleges, where faculty are becoming more involved in local food initiatives and filling the gap left by land-grant institutions. Local Food Systems and Small Farms Educator Bill Davison suggested the University of Illinois create its own center for regional food systems. He believes there are many people working on different aspects of the food system, but that Illinois needs an organization focused on whole system development. Extension educators at Midwest land-grant universities that do have these centers explained that farmers also need an organization devoted solely to their needs rather than the production of research. If more Extension educators were given the freedom to work directly with farmers, it is possible that universities could model a program after Practical Farmers of Iowa, which may assist in rebuilding relationships with local farmers. By assigning Extension personnel to work as Farm to School educators, universities could also provide support for local schools that are struggling to develop these programs, such as the Garden Club at Irving Elementary.

According to Anu Rangarajan, academic professional in the Department of Horticulture at Cornell University, this issue has been occurring at other land-grant institutions as well. Explaining her view of land grants, she stated, “For me, the mission means working with groups
that have been underrepresented in the traditional educational scheme. Cornell hasn’t made itself
democratic and widely available with respect to organic growers. The land-grant system as a
whole hasn’t done that” (Peters, Alter, Schwartzbach, 2012, 302). Despite these challenges,
colleagues who have been able to establish strong relationships with these individuals have
inspired her. She stated, “There are people that have the love and respect of the group of farmers
they support. I hope that I can have that someday, that same kind of relationship where everyone
calls me by my first name” (Peters, Alter, Schwartzbach, 2012, 302).

**University Barriers**

Due to the high level of competition for federal funding, it can be difficult for faculty to
gain approval for large-scale projects. Therefore, if a faculty member were approved to work on
building a center for regional food systems, it would likely start small, and they would
potentially be required to apply for grant funding each year. This could place a great deal of
pressure upon a faculty member who already has high levels of responsibility. The current
economic circumstances in Illinois also place a burden upon campus administrators to invest in
projects that will bring the greatest amount of revenue into the university. Therefore, the faculty
member would also need to demonstrate the economic benefits of this project. Being a research
institution, those working in sustainable agriculture also must compete against those working in
biotechnology and commercial agriculture, which tends to garner more funding.

The prominence of industrial agriculture in Illinois due to companies like Archer Daniels
Midland, John Deere, Caterpillar, Sara Lee, and Monsanto has influenced agricultural research
across the state as well. Interview participants mentioned that the Illinois Farm Bureau, the
Illinois Corn Growers Association, and the Illinois Soybean Association are also strong political
forces that have the power to dictate research being conducted on a state and national scale.
7.2 Integrated Agricultural Education

In order to support small farms and local food systems, this dissertation argues that land-grant institutions must embrace the concept of “integrated agricultural education,” which involves reconnecting with local farmers and building relationships across the community. During the late 1980s, John Gerber served as the Associate Director of the Agricultural Experiment Station at the University of Illinois. Over time, he met with many farmers who were participating in study circles and attempting to support each other through periods of economic stress. He stated, “My task was to try to change the hearts and minds of the academic community, to try to recognize the value of what we call indigenous knowledge, and I don’t know how much progress we made.” While working as a University of Illinois Extension Specialist, Gerber focused on vegetable growers throughout the state, and he worked to create positive relationships through participatory research. He stated, “I would spend Monday and Tuesday going through the northern loop in northern Illinois, and Thursday and Friday doing the same thing in southern Illinois, and we probably had thirty trials out in farmers’ fields all over the state.” Although some experiments were more successful than others, he added, “It was an effort to engage farmers where they were at, and I thought that worked pretty well.” In order to establish trust with the farmers, Gerber stated, “I spent a lot of time creating a respectful relationship, and based on that, I could do field research with farmers… and nobody ever complained about money or crop loss or any other risk. Without that, it just doesn’t work.”

Explaining a concept known as the “intimate expert,” Gerber described the importance of relationships that Extension educators build within their communities. He stated, “You have a lot of skill, and you have something to offer, but you need to be intimate. You need to be part of the community. You need to be trusted, and that is why Extension is so beautiful.” Now working as
a professor and academic adviser for Sustainable Food and Farming students at the University of Massachusetts, Gerber describes the differences in culture between New England and the Midwest, including the sizes of farms, environmental ethics, and politics. While working at the University of Illinois, for example, Gerber faced challenges in carrying out agricultural research focused on social justice and environmental sustainability. Describing his relationship with the Farm Bureau, he stated,

“They wanted me out, and they called the dean to get rid of me. They did not want the kinds of things that I was doing there, particularly around social justice questions. They could deal with the environmental stuff because they sort of had to, but when we brought up social justice questions about workers’ rights and access to education for immigrant populations… The Farm Bureau did not like that at all. But here, that’s part of the fabric of New England.”

As the demand for farm-based education continues to grow, Gerber explained, non-profit organizations are beginning to focus more on addressing this public need, particularly for at-risk populations. For example, the Farm-based Education Network, which includes members from Massachusetts, is a community education program that provides learning experiences on farms. Gerber stated, “It’s non-formal education on the ground, led by farmers… There’s action, excitement, energy, youth… just things that I’m not seeing at the university.” Describing this movement toward more holistic, on-farm education, he stated,

“In the late 80s and early 90s, the most interesting questions were coming out of people with an education background, about the nature of science, and the purpose of education, and all of the stuff that was really putting a lot of pressure on the College of Agriculture at that time, collegial pressure, but just really great questions.

According to Gerber (2011), “the next phase in the development of the public university will be a community-focused learning network that extends access to all citizens through university outreach and online instruction in the communiversity of the 21st century.” Describing the shift away from its original mission, Gerber (2011) argues,
“The ‘land grant ideal’ of making useful knowledge available to all Americans through affordable education, extension to the community, and interrelated practical research, has been tarnished by a limited view of scholarship that values research over the other two public university functions.”

As criticism geared toward these institutions has increased while funding has decreased, Gerber (2011) believes public universities have the opportunity to transform their agendas, focus on outreach across their communities, and become more innovative through utilizing modern communication technologies. Gerber (2011) states,

“The land grant ideal evolved over time to serve the practical needs of a growing nation by integrating research and extension into the university experience and making that experience available to previously excluded women and men. I believe the next expression of the land grant ideal will fully extend the university to those citizens not in residence on its many campuses. It will do so in ways which further integrate research and teaching through online societal networks.”

According to Gerber (2011), new communication technologies will allow researchers to connect with and learn from people who have been socially and geographically disconnected from the university, and educators will be able to teach students about different ways of life. Gerber (2011) states, “As the concept of university is replaced by the communiversity, advanced learning will be available to those formerly excluded from college by financial, space and time constraints.” Although Gerber (2011) is uncertain about whether most universities will participate in this movement, he believes those that do not embrace this expanded vision of inclusion will quickly lose support and suffer:

“While their current control over credentialing and a thousand years of tradition may partially protect some universities from immediate crisis, the pattern of increasing competition, public distrust, and declining support is likely to continue unless a new defining vision for public universities emerges. Extending current trends suggests that alternative futures for the land grants will be slow decline at best, or dramatic cuts at worst. On the other hand, by expanding the definition of ‘students’ to all citizens, and maintaining a focus on serving the public good through affordable education (both online and in classroom), university-wide outreach and interrelated research, a new, revitalized communiversity may emerge.”
Gerber (2011) also states that education will become more democratic in a communiversity, in which knowledge will be preserved through both written (published) and community-based (online) formats and the transmission of knowledge will occur through a sharing process between teachers and learners. Along with students and educators acting as co-learners, Gerber (2011) argues that communiversities will abandon the notion that knowledge must be validated by the university to be considered “true.” According to Gerber (2011),

“There is a long tradition in agricultural extension, for example, that university experts make recommendations that farmers are expected to implement. Agricultural extension educators have done this with the full authority of science, the arrogance of academia, and a nearly 100-year old federal law that mandates Extension educators not only aid in the diffusion of knowledge but… ‘encourage the application of the same.’ These 20th century assumptions must change.”

Although Gerber (2011) agrees that universities should provide technical expertise, he also argues that universities should promote community-focused and collaborative learning through formats like study circles, societal networks and online forums, while respecting the “student’s” source of knowledge. Explaining the ways in which academics are trying to engage with off-campus communities, he states,

“Outreach educators for example, who use participatory research and education techniques, acknowledge the contribution of all learners in the inquiry process, those from the university and those from the community. All participants are expected to help identify and define problems from their own perspective, suggest alternative solutions, test those solutions, and interpret results, thus capturing the synergy of both the scientific and the lay learning experience. The outcome of participatory learning is not only community-based knowledge and scholarly publications, but empowered community members more likely to act on their new knowledge” (Gerber, 2011).

Some methods of community-focused learning that have emerged include online discussion groups, listserves, and RSS (really simple syndication) web feeds that provide access to professional journal articles, blogs, audio and video files focused on specific issues that individual groups are researching.
Gerber also suggests that American communiversities adopt a model known as the “Dutch science shop,” which allows citizens to access public universities through community-based offices. While visiting these “shops,” citizens gain and share knowledge, design their own research focused on issues of personal interest, and provide opportunities for students to participate in service learning or internships. Along with providing a space for community-focused learning, Gerber (2011) argues this model could encourage citizens to become more involved in democratic activities and public welfare. According to Gerber (2011), these centers “offer a public space for citizens to build self-respect, group identity, and gain public skills, while encouraging local learning and action. These centers would provide land grant universities with the added benefit of engaging scholars in the public sphere.”

7.3 Future Research

Although the Midwest land-grant institutions with centers for regional food systems and sustainable agriculture are bringing increased attention to the relevance of local foods in their communities, most of these organizations do not appear to be directly connecting with existing farmers. While a significant amount of research is being produced, it is not clear that results are being communicated or are applicable to individual farmers. Organizations like Practical Farmers of Iowa (PFI), however, are carrying out on-farm research projects led and designed by local farmers, and the PFI staff members publish around 30 reports from these studies each year. Their Local Foods Program aims to build relationships between farmers and non-farmers across the community. According to their website, “we strive to foster strong communities based on diverse ties between farmers and non-farmers by organizing events and connecting non-farmers with farmers near them” (Member Priorities, 2017).
It is common for Extension educators to host workshops for community members, such as farmers, who are interested in learning about research produced by the university. However, it is rare to see members of the university engaging with farmers in a way that allows them to create a collaborative learning environment, such as PFI or the study circles organized by former Extension specialists like John Gerber and Deborah Cavanaugh-Grant. Those who have taken these initiatives have clearly expressed struggles with working in a system that does not value sustainable agriculture research and lacks the freedom of non-profit organizations like PFI. However, some land-grant institutions are now openly expressing support for local foods and sustainable agriculture, designating funds and giving research priority to such initiatives, which may create opportunities for faculty and Extension educators who wish to work more directly with farmers and community members to research practical solutions to local food system development issues. In 2014, the University of California (UC) President Janet Napolitano launched the Global Food Initiative (GFI), a concept originally introduced by Alice Waters, founder of the Edible Schoolyard Project and owner of the Chez Panisse Restaurant and Café (Mitchell, 2015). According to Mitchell (2015), there were originally some concerns with the size of the initiative, which spans from issues of global hunger and the environmental consequences of pesticides to campus sustainability, farmers markets and local food pantries. Since the launching, the GFI has formed 20 working groups to establish guidelines for programs throughout the system; hosted events, lectures, and classes; provided funding to each campus to support student food security; and provided fellowships to students conducting research on food-related issues. Although some have expressed concerns about whether GFI will continue to be funded, as the money has come from the President’s Initiative Fund, Napolitano has stated that
she looks forward to having faculty, experts and students collaborating together in the continuous expansion of this initiative (Mitchell, 2015).

By openly announcing this initiative and their support for global food research, UC may be setting a precedent that other land-grant institutions could follow. Although they have outlined many goals, this movement illustrates the role of local foods in addressing a much larger global food crisis, which land-grant institutions have a responsibility to work toward solving. This will also create opportunities for researchers to work directly with small farmers in discovering solutions to challenges in our current agricultural climate. In future research, I would like to explore the possibility for land-grant institutions to create an organization based on the PFI model. This could potentially be part of a Local Food Systems and Small Farms Extension Program, but also open to faculty and students interested in having direct contact with local farmers. Furthermore, I would like to analyze the potential of land-grant institutions to support small farmers through the creation of a local food hub, which the USDA describes as “a business or organization that is actively coordinating the aggregation, distribution, and marketing of source-identified locally or regionally grown food products from primarily small to mid-sized producers” (Burham, 2011).

Through the creation of a program like PFI, land-grant institutions could provide direct support to local farmers while also working to make local foods more available across the community. Although universities have expressed an interest in purchasing local foods, many have faced logistical challenges in doing so. By investing in a local food hub, universities could more easily access local foods, while also making these products more available to the community and providing farmers with convenient markets. Land-grant institutions could potentially devote spaces near their research farms to the development of a food hub. However,
alternative spaces could be explored by partnering with non-profit organizations and community agencies focused on local foods and sustainable agriculture. At other Midwest land-grant institutions, these networks and collaborations appear to be quite productive.

As part of the PFI model, the university could allow local farmers to test new growing methods on their experiment stations, giving faculty, students, and community members an opportunity to work together on research plots. If provided with a university-sponsored food hub, students and other members of the university could also meet with local farmers who bring their products to this central location and learn about how their farming practices and land may be unique from others in the region. By offering more services directly to farmers, the university can create educational opportunities for campus and the community to become familiar with local foods, the history of the land, and the lifestyle and culture of those caring for it. Without such programs, the future of small farms appears rather dismal. At land-grant institutions, educators must accept responsibility and work to protect both our land and educational resources.
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**APPENDIX A: PRAIRIE FRUITS FARM SURVEY**

**Prairie Fruits Farm Educational Tour**

**Student Survey**

### Background Questions:

1.) Was this your first farm tour?
   - ☐ Yes
   - ☐ No

2.) Have you tried food from any central Illinois farms before?
   - ☐ Yes
   - ☐ No

3.) Have you ever thought about where your food comes from?
   - ☐ Yes
   - ☐ No

4.) After this tour, would you like to know where your food comes from?
   - ☐ Yes
   - ☐ No

5.) Where does your family generally purchase groceries?
   - ☐ A Farmer’s Market (in season)
   - ☐ Natural food stores
   - ☐ Grocery chains
   - ☐ Convenience stores
   - ☐ I don’t know

### Learning Preferences:

6.) I like learning by: *(Check all that apply)*
   - ☐ Taking quizzes and tests
   - ☐ Listening to classroom lectures
   - ☐ Watching videos
   - ☐ Hands-on activities
   - ☐ Reading books or articles
   - ☐ Other

7.) I learn a lot when teachers take my class outdoors.
   - ☐ Yes
   - ☐ No

8.) I enjoy interacting with classmates during outdoor activities.
   - ☐ Yes
   - ☐ No

### Tour Questions:

9.) Which activity did you learn the most from during the tour?
   - ☐ Viewing the cheese-making
   - ☐ Sampling cheese, fruits & gelato
   - ☐ Visiting the garden
   - ☐ Learning about milking goats

10.) After this tour, would you like to try more local foods?
    - ☐ Yes
    - ☐ No

11.) After this tour, would you like to visit more farms?
    - ☐ Yes
    - ☐ No

12.) Would you like to work or volunteer on a farm in the future?
    - ☐ Yes
    - ☐ No
APPENDIX B: IRB APPROVAL LETTERS

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

Office of the Vice Chancellor for Research
Office for the Protection of Research Subjects
528 East Green Street
Suite 303
Champaign, IL 61820

March 16, 2015

Pradeep Dhillon
Educational Policy Studies
377 Education Bldg
1310 S Sixth St
Champaign, IL 61820

RE: Evaluation of School Tours at Prairie Fruits Farm
IRB Protocol Number: 15644

Dear Dr. Dhillon:

This letter authorizes the use of human subjects in your project entitled Evaluation of School Tours at Prairie Fruits Farm. The University of Illinois at Urbana-Champaign Institutional Review Board (IRB) approved, by expedited review, the protocol as described in your IRB-1 application. The expiration date for this protocol, IRB number 15644, is 03/15/2016. The risk designation applied to your project is no more than minimal risk. Certification of approval is available upon request.

Copies of the attached date-stamped consent form(s) must be used in obtaining informed consent. If there is a need to revise or alter the consent form(s), please submit the revised form(s) for IRB review, approval, and date-stamping prior to use.

Under applicable regulations, no changes to procedures involving human subjects may be made without prior IRB review and approval. The regulations also require that you promptly notify the IRB of any problems involving human subjects, including unanticipated side effects, adverse reactions, and any injuries or complications that arise during the project.

If you have any questions about the IRB process, or if you need assistance at any time, please feel free to contact me at the OPRS office, or visit our Web site at http://www.irb.illinois.edu.

Sincerely,

[Signature]

Anita Balgopal, PhD
Director, Office for the Protection of Research Subjects

Attachment(s)

c: Hannah Tomlin
October 9, 2015

Pradeep Dhillon
Ed Organization and Leadership
377 Education Bldg
1310 S Sixth St
Champaign, IL 61820

RE:  Know Your Food: An Evaluation of University Local Food Initiatives
     IRB Protocol Number: 16260

Dear Dr. Dhillon:

This letter authorizes the use of human subjects in your project entitled Know Your Food: An Evaluation of University Local Food Initiatives. The University of Illinois at Urbana-Champaign Institutional Review Board (IRB) approved, by expedited review, the protocol as described in your IRB-1 application. The expiration date for this protocol, IRB number 16260, is 10/07/2016. The risk designation applied to your project is no more than minimal risk. Certification of approval is available upon request.

Copies of the attached date-stamped consent form(s) must be used in obtaining informed consent. If there is a need to revise or alter the consent form(s), please submit the revised form(s) for IRB review, approval, and date-stamping prior to use.

Under applicable regulations, no changes to procedures involving human subjects may be made without prior IRB review and approval. The regulations also require that you promptly notify the IRB of any problems involving human subjects, including unanticipated side effects, adverse reactions, and any injuries or complications that arise during the project.

If you have any questions about the IRB process, or if you need assistance at any time, please feel free to contact me at the OPRS office, or visit our Web site at http://opr.s.research.illinois.edu.

Sincerely,

Rebecca Van Tine, MS
OPRS Specialist

Attachment(s)

c: Hannah Tomlin
April 14, 2015

Pradeep Dhillon
Educational Policy Studies
377 Education Bldg
1310 S Sixth St
Champaign, IL 61820

RE: Form to School: Evaluating the Impacts of Local Foods and Outdoor Education
IRB Protocol Number: 15631

Dear Dr. Dhillon:

Thank you very much for forwarding the modifications to the University of Illinois at Urbana-Champaign Institutional Review Board (IRB) office for your project entitled Form to School: Evaluating the Impacts of Local Foods and Outdoor Education. I will officially note for the record that these major modifications to the original project, as noted in your correspondence received March 30, 2015: adding child, parent, and farmer interviews at the Washington School Science Fair; and updating the application to reflect the new procedures; and providing the interview protocol and oral consent/assent scripts; and updating ALL consent/recruitment scripts to reflect the timeframe of the research activities, have been approved. The expiration date for this protocol, IRB number 15631, is 03/29/2016. The risk designation applied to your project is no more than minimal risk.

As your modifications involved changes to consent form(s), I am attaching the revised form(s) with date-stamp approval. Please note that copies of date-stamped consent forms must be used in obtaining informed consent. If modification of the consent form(s) is needed, please submit the revised consent form(s) for IRB review and approval. Upon approval, a date-stamped copy will be returned to you for your use.

Please note that additional modifications to your project need to be submitted to the IRB for review and approval before the modifications are initiated. To submit modifications to your protocol, please complete the IRB Research Amendment Form (see http://irb.illinois.edu/?q=forms-and-instructions/research-amendments.html). Unless modifications are made to this project, no further submittals are required to the IRB.

We appreciate your conscientious adherence to the requirements of human subjects research. If you have any questions about the IRB process, or if you need assistance at any time, please feel free to contact me at the OPRS office, or visit our Web site at http://www.irb.illinois.edu.

Sincerely,

Anita Balgopal, PhD
Director, Office for the Protection of Research Subjects

Attachment(s)

c: Hannah Tomlin