Gauging food provisioning, social and economic benefits of community farms for Iowa's immigrant community

Thanh Ngoc Nguyen
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Gauging food provisioning, social and economic benefits of community farms for
Iowa’s immigrant community

by

Thanh N. Nguyen

A thesis submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of
MASTER OF SCIENCE

Major: Horticulture

Program of Study Committee:
Kathleen Delate, Major Professor
Cynthia Haynes
Shannon Coleman

The student author, whose presentation of the scholarship herein was approved by the
program of study committee, is solely responsible for the content of this thesis. The Graduate
College will ensure this thesis is globally accessible and will not permit alterations after a
degree is conferred.

Iowa State University

Ames, Iowa

2020

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ABSTRACT

Community farms and gardens have shown positive impacts on enhancing sustainable agriculture and food security, especially for disadvantaged citizens. The benefits of community gardens/farms for immigrants have been extensive, and the potential for spreading this model is considerable. However, minimal data sets exist on the number, as well as the success, of these gardens/farms operating in Iowa. Through personal interviews with farmers and organizations, participatory action research, and observations, this study analyzed the impacts of community gardens/farms on Iowa immigrant communities regarding food security and safety, income stability, and educational gain. In examining the complex roles of community gardens/farms, not only on immigrant families, but also on the community, concerning primary farming motivations and background, market understanding, obstacles, and short- and long-term benefits. Findings from 36 interviews with community farm organizers (CFOs) and community gardeners/farmers (FMRs) showed that “food security” and “reconnecting with nature, culture, and tradition” were considered the most important benefits of community gardens/farms. Economic benefits (“income”) derived from community gardens/farms tended to be cited by the more experienced farmers. Farmers’ length of time in the U.S was positively correlated to their focus on economic benefits of the gardens/farms. For the five CFOs interviewed, “land access” and “financial support” were the two most cited barriers preventing long-term success of the community garden/farm. “Language barriers” were cited as potential constraints but varied between organizations and farmer participants. Organic practices were the norm on most community gardens/farms, although organic certification was not obtained, due to consumers first-hand knowledge of growers and the perceived lack of need for third-party verification. Food safety (FS) practices
varied among gardens/farms, with the most rigorously adopted practices on farms where CFOs had obtained FS training and provided trainings to their participants. This study helped fill information gaps regarding impacts of community gardens/farms in Iowa, particularly those established to assist immigrant and refugee gardeners/farmers. In addition, organizations were provided recommendations to improve their programs, which included seeking additional government and donor support to increase the size and security of land tenure for the gardens/farms, and to expand FS and business planning educational opportunities to meet participants’ needs.
CHAPTER 1: INTRODUCTION, LITERATURE REVIEW AND THESIS ORGANIZATION

Immigration Effects on Iowa’s Communities

In the U.S., immigration plays an important role on the size, distribution, and composition of the total national population. Immigrant populations help to increase diversity among Americans (Martin and Midgley, 2003). Iowa has a long history of accepting immigrants, beginning in the 1830s. The first settlers were the Sauk and Mesquakie, who were resettled into Iowa by the federal government, followed by European immigrants in the 1840s (Gore, 1991). The second wave of immigrants were from Mexico and Latin American regions. Although Hispanic populations arrived in Iowa as early as the 1880s (Valerio-Jiménez, 2016), there was a rapid increase in the late 1980s (Lay, 2017; Woodrick, 2015; Huffman and Miranowski, 1996), especially in Iowa’s rural towns (Thompson, 2011). From the 1970s to present, Iowa has resettled another wave of immigrants from Southeast Asia and Africa (Gore, 1991).

In Iowa, there were approximately 150,000 immigrants in 2015 and 135,759 native-born Americans with at least one member of the family an immigrant (American Immigration Council, 2017). Refugees have emigrated from their home countries for many reasons, but, especially for Africans, the most common reasons are human rights violations and war (Harris et al., 2014). There were roughly 25,000 immigrant-based jobs in the U.S. in 2007, and $98.3 million was obtained from immigrant-owned businesses in 2014 (New American Economy, 2016). In 2025, the U.S labor force is projected to be 170 million with an immigration increase, compared to 152 million without immigration after 2000 (Martin and Midgley, 2003). However, refugees and new immigrants arriving in the United States
(U.S.) often encounter a multitude of stressors, including learning a new language, laws, cultural norms, and systems, while seeking jobs and housing (Murray et al., 2010). The stress and challenges related to displacement are indispensable for these refugees (Ward-Lambert, 2014). According to Turton (2005): “The experience of displacement is not only about the loss of a place, and the pain and bereavement this entails. It is also, and inevitably, about the struggle to make a place in the world.”

Undocumented immigration has been one of the most discussed topics in the U.S. The U.S Department of Homeland Security estimated that 12.1 million unauthorized immigrants were living in the U.S. in January 2014, the vast majority of whom have lived in the U.S. for more than five years. The undocumented immigration problem has gone largely unaddressed for the past 30 years, as undocumented workers in the country have begun to play an increasingly integral role in many U.S. industries. In some sectors, such as agriculture, undocumented immigrants account for 50 percent of all hired workers, making them a critical component of this industry (Hertz and Steven, 2014).

A large number of these New Americans in Iowa tend to work in the state’s meat industry (Huffman and Miranowski, 1996). Major cities, such as Des Moines, Cedar Rapids, and Iowa City, are still the most preferable destinations for immigrants. Small towns have also been seeing more and more New Americans (Leitner, 2012) and integration of New Americans with the existing population has been challenging at times. Ensuring access to healthy food and stable incomes for immigrant populations has become a mission for many church-based and social mission organizations in Iowa. Many of these refugees are from agriculture-based countries and communities where they had years of gardening and farming experience. Thus, gardening/farming can be a meaningful and effective way for them to
transition to a new place (Hartwig and Mason, 2016; Harris et al., 2014; Ward-Lambert, 2014), and community farms and gardens are one solution to bring disparate populations together around a common cause.

Community Farms and Gardens

Community gardens/farms have shown positive impacts in sustainable agriculture and food security, especially for disadvantaged citizens. Currently, social movements in the U.S addressing food security and social justice, especially for immigrants and their descendants, are on the rise. According to the National Gardening Association (2014), the number of edible gardens in urban areas has increased to 9 million, with two million more households reporting participating in community gardening. The benefits of community gardens/farms have been extensive and the potential for spreading this model are considerable.

In the past, community garden/farm programs were developed to be temporary, so that with each new refugee crisis, new organizations and procedures were invented, even though similar processes were used each time to obtain public support and garden/farm land. Today, advocates assert that gardens should be permanent community resources (Lawson, 2005). Economic development and community revitalization are achieved when neighborhoods take pride in a community garden, when inner-city residents gain the ability to grow and market their own food, and when inner-city farmers’ markets provide new opportunities for entrepreneurs and commercial farmers. The city’s residents can benefit from cleaner air, lower summer temperatures within the gardens, and recycled wastewater and trash. Urban farming takes into account the real cost of food and the real benefits from a local and regional food system (Brown and Carter, 2003).
Gardening also has a role in increasing the health of a community. Individual health and a sense of empowerment are enhanced when urban dwellers have access to and greater control over their own food system (Brown and Carter, 2003). Some of the strongest reasons for advocating for community gardens rather than more parks are the social aspects gardens provide. Gardens provide fresh produce, often organic, to people who struggle for food access. Gardens link people together to improve the resilience of communities (Anderson, 2014). Philadelphia community gardeners listed recreation, mental health, physical health, produce quality and nutrition, spirituality, cost and convenience, and self-expression/self-fulfillment as reasons for community gardening (Blair et al., 1991). The intensive methods of production can maximize the efficiency of small-scale operations, as well as provide much of the household’s yearly vegetable needs and nutritional requirements (Smit et al, 2001).

While the benefits of healthy eating and green space development have been well documented, the social impacts of urban and community gardens remain less studied (Flachs, 2010). In Iowa, little research has been done to examine the impacts of these community gardens/farms on immigrant groups. Because of limited resources, organizations who have committed to support immigrant communities through gardening/farming projects have had little time to evaluate their successes, as well as barriers to success. This lack of information might affect the impact of these programs, especially for their participants.

Immigrants or New Americans have contributed a great deal to the state’s economy, diversity, and environmental preservation. Ensuring their access to healthy food and stable incomes has become a mission for many organizations in Iowa. Community gardens/farms have been proposed as one solution to enhance nutrition and food security in Iowa. This study sought to gain insight and knowledge about community gardens/farms and their effects
on immigrant communities in Iowa. Organizations can use these outcomes to amend or redirect their programs to provide better and more effective projects. Immigrant participants will then have a better view of the benefits, obstructions, and ideas about alternative methods. Local governments can examine the results of this research in their plans for reassessing vacant lands or creating more social and community garden/farm projects.

**Thesis Organization**

This thesis is organized into three chapters. Chapter 1 consists of a literature review and thesis organization. Chapter 2 represents the survey and interviews conducted of ten Community Farm Organizers (CFO) and 25 farmers (FMR) working in community farms and gardens with a focus on refugee or immigrant communities across Iowa. An additional CFO interview related to an organization outside of Iowa. Chapter 3 consists of conclusions and recommendations.
CHAPTER 2: EVALUATION OF IOWA’S COMMUNITY FARMS AND GARDENS
WORKING WITH IMMIGRANT POPULATIONS

Introduction

Community gardens/farms are spaces where people work together and share resources to produce fresh food and organize communal activities. According to the CDC, “Community gardens are collaborative projects on shared open spaces where participants share in the maintenance and products of the garden, including healthful and affordable fresh fruits and vegetables” (CDC, 2019). In addition to enhancing food security for disadvantaged citizens, community gardens/farms can provide a resource to improve communication and build community engagement (Lawson, 2005). The benefits of community gardens/farms also include the provisioning of a spiritual space for many immigrants by providing a connection to their home country through the nurturing of native edible plants and the act of gardening/farming itself (Blair et al., 1991).

Iowa has a long history of welcoming many immigrant and refugee communities, including new residents from Vietnam, Mexico, Bhutan, Burma, Burundi, and Sudan. Many organizations across Iowa established programs to support these new residents, particularly through food-centered programs, such as community gardens/farms and food pantries. Gardening and farming have been shown to assist with transitioning to a new place for many immigrants (Hartwig and Mason, 2016; Harris et al., 2014; Ward-Lambert, 2014). The hypothesis for this research was derived from the concept that community gardens/farms, using organic practices, can be one solution to enhance food security and nutrition for Iowans, especially for the disadvantaged, which includes many immigrant and refugee populations. The objectives of the research included the following:
• Explore immigrant farmers’ experiences and understanding of the benefits of community gardens/farms;

• Analyze the impacts of community gardens/farms, regarding income stability, food security and safety, and educational gain;

• Examine the constraints facing both organizations and farmers in participating in, and expanding the benefits of, community gardens/farms;

• Develop usable guidelines and recommendations for advancing the work of community gardens/farms in Iowa; and

• Determine the extent of community gardens/farms using organic practices and assist with their transition to organic, if needed.

**Methods**

My research began in August 2018 by collecting data from informal surveys and scheduled personal interviews of individuals working in Iowa community gardens/farms dedicated to a social/community mission of providing assistance to refugee or immigrant populations, following methods described in Soulis (2012), Irish (2018), and Dimitri et al. (2016). A snowball approach (Goodman, 1961) was used to secure names of potential organizers and farmers working on community gardens/farms in Iowa, with assistance provided by Iowa State University’s Farm, Food and Enterprise Development program (Ames, Iowa).

Semi-structured in-depth interviews were employed to explore in more detail farmers’ experience and understanding (Miller and Crabtree, 2004). Institutional Review Board (IRB)
approval was obtained as an exempted project, after interview questions were developed and submitted (Appendix A).

All interviewees were required to read and sign a consent form before the interview commenced. Interviews then would be recorded on an iPhone™, downloaded into a computer, and saved on a password-protected folder in CyBox, Iowa State University's cloud storage. Each interview was held at different locations and in the environment chosen by interviewees in order to make them feel the most comfortable. Thirty-five semi-structured interviews were conducted from October 2018 to January 2020, including eleven interviews from the community garden and farm organizers (CFOs), one outside of Iowa, and twenty-five interviews from gardeners and farmers (FMRs) in Iowa. The interviews were conducted at community gardens and farms, coffee shops, organization offices, private homes, and farmers’ markets.

In order to reduce any background noise during the interviews, the Adobe Audition™ CC 2019 (AA19) software was used. This audio workstation, developed by Adobe, Inc. (San Jose, CA), is a comprehensive toolset that includes multitrack, waveform, and spectral display for creating, mixing, editing, and restoring audio content (Adobe, 2020). After importing recorded files to AA19, only background noise frequencies were scanned, identified, and removed. The final audio files then were imported to another software, Express Scribe Pro 8™ (ESP8) developed by NCH Software, Inc. (Greenwood Village, CO). This program software is professional audio player software designed to help transcribe audio recordings. The ESP8 was chosen because it had many features which helped increase transcribing speed, such as variable speed playback, Microsoft Word™ format export, and connecting with a variety of professional USB foot pedal devices. The Infinity USB Foot
Pedals™ manufactured by AltoEdge, Ltd. (Palisades Park, NJ) were used to accelerate the transcribing speed to approximately 1 hour per 10 minutes of interview, for a total of 150 hours to transcribe over 23 hours of interviews. All thirty-five interviews were analyzed through the NVivo™ program (QRS International, Australia) to reveal general and specific themes. This software program is commonly used for qualitative and mixed-methods research by analyzing text and audio, including interviews. Each interview transcript was coded and imported into NVivo™. The transcripts were categorized into two sections: FMRs and CFOs. Each file was scanned for common responses, which were placed under different themes. These themes then were sorted and inserted into broad themes which are described under Results.

Participatory action research (Baum, MacDougall, and Smith 2006; Gaventa 1993; Swantz 2008; Wiltshire et al., 2010) was also utilized by volunteering with production and marketing aspects of the farms to gain participants’ trust while exploring their reasons for farming and the impacts on their lives. Hours logged on research sites (Global Greens Program, Des Moines, Iowa, and Food at First, Ames, Iowa) are included in Table 1 and totaled over 300 hours over the course of the project.
Table 1. Volunteer hours at two community farms, 2018-2019

| Year | Global Greens | | | | | | Food at First | | | | | |
|------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|      | Month         | Week 1 | Week 2 | Week 3 | Week 4 | Total | Week 1 | Week 2 | Week 3 | Week 4 | Total |
| 2018 | September     | 3      | 0      | 0      | 0      | 3     | 2      | 2      | 8      | 2      | 14    |
|      | October       | 0      | 0      | 0      | 8      | 8     | 2      | 2      | 8      | 2      | 14    |
|      | November      | 5      | 0      | 0      | 0      | 5     | 2      | 2      | 8      | 2      | 14    |
|      | December      | 0      | 0      | 0      | 0      | 0     | 0      | 6      | 0      | 6      | 6     |
| 2019 | January       | 0      | 0      | 0      | 0      | 0     | 0      | 0      | 6      | 0      | 6     |
|      | February      | 0      | 0      | 7      | 0      | 7     | 0      | 0      | 6      | 0      | 6     |
|      | March         | 7      | 5      | 7      | 4      | 23    | 0      | 0      | 6      | 0      | 6     |
|      | April         | 0      | 5      | 17     | 5      | 27    | 0      | 0      | 6      | 0      | 6     |
|      | May           | 4      | 8      | 0      | 10     | 22    | 2      | 2      | 8      | 2      | 14    |
|      | June          | 14     | 0      | 8      | 0      | 22    | 2      | 2      | 8      | 2      | 14    |
|      | July          | 0      | 8      | 8      | 9      | 25    | 2      | 2      | 8      | 2      | 14    |
|      | August        | 4      | 5      | 5      | 5      | 19    | 0      | 0      | 6      | 0      | 6     |
|      | September     | 5      | 2      | 5      | 9      | 21    | 0      | 0      | 6      | 0      | 6     |
|      | October       | 4      | 4      | 0      | 0      | 8     | 0      | 0      | 6      | 0      | 6     |
|      | Total         |        |        |        |        | 190   |        |        |        |        | 132   |
Results

Overview of Total Responses

From the thirty-six semi-structured interviews in Iowa, including eleven interviews from the community garden and farm organizers (CFOs), and twenty-five interviews from gardeners and farmers (FMRs) (Tables 2 and 3), organizational structure and gardening themes were developed. The size of the surveyed community gardens and farms ranged from 6,000 square feet to 8.5 acres. The establishment year of these farming and gardening programs varied, with the oldest garden started in 2006 and the newest in 2018. The ages of participants in these gardens varied depending on locations and program structures. Most of the participants were from Africa and Asia. There was a small number of gardeners from Central America. The majority of farmers and gardeners who participated in this research were from Burundi, Congo, Somalia, Uganda, Rwanda, Bhutan, Nepal, and Burma. All of the farmers and gardeners had a background in agriculture and gardening before coming to the U.S. However, only 56% (n=14) of them used to farm on large acreages for their livelihood, while 44% (n=11) just “knew how to grow vegetables”, “had a small garden at home”, “learned from school”, “helped relatives with farming and gardening”, or “learned when in refugee camps.” The majority of farmers who used to farm large-scale expressed their goal of owning their own business after learning how to farm using American ways at the community gardens and farms. Three of the interviewed farmers were running their own operation on two-acre plots in Iowa City, Cedar Rapids, and Altoona.

Within the program structure, 60% (n=6) of the researched community gardens and farms are using the allotment community garden model, where each participant is responsible for their own plots and the disposition of their produce (Flavell, 2003). An average of 40%
(n=4) of the community gardens and farms are using the communal garden model, where everyone shares the workload and produce. About 50% (n=2) of these gardens distribute food for each participant or reinvest profits from produce sales into the gardens, while the other 50% (n=2) donate all the produce to food pantries and other charity organizations. All of the community gardens and farms are following organic practices or naturally grown practices, avoiding toxic agrochemicals and synthetic fertilizers.

Since there were two sets of questionnaires for CFOs and FMRs, the themes deriving from their responses are evaluated in two categories. However, “food security”, including “having more food intake”, “having more culturally appropriate food”, or “eating more healthy food”, were cited (100% or n=36) as one of the top benefits by both CFOs and FMRs. As for challenges, the most common themes were “land access” and “sources of funding” which were mentioned in all interviews. Common themes from each category of interviewees are described in the following sections.

**Community Farm Organizers (CFO)**

The most effective methods used to reach potential participants is “word of mouth”, starting “within the organization’s communication channels,” according to 100% (n=11) of CFOs. Participants are selected on a “first come first serve” basis. However, people interested in joining the Global Greens (GG) Community Farm are required to work in the GG community gardens for at least one year. The program advisors will monitor the process, and an interview will be conducted to decide if the gardener is capable of farming on their own in the community farm.
Table 2. Name and locations of surveyed community farms/gardens in Iowa

<table>
<thead>
<tr>
<th>Name</th>
<th>Organization</th>
<th>Date of interviews</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFO 01</td>
<td>LSI Global Greens Community Farm</td>
<td>10/27/18</td>
<td>Des Moines, IA</td>
</tr>
<tr>
<td>CFO 02</td>
<td>FFARMS / Growing Together</td>
<td>11/28/18</td>
<td>Fargo, ND</td>
</tr>
<tr>
<td>CFO 03</td>
<td>Food at First</td>
<td>11/28/18</td>
<td>Ames, IA</td>
</tr>
<tr>
<td>CFO 04</td>
<td>Feed Iowa First</td>
<td>2/15/19</td>
<td>Iowa City, IA</td>
</tr>
<tr>
<td>CFO 05</td>
<td>LSI Global Greens Community Farm</td>
<td>4/24/19</td>
<td>Des Moines, IA</td>
</tr>
<tr>
<td>CFO 06</td>
<td>Columbus Junction Community Development</td>
<td>5/30/19</td>
<td>Columbus Junction, IA</td>
</tr>
<tr>
<td>CFO 07</td>
<td>UNI – EMBARC Community Garden</td>
<td>6/25/19</td>
<td>Waterloo, IA</td>
</tr>
<tr>
<td>CFO 08</td>
<td>Global Food Project in Iowa City</td>
<td>5/18/19</td>
<td>Iowa City, IA</td>
</tr>
<tr>
<td>CFO 09</td>
<td>Catherine McAuley Center Community Garden</td>
<td>6/14/19</td>
<td>Cedar Rapids, IA</td>
</tr>
<tr>
<td>CFO 10</td>
<td>Matthew 25</td>
<td>8/2/19</td>
<td>Cedar Rapids, IA</td>
</tr>
<tr>
<td>CFO 11</td>
<td>Hiawatha Community Garden</td>
<td>8/10/19</td>
<td>Hiawatha, IA</td>
</tr>
</tbody>
</table>

\(^z\) Coded names of Community Farm Organizers (CFO).
Within the 10 organizations, 70% of the CFOs have experience with gardening and farming. The other 30% “just started learning how to grow” or “do not know” [how to grow vegetables]. The gardening and farming experience of CFOs plays an important role in the success of the programs such as their participation in facilitating trainings for their clients. Among the ten community farms/gardens, there were three organizations (30%) providing business trainings for their participants, with two organizations generating income by selling their produce at farmers’ markets, local stores, and through a CSA program. The remainder of farms (70%) operate as hobby community gardens, providing family and friends with a small amount of fresh produce each week. Among the ten community farms/gardens, Matthew 25 (Cedar Rapids, Iowa) community garden is the only organization that owns their land. The remainder of gardens and farms were operating on donated land from churches, the neighborhood, city government, and private citizens.

From the ten interviews with CFOs, benefits from community gardens and farms included the following: “food security” (100% or n=11), “providing high quality fresh produce or organic food” (100% or n=11), “saving money” (72.7% or n=8), “learning from each other” (72.7% or n=8), “physical improvement from working in the garden or on the farm” (63.6% or n=7), and “reconnecting with nature and tradition” (63.6% or n=7).

As for the barriers, interviewees cited “land access” (100% or n=11), “sources of funding” (100% or n=11), “human resources” (100% or n=11), “time constraints” (100% or n=11), and “language constraints” (45% or n=5). “Food safety” was also an issue in which all organizations expressed a need for more trainings. The CFOs offering business planning training programs had more knowledge about food safety protocols.
Community Gardens and Farms’ Participants (FMR)

All farmers and gardeners interviewed cited that some of the most important benefits of community gardens and farms were to provide them with “more food, culturally appropriate food, or healthy organic food” (100% or n=25), “reconnecting with nature, tradition, and way of life” (96% or n=24), “physical activities or good for health” (96% or n=24), or “saving money” (84% or n=21).

Regarding challenges or barriers encountered at community farms/gardens, farmers cited “communication, including language barriers” (92% or n=23), “land access” (88% or n=22), “financial issues” (88% or n=22), or “time constraints” (88% or n=22). From 25 interviews, one interviewee answered, “I don’t know” for the questions about barriers, and one answered: “There is no difficulty when working at the garden.” Some farmers cited that “health problems” (12% or n=3) and “transportation” [to/from the gardens and farms] (24% or n=6) are the barriers for them to work more at the gardens and farms.

Within the African interviewees (n=17), 94% (n=16) cited that “they want to expand their operation to larger land.” One interviewee did not answer the question. However, this farmer has been accepted into the Savings Incentive Program (SIP) from the Practical Farmers of Iowa (PFI). This program helps beginning farmers in Iowa establish a healthy farm business. Within the Asian interviewees (n=7), 100% (n=7) addressed their wish to have additional land and five respondents (71%) wanted to run their own farm business.

A summary of Benefits of community gardens/farms as expressed by both CFOs and FMRs is shown in Table 4; while Table 5 shows the Challenges associated with current work and future plans of CFOs and community gardeners/farmers. Table 6 summarizes the
community gardens/farms that will be discussed in the next chapters, and Table 7 lists the vegetables and their scientific names, grown by community gardeners/farmers in this study.

Table 3. List of surveyed farmer participants on community farms/gardens in Iowa.

<table>
<thead>
<tr>
<th>Name</th>
<th>Organization</th>
<th>Date of interviews</th>
<th>Location</th>
<th>Regions of origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>FMR 01</td>
<td>LSI Global Greens Community Farm</td>
<td>12/15/18</td>
<td>Des Moines, IA</td>
<td>Africa</td>
</tr>
<tr>
<td>FMR 02</td>
<td>LSI Global Greens Community Farm</td>
<td>2/19/19</td>
<td>Des Moines, IA</td>
<td>Africa</td>
</tr>
<tr>
<td>FMR 03</td>
<td>LSI Global Greens Community Farm</td>
<td>2/16/19</td>
<td>Des Moines, IA</td>
<td>Asia</td>
</tr>
<tr>
<td>FMR 04</td>
<td>LSI Global Greens Community Farm</td>
<td>3/23/19</td>
<td>Des Moines, IA</td>
<td>Asia</td>
</tr>
<tr>
<td>FMR 05</td>
<td>LSI Global Greens Community Farm</td>
<td>3/30/19</td>
<td>Des Moines, IA</td>
<td>Africa</td>
</tr>
<tr>
<td>FMR 06</td>
<td>LSI Global Greens Community Farm</td>
<td>5/10/19</td>
<td>Des Moines, IA</td>
<td>Africa</td>
</tr>
<tr>
<td>FMR 07</td>
<td>LSI Global Greens Community Farm</td>
<td>7/13/19</td>
<td>Des Moines, IA</td>
<td>Africa</td>
</tr>
<tr>
<td>Name</td>
<td>Organization</td>
<td>Date of interviews</td>
<td>Location</td>
<td>Regions of origin</td>
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</tr>
<tr>
<td>FMR 08</td>
<td>LSI Global Greens Community Farm</td>
<td>7/12/19</td>
<td>Des Moines, IA</td>
<td>Africa</td>
</tr>
<tr>
<td>FMR 09</td>
<td>LSI Global Greens Community Farm</td>
<td>7/13/19</td>
<td>Des Moines, IA</td>
<td>Africa</td>
</tr>
<tr>
<td>FMR 10</td>
<td>LSI Global Greens Community Farm</td>
<td>7/27/19</td>
<td>Des Moines, IA</td>
<td>Africa</td>
</tr>
<tr>
<td>FMR 11</td>
<td>LSI Global Greens Community Farm</td>
<td>1/5/20</td>
<td>Des Moines, IA</td>
<td>Africa</td>
</tr>
<tr>
<td>FMR 12</td>
<td>Feed Iowa First</td>
<td>2/15/19</td>
<td>Iowa City, IA</td>
<td>Africa</td>
</tr>
<tr>
<td>FMR 13</td>
<td>Catherine McAuley Center Community Garden</td>
<td>6/15/19</td>
<td>Cedar Rapids, IA</td>
<td>Africa</td>
</tr>
<tr>
<td>FMR 14</td>
<td>Catherine McAuley Center Community Garden</td>
<td>6/21/19</td>
<td>Cedar Rapids, IA</td>
<td>Central America</td>
</tr>
<tr>
<td>FMR 15</td>
<td>Catherine McAuley Center Community Garden</td>
<td>6/21/19</td>
<td>Cedar Rapids, IA</td>
<td>Africa</td>
</tr>
</tbody>
</table>
Table 3. (continued)

<table>
<thead>
<tr>
<th>Name</th>
<th>Organization</th>
<th>Date of interviews</th>
<th>Location</th>
<th>Regions of origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>FMR 16</td>
<td>Catherine McAuley Center</td>
<td>6/21/19</td>
<td>Cedar Rapids, IA</td>
<td>Africa</td>
</tr>
<tr>
<td></td>
<td>Community Garden</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FMR 17</td>
<td>Catherine McAuley Center</td>
<td>6/23/19</td>
<td>Cedar Rapids, IA</td>
<td>Africa</td>
</tr>
<tr>
<td></td>
<td>Community Garden</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FMR 18</td>
<td>Independent Farmer - Former</td>
<td>7/16/19</td>
<td>Iowa City, IA</td>
<td>Africa</td>
</tr>
<tr>
<td></td>
<td>Participant of Global Food Project in Iowa City</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FMR 19</td>
<td>UNI – EMBARC Community Garden</td>
<td>6/25/19</td>
<td>Waterloo, IA</td>
<td>Asia</td>
</tr>
<tr>
<td>FMR 20</td>
<td>UNI – EMBARC Community Garden</td>
<td>6/25/19</td>
<td>Waterloo, IA</td>
<td>Asia</td>
</tr>
<tr>
<td>FMR 21</td>
<td>UNI – EMBARC Community Garden</td>
<td>7/16/19</td>
<td>Waterloo, IA</td>
<td>Asia</td>
</tr>
<tr>
<td>FMR 22</td>
<td>UNI – EMBARC Community Garden</td>
<td>7/16/19</td>
<td>Waterloo, IA</td>
<td>Asia</td>
</tr>
<tr>
<td>FMR 23</td>
<td>Matthew 25</td>
<td>8/10/19</td>
<td>Cedar Rapids, IA</td>
<td>Africa</td>
</tr>
</tbody>
</table>
Table 3. (continued)

<table>
<thead>
<tr>
<th>Name</th>
<th>Organization</th>
<th>Date of interviews</th>
<th>Location</th>
<th>Regions of origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>FMR 24</td>
<td>Matthew 25</td>
<td>7/26/19</td>
<td>Cedar Rapids, IA</td>
<td>Africa</td>
</tr>
<tr>
<td>FMR 25</td>
<td>Hiawatha Community Garden</td>
<td>8/10/19</td>
<td>Hiawatha, IA</td>
<td>Asia</td>
</tr>
</tbody>
</table>

Table 4. Summary of benefits from community farms/gardens, according to participants, 2019.

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Percentage of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOOD SECURITY</td>
<td>100%</td>
</tr>
<tr>
<td>Increase in vegetable consumption; healthy, organic, culturally appropriate food</td>
<td></td>
</tr>
<tr>
<td>PHYSICAL AND MENTAL HEALTH</td>
<td>91.4%</td>
</tr>
<tr>
<td>Having more exercise; Empowering</td>
<td></td>
</tr>
<tr>
<td>TRADITIONAL PRESERVATION</td>
<td>91.4%</td>
</tr>
<tr>
<td>Reconnecting and teaching children about nature and tradition</td>
<td></td>
</tr>
<tr>
<td>FINANCIAL IMPROVEMENT</td>
<td>85.7%</td>
</tr>
<tr>
<td>Saving and making money</td>
<td></td>
</tr>
<tr>
<td>EDUCATIONAL GAIN</td>
<td>77%</td>
</tr>
<tr>
<td>Learning from organizations and other gardeners and farmers</td>
<td></td>
</tr>
</tbody>
</table>
Table 5. Summary of challenges for community farms/gardens, according to participants, 2019.

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUMAN RESOURCES (CFOs only)</td>
<td>100%</td>
</tr>
<tr>
<td>Lacking staff</td>
<td></td>
</tr>
<tr>
<td>LAND ACCESS</td>
<td>91.4%</td>
</tr>
<tr>
<td>FINANCIAL ISSUES</td>
<td>91.4%</td>
</tr>
<tr>
<td>Funding, loans</td>
<td></td>
</tr>
<tr>
<td>TIME CONSTRAINTS</td>
<td>91.4%</td>
</tr>
<tr>
<td>Working 2-3 jobs at a time</td>
<td></td>
</tr>
<tr>
<td>COMMUNICATION</td>
<td>82.9%</td>
</tr>
<tr>
<td>Interpreting, miscommunication, language barriers</td>
<td></td>
</tr>
<tr>
<td>FOOD SAFETY KNOWLEDGE</td>
<td>80%</td>
</tr>
<tr>
<td>TRANSPORTATION</td>
<td>24%</td>
</tr>
<tr>
<td>HEALTH PROBLEMS</td>
<td>12%</td>
</tr>
<tr>
<td>Pre-condition health issues, accidents at outside work</td>
<td></td>
</tr>
</tbody>
</table>
Table 6. Summary of Community Gardens and Farms surveyed in this research

<table>
<thead>
<tr>
<th>Name of farm/garden</th>
<th>Location</th>
<th>Managing unit</th>
<th>Year started</th>
<th>Mission</th>
<th>Number of active families</th>
<th>Number of plots / gardens</th>
<th>Area of farm and garden</th>
<th>Status of land</th>
<th>Experience required of farmers and CFOs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Greens Community Gardens</td>
<td>Des Moines, IA</td>
<td>Lutheran Services of Iowa</td>
<td>2010</td>
<td>Reconnect former refugee farmers with the land as they build their new life in the U.S. and farmers can access space to grow food, learn more about U.S. agriculture, and start their own business by selling produce at the Farmers’ Market and CSA.</td>
<td>250</td>
<td>19 gardens</td>
<td>Variable</td>
<td>Donated (church, city, business, private sectors)</td>
<td>None; Some gardens run by volunteers. The GG gardens run and supported by GG staff.</td>
</tr>
<tr>
<td>Global Greens Incubation Farm</td>
<td>West Des Moines, IA</td>
<td></td>
<td>2013</td>
<td></td>
<td>27</td>
<td>100 plots</td>
<td>1/16 acre – ¼ acre plots Total 8.5 acres</td>
<td>Donated (church)</td>
<td>Yes; 1 yr experience on Community Gardens; experienced CFOs</td>
</tr>
<tr>
<td>Name of farm/ garden</td>
<td>Location</td>
<td>Managing unit</td>
<td>Year started</td>
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<td>Status of land</td>
<td>Experience required of farmers and CFOs</td>
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</tr>
<tr>
<td>Matthew 25</td>
<td>Cedar Rapids, IA</td>
<td>Matthew 25</td>
<td>2012</td>
<td>Connects gardeners and small-scale farmers with resources to grow food and build community bonds.</td>
<td>14</td>
<td>24 plots (Cultivate Hope Urban Farm)</td>
<td>20’x 20’ plots</td>
<td>Owned</td>
<td>None; experienced CFOs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>½ acre garden</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Donated (church)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catherine McAuley Center</td>
<td>Cedar Rapids, IA</td>
<td>Catherine McAuley Center</td>
<td>1989</td>
<td>The Catherine McAuley Center offers hope and opportunity through educational and supportive services that promote stability, skill-building, and connection.</td>
<td>12</td>
<td>15 raised beds, 13-15 garden beds</td>
<td>Total 6,500 sq. ft.</td>
<td>Owned</td>
<td>None; less experienced</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>Area of farm/garden</td>
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</tr>
<tr>
<td>EMBARC – UNI Community Garden</td>
<td>Waterloo, IA</td>
<td>EMBARC - UNI</td>
<td>2017</td>
<td>Provide refugee women with economic empowerment opportunities to generate new sources of income and build food security through workshops on business planning, customer service, cash handling, marketing, and food safety.</td>
<td>12-15</td>
<td>One garden</td>
<td>¼ acre</td>
<td>Owned by city</td>
<td>None; less experienced</td>
</tr>
<tr>
<td>Hiawatha Community Garden</td>
<td>Hiawatha, IA</td>
<td>None</td>
<td>2019</td>
<td>Simply to just be able to grow their own food again.</td>
<td>2 out of 20</td>
<td>20 plots</td>
<td>10’ x 10’ plots ½ acre garden</td>
<td>Donated (private donor)</td>
<td>None; Inexperienced CFOs</td>
</tr>
<tr>
<td>Name of farm/garden</td>
<td>Location</td>
<td>Managing unit</td>
<td>Year started</td>
<td>Mission</td>
<td>Number of active families</td>
<td>Number of plots / gardens</td>
<td>Area of farm/garden</td>
<td>Status of land</td>
<td>Experience required of farmers and CFOs</td>
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<td>----------------------------------------</td>
</tr>
<tr>
<td>Feed Iowa First</td>
<td>Cedar Rapids, IA</td>
<td>Feed Iowa First</td>
<td>2011</td>
<td>To combat food insecurity by growing food and farmers. Make sure residents of Linn County, no matter their socioeconomic class, have access to healthy nutritious food. Access to good nutrition is vital to health, learning, longevity and quality of life.</td>
<td>27 garden and farm partners</td>
<td>Various gardens; FIF does not own.</td>
<td>Variable</td>
<td>Donated (church, businesses, private sectors)</td>
<td>None; less experienced CFOs</td>
</tr>
<tr>
<td>Columbus Junction Community Garden</td>
<td>Columbus Junction, IA</td>
<td>Columbus Junction Community Development Center</td>
<td>2016</td>
<td>Create a sense of belonging to New Americans through growing culturally appropriate food and reconnecting with nature and tradition</td>
<td>8</td>
<td>8 plots</td>
<td>16’ x 16’ or 20’ x 20’ plots</td>
<td>City Owned</td>
<td>None; experienced CFO</td>
</tr>
<tr>
<td>Name of farm/garden</td>
<td>Location</td>
<td>Managing unit</td>
<td>Year started</td>
<td>Mission</td>
<td>Number of active families</td>
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<td>------------------------------------------</td>
</tr>
<tr>
<td>Global Food Project</td>
<td>Iowa City, IA</td>
<td>Global Food Project with Grow Johnson County and Iowa Valley R, C, and D</td>
<td>2016</td>
<td>Connect newly arrived and established Iowa City and Johnson County residents through sustainable local food production, educational events, and community gatherings by providing a safe, nurturing, and inclusive environment for sharing life experiences, building trust between cultures, and embracing the diversity of Iowans.</td>
<td>40</td>
<td>Variable</td>
<td>10’ x 15’ Total 3.7 acres</td>
<td>City Owned</td>
<td>None; less experienced</td>
</tr>
</tbody>
</table>
Table 6. (continued)

<table>
<thead>
<tr>
<th>Name of farm/garden</th>
<th>Location</th>
<th>Managing unit</th>
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<th>Status of land</th>
<th>Experience required of farmers and CFOs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food at First Garden</td>
<td>Ames, IA</td>
<td>SASA</td>
<td>2003</td>
<td>Provide fresh food for Food at First where everyone can have healthy food.</td>
<td>4-10 volunteers</td>
<td>One garden</td>
<td>3,500 sq. ft.</td>
<td>Donated (church)</td>
<td>None; experienced students from SASA</td>
</tr>
<tr>
<td>Growing Together Community Gardens</td>
<td>Fargo, ND</td>
<td>Growing Together</td>
<td>2006</td>
<td>To provide a safe place for our New American neighbors to meet new friends and grow food and relationships</td>
<td>150</td>
<td>6 gardens</td>
<td>Variable</td>
<td>Donated (city, businesses, churches, individuals)</td>
<td>None; experienced CFO</td>
</tr>
</tbody>
</table>
Table 7. Vegetables grown in community gardens/farms in Iowa, including common and scientific names.

<table>
<thead>
<tr>
<th>Common name</th>
<th>Scientific name</th>
</tr>
</thead>
<tbody>
<tr>
<td>African eggplant</td>
<td>Solanum macrocarpon</td>
</tr>
<tr>
<td>Bean</td>
<td>Phaseolus vulgaris</td>
</tr>
<tr>
<td>Beets</td>
<td>Beta vulgaris</td>
</tr>
<tr>
<td>Bitter melon</td>
<td>Momordica charantia</td>
</tr>
<tr>
<td>Brussel sprout</td>
<td>Brassica oleracea var. gemmifera</td>
</tr>
<tr>
<td>Cabbage</td>
<td>Brassica oleracea var. capitata</td>
</tr>
<tr>
<td>Carrot</td>
<td>Daucus carota subsp. sativus</td>
</tr>
<tr>
<td>Glutinous corn/ Waxy corn</td>
<td>Zea mays var. ceratina</td>
</tr>
<tr>
<td>Coriander</td>
<td>Coriandrum sativum</td>
</tr>
<tr>
<td>Cucumber</td>
<td>Cucumis sativus</td>
</tr>
<tr>
<td>Green bean</td>
<td>Phaseolus vulgaris</td>
</tr>
<tr>
<td>Garlic</td>
<td>Allium sativum</td>
</tr>
<tr>
<td>Habanero pepper</td>
<td>Capsicum chinense (habanero group)</td>
</tr>
<tr>
<td>Isogo</td>
<td>Solanum nigrum</td>
</tr>
<tr>
<td>Kale</td>
<td>Brassica oleracea var. sabellica</td>
</tr>
<tr>
<td>Lenga-lenga</td>
<td>Amaranthus hybridus</td>
</tr>
<tr>
<td>Lettuce</td>
<td>Lactuca sativa</td>
</tr>
<tr>
<td>Long beans</td>
<td>Vigna unguiculata ssp. sesquipedalis</td>
</tr>
<tr>
<td>Mchicha</td>
<td>Amaranthus hybridus</td>
</tr>
<tr>
<td>Okra</td>
<td>Abelmoschus esculentus</td>
</tr>
<tr>
<td>Onion</td>
<td>Allium cepa</td>
</tr>
<tr>
<td>Common name</td>
<td>Scientific name</td>
</tr>
<tr>
<td>----------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>Potato</td>
<td>Solanum tuberosum</td>
</tr>
<tr>
<td>Pumpkin</td>
<td>Cucurbita pepo</td>
</tr>
<tr>
<td>Roselle</td>
<td>Hibiscus sabdariffa</td>
</tr>
<tr>
<td>Shell bean</td>
<td>Phaseolus vulgaris</td>
</tr>
<tr>
<td>Snap peas</td>
<td>Pisum sativum var. saccharatum</td>
</tr>
<tr>
<td>Spinach</td>
<td>Spinacia oleracea</td>
</tr>
<tr>
<td>Squash</td>
<td>Cucurbita maxima</td>
</tr>
<tr>
<td>Sweet potato</td>
<td>Ipomoea batatas</td>
</tr>
<tr>
<td>Thai chili</td>
<td>Capsicum annuum</td>
</tr>
<tr>
<td>Tomatoes</td>
<td>Solanum lycopersicum</td>
</tr>
<tr>
<td>Turnip</td>
<td>Brassica rapa ssp. rapa</td>
</tr>
<tr>
<td>Water spinach</td>
<td>Ipomoea aquatica</td>
</tr>
<tr>
<td>Zucchini</td>
<td>Cucurbita pepo</td>
</tr>
</tbody>
</table>
Background

The Global Greens Community Farm was established by Lutheran Services in Iowa in West Des Moines, Iowa, in 2013, after three years of an initial program entitled “Iowa Immigrant and Refugee Incubator Program,” funded by the Leopold Center in 2010. The goal of the farm was to provide former refugee farmers with land to farm so they could grow food and learn new business skills. This 8.5–acre farm provides plots for 24 immigrant farmers as part of a business development incubator program. From 2013 to 2018, four farmers graduated from the Global Greens incubator program and have established their own farms in Iowa. At the time of this study, the organizers were seeking additional land in order to accept more farmers from their waiting list of more than 100 applicants. Refugees joining the community gardens and the community farm are very diverse, and are mostly from Asia and Africa. Their home countries include Congo, Burundi, Rwanda, Liberia, Bhutan, and Burma (Chin, Karen, Karenni ethnic groups). There were also a few native-born Americans participating in the community gardens.

In order to participate in the incubator program, immigrant farmers are first interviewed by LSI staff to assess the applicant’s interests and commitment to farming. During their time at the community farm, members will receive support from Global Greens, including training in organic production skills, food safety, production efficiency, marketing, finance and recordkeeping, and pest and disease management. Participants also receive individual assistance for any issues that they encounter on the farm and in developing their business plans. During these trainings, immigrant farmers will learn about potential markets and can determine the scale of production that best fits their capacity. Global Greens has
created a Farmers’ Market and Community-Supported Agriculture (CSA) program which assists in increasing sales, connections with the local community, and overcoming communication barriers in a new country.

**Phases of Global Greens Programming**

In 2010, LSI ended their refugee resettlement services and started to focus on continued services they could provide for the refugee community. One of the community farm organizers (CFO 01) said: “We looked to the refugee community to see what things they wanted us to look at for ongoing services because here [in the U.S.] you get, I think, 90 days of government assistance after you resettled as a refugee, but that wasn’t enough.”

The idea of creating the Global Greens program originated on a trip to Washington, D.C., with an LSI community leader, Nicholas Wuertz, and several refugee community leaders in 2010. CFO 01 reminisced that, on this trip, LSI leaders discussed the idea of creating a program that would help immigrants and refugees, with a strong background in organic and natural farming, by connecting them with gardening and farming in Iowa. He said: “On the way [home from the trip], the community leader from the Burundi Association said: ‘Stop the car,’ and then he got out of the van and went out in the middle of this big field of beans in Iowa and he said: ‘We know how to do this in our country. Help us do this!’.”

Most of the refugees at LSI at that time came to the U.S with a strong background in farming using organic and/or natural methods. They had a strong desire to reconnect with the land and grow food that they used to have back in their home countries.

Recognizing the needs for a program that could help refugees access healthy and culturally appropriate food, as well as viable opportunities to help create their own farming
business, the LSI planning team began researching and visiting other organizations in the Midwest. They met with leaders from these projects: New Roots for Refugees in Kansas City, Missouri, Minnesota Food Association (currently called Blue River Farms) in St. Croix, Minnesota, New Entry Sustainable Farming Project in Beverly, Massachusetts, and Marshalltown Community Gardens in Marshalltown, Iowa (Wuertz and Gobberdiel, 2012). From the beginning, LSI created Global Greens using a three-phase framework, to first connect the refugees with garden plots, then provide training in farming and business, and finally, transition trained participants to their own farms. At the time of the interview, Global Greens leaders were working on a new program pathway developed from the original one. They were gearing programming in this new track to consist of five phases: 1) Community Gardener, 2) Beginning Market Farmer, 3) Advanced Market Farmer, 4) Partial Transition Farmer and 5) Full Transition Farmer. These phases will be analyzed below.

Phase 1: Community Gardener

The LSI Global Greens leaders worked with the city of Des Moines and private landowners to provide New Americans who were interested in gardening and farming access to small garden plots near their home. This helped open up an opportunity for these communities “to grow food in Iowa and also allow interested entrepreneurs a chance to hone their skills in a new environment.” At the beginning of this phase, the LSI planning team placed gardeners on 100 plots near their homes around the Des Moines area (Wuertz, 2012; Koether, 2019). At the time of the interview, a Global Greens organizer (CFO 04) explained the process of finding land for gardens which involved “working with a lot of other non-profit organizations or the city [of Des Moines], and some churches to either start community gardens or we just worked to connect people to existing gardens.” After the first year, more
refugees signed up as word of the Global Greens program spread throughout the community. CFO 01 added: “We don’t have too much integration directly with resettlement services. It’s not like they resettled people and then they connected us with the program. It’s more, I think, now that we have an established program, the resettlement agencies say if you want a garden, go talk to Lutheran Services … We have connections with those groups, but there’s not a direct pipeline for people, I guess.”

Phase 1 of this program incorporated interpreters and community leaders from former resettlement programs and the current refugee-supporting programs at that time to connect different ethnic groups for a list of people who were interested in gardening and farming. After the first year of the program, many more people signed up to join these community gardens, as there was no requirement to join these gardens. CFO 01 said: “Community Gardens … We accept anybody as long as they came as a refugee and they can bring their I94 card. So, anybody can be a part of that community program.” If a refugee wanted to garden, they could just come and talk to the Global Greens staff. The staff then would check the refugee’s home address and suggest a community garden in his/her neighborhood.

During the planning year, the participants were able to grow food for their family at the community gardens near their homes. CFO 04 said: “In 2018, I think there were over 240-250 families that were gardening in community gardens around the Des Moines area.” The success of this phase helped LSI form and develop their training program in the second phase where gardeners could improve their productivity, become more familiar with Iowa climate and markets, and learn about American ways to farm and garden. Moreover, the community gardens alleviated any scarcities of local food sources for families with limited resources (Wuertz, 2012). Refugees who wanted to advance to the second phase were
required to work at the community gardens for at least a year to demonstrate their commitment and ability.

**Phases 2 and 3: Business Development: Beginning Market Farmers and Advanced Market Farmers**

In 2013, after witnessing increasing requests for more or larger plot sizes and a greater focus on farm business development, LSI established an incubator farm on an 8.5-acre parcel of land, donated by the Valley Community Center, in West Des Moines, Iowa. At the time of the interviews, 24 former refugee farmer families were farming on this community farm with their plot size ranging from one to four 50 x 50-sq. ft. plots, depending on their experience and commitment. Refugees who wanted to advance to the second phase were required to work at the community gardens for at least one year and express their commitment and ability through an interview with Global Greens staff. CFO 05 said: “For the farm, you [the refugee gardeners] are required to have been in a community garden before, which is a community garden in our program. And then people have to go through an interview process … They have to have transportation to be able to get out to the farm. And at their community garden plot, they have to have proven that they want to garden and have done so successfully.” He continued: “We like to see people that are more interested in having a business. But it’s really hard for people to know if they want the business when they’ve just been at a community garden here.” For the business development program, Global Greens divided it into two segments: Beginning Market Farmers (BMF) and Advanced Market Farmers (AMF).

Farmers participating in the business development program must attend trainings taught by Global Greens staff and their partners. These classes took place in both classroom
settings and through on-farm training. In addition, farmers could have one-on-one meetings
with staff, based on their goals and stage in the business development program. The Global
Greens program provided support based on participating farmers’ needs and goals. CFO 01
explained: “The assessments, we do that to figure out what people’s skills [are] and then also
we do our checkups during the year. So, we do the skills assessment and we help people
create goals … we also, as a program, have goals for people. So, we have outlined what we
consider to be success, but then we also want to know what each person thinks is success.”
He added: “We don’t treat people differently based on who they are. We treat people
differently based upon their goals and their outcomes.”

The BMF program served as an upgrade from a small garden plot at a community
garden to a 50 x 50–sq. ft. plot at the Global Greens Incubator Farm. CFO 01 said: “We
interview everybody who wants to be part of the business development program … There are
people who more or less just want a little bit more land so they can grow more food for their
families and have a little bit of income, but it’s not going to be feasible for them to have a
full-time business. So, we don’t do as much work with them to create a business plan or
anything.” The farmers were permitted to continue farming on their plots as long as they
showed their commitment and met the goals which they created with Global Greens staff
every year. “As people sort of feel that they found a good size of land or things like that, then
we kind of withdraw our services in terms of business planning and things, not because
they’ve failed, but just because they’ve sort of succeeded in finding what’s comfortable for
them. And then we continue to let those farmers continue to grow on land that we let them
use,” CFO 01 said.
In order to move from BMF to AMF, the BMF farmers were required to interview with the Global Greens staff again, after meeting all goals independently for the years they were gardening. Farmers in the AMF program participate in additional one-on-one meetings with specialists from Global Greens and LSI to create a business plan and develop steps to meet the goals in this plan, according to the farmers’ expectations and commitment. Farmers who want to expand their production could apply for a new 50 x 50 sq. ft. plot for each new season, up to four plots during their time at the Global Greens Incubator Farm.

All BMF and AMF farmers are required to attend at least 50% of classes offered by GG staff every year. CFO 01 said: “We offer classes in organic production, food safety, production efficiency. We also have a beginning recordkeeping class, a class on financing, classes on pest management and disease management … classes on how to plan out your garden like crop planning, business planning. We have production and farm management, harvest wash and pack where the food safety comes in, and then recordkeeping and finances. We have classes … to make sure that people are not just able to grow good plants, but then they also know how to make sure it’s clean for the customers, and then they know how to market those things too.” Classes were often taught annually in the winter from December to March during the off-season.

**Phases 4 and 5: Independent Farming - Partial Transition and Full Transition**

For any farmer wishing to progress along the independent track, Global Greens staff conducted an annual assessment to determine farmers’ progress and goals. Farmers who were interested in having their own business normally were required to be in the AMF program for a few years in order to show the program leaders their independent capabilities. They had to have demonstrated good recordkeeping skills, attended classes, created their own goals and
worked independently towards those goals. The Global Greens staff provided more one-on-one meetings in order to help these farmers create a more realistic business plan with crop planning, market research and preparation, and finance, including grant and loan applications. Depending on the extent of available land, farmers could farm at the Global Greens Incubator Farm and some other smaller land (Partial Transition) or on another property, completely outside of the Global Greens Incubator Farm. CFO 01 explained their process: “We make sure that everybody has a business plan in place … Everyone does an interview and we look at their growth as they’ve been developing a business plan … We also have a better set of prerequisites, we have a checklist, we have a history of how many classes people have gone to, and we also take into consideration what each individual family’s capacity is. So, we asked people how we try to help them understand what it means to be a full-time farmer and get them access [to land] whether or not they feel like they’re ready for that, after they understand the time commitment and the money.” The organizers also examined the farmers’ conditions required for an independent business, such as personal transportation, financial situation, and loan opportunities. If the farmers did not meet these criteria, they would be required to remain at their current stage in the program, until they met the criteria.

Among the four graduate farmers from Global Greens, three were renting farmland, and one had purchased land, at the time of the interviews. Global Greens maintained their support of these independent farmers, by continuing their consulting services, buying produce from these farmers for their CSA program, and allowing them to sell their produce at the LSI Refugee Farmers’ Market. Four graduate farmers also rented their own booth at the Des Moines Downtown Farmers’ Market for several years. At the time of the interview,
Global Greens had not had any new graduates, but they were building a new cohort towards independent farming by assisting with their business plans. In 2020, Global Greens secured a new, larger section of land in the Des Moines area where some of the AMF farmers will start the process to become independent farmers.

**Organic Practices**

All of the interviewed farmers, as well as most of the farmers at the Global Greens Incubator Farm, had a strong background in organic and natural farming from their home countries that they carried with them to their work at GG. Farmers at Global Greens said:

“What I know is that in my country all food is organic” (FMR 02). “I came to the U.S with the background [of farming] that I have only eaten the produce which I grew back home without chemicals. It’s all organic” (FMR 03). “All organically. That’s the reason why I miss the food. Here it [organic food] was too expensive if I were to buy [it]” (FMR 05). “Where I came from Africa, we don’t know if chemicals exist” (FMR 06).

The GG staff considered following USDA organic regulations as very important on the farm, and farmers were required to attend yearly classes on organic practices. In this class, CFO 01 and CFO 05 taught farmers about basic regulations from USDA, including food safety, origins of seeds, pest management, crop rotation, use of cover crops, and use of organic pesticides. All nine farmer interviewees cited that they were following organic practices which they learned from the Global Greens’ training. They knew that their seeds and seedlings, provided by Global Greens, were organic. If there were any issues with insects and diseases, they would seek advice from CFO 01 for pesticide and herbicide recommendations that were compliant with USDA-NOP rules. All of the interviewees said they did not use any synthetic chemicals for their crops.
Most farmers planted various vegetables together and rotated their crops on each individual row every year. FMR 08 said: “You have to make a rotation because if this year I use it to harvest beets from here [and] if next year I continue to use it [the same row or plot], I cannot have a good harvest. And the grasses will exceed because the soil is very tired for another time of harvesting.” However, the farmers were not familiar with the use of cover crops in the U.S. In order to maintain a cover crop, the Global Greens Farm Manager (CFO 01) would seed cover crops on several of the plots every year. This method would ensure a rotation of cover crops across the farm, so that some plots would receive the soil nutritional amendment from cover crops every year.

At the time of the interview, although farmers and CFOs followed certified organic regulations and practices, the produce at the Global Green Farm was certified as “naturally grown,” which is less expensive than certified organic and is based on peer inspections, as opposed to impartial, third-party accredited certifiers required by the USDA-NOP (CNG, 2020). According to the CFOs, organic certification would require additional funds and effort for the CFOs, as well as the farmers. Moreover, according to the CFOs, the farmers were satisfied with the price they received at the farmers’ market and in their CSA program, although the farmers were not queried on this aspect during the interviews. Explaining about a survey conducted through CSA members, CFO 05 said: “We took a survey of customers last year and people don't really care that it's organic, to be honest … The most important reason people joined our CSA is because they wanted to support former refugee farmers. The other reasons are buying locally grown produce, developing a healthy food system, knowing where my food comes from, or buying organic produce. Buying organic produce was very important or important to about half the people. So, to me that says some people care, but us
certifying doesn't [matter]… Getting certified would help us sell at a premium if we're selling to some grocery stores.” Moreover, he added that, since the majority of the produce from the Global Greens Farm was shared between the communities, with the remainder sold to markets, the cost of organic certification may not be warranted, but no data was presented on this aspect (i.e., the increase in income from selling certified organic produce versus the cost of certification).

**Food Safety on the Farm**

The Lutheran Services in Iowa (LSI) Global Greens (GG) Farm has adopted the most rigorous training in food safety for its farmers, among all the community farms in Iowa that were surveyed. Members of GG management, translators, and two refugee growers had completed the Produce Safety Alliance Grower Training at the time of the interview. The GG farm management team (CFOs 1 and 5) provide an annual, 3-hour, basic food safety training for its members in the form of lectures and hands-on activities. An important recommendation deriving from the GG interviews and observation research in 2018–2019 was that additional food safety education was needed to change behaviors on the farm and in the packing area. Specifically, research indicated a lack of food safety knowledge in the following areas: (a) improper use of safe practices at an integrated farm where animals or manure could be co-located, (b) lack of knowledge of proper biological soil amendment application, and (c) limited information on the importance of washing produce.

Additional Food Safety trainings for Global Greens (GG) members are being supported by a grant from the Iowa State University (ISU) Agriculture and Natural Resources (ANR) Extension and Outreach program, beginning in December 2018, and continuing through Summer 2020. The goal of the project is to train 26 families
(approximately 75 individuals) from Bhutan (n=8) and Burundi (n=18), who farm at GG farm or their nearby farms in the Des Moines area.

At the Focus Group held at LSI office in Des Moines, Iowa, on January 11, 2020, 20 GG farm participants were queried by ISU instructors on their awareness of food safety issues and practices. Among the questions asked were their knowledge about food-borne illness outbreaks and what specific practices they use on the farm to prevent food-related illnesses related to post-harvest handling, personal hygiene, hand washing, manure management, and field equipment cleaning, such as field totes and containers.

**Food Safety Awareness: It Starts with Hand Washing**

The Global Greens (GG) farmers who had gone through Food Safety training at GG expressed an awareness of how people can get sick from contaminated produce, and the importance of food safety practices to prevent illnesses. Farmers at the Focus Group were aware that practices, such as washing hands, produce containers, and packing surfaces, were important to everyone, particularly American consumers who like to eat uncooked greens and vegetables, since cooked greens were more common in the farmers’ countries of origin. Wearing disposable gloves for harvesting was also part of the training and is followed to a good extent at GG. The farmers also were aware that the more vulnerable populations for becoming ill from contaminated produce were children and seniors. Oftentimes, children are present on the community farm, so training children to wash their hands often, and to avoid touching produce that will be harvested, will be important in enhancing food safety practices at the farm.

Having a separate area, away from the garden, for consumption of personal food is one area that could be improved at GG, in order to avoid cross-contamination from
potentially contaminated food from home back to the vegetables to be harvested. The farm
does have a buffer strip in the center of the farm where picnic tables and a shade structure are
provided for the community gardeners, along with a set of bleachers along the barn where
people can sit. A fully functional rest area, complete with restrooms, would greatly benefit
the gardeners, along with facilitating improved food safety on the farm. Cross-contamination
is also avoided at the farm through the policy of sick gardeners staying home and not
working until fully healed.

**Harvest Practices**

Harvest containers (totes) are provided by LSI, and, because they are plastic, are
easily sanitized between uses. The farmers in attendance seemed aware of the need to
examine produce and bins for any signs of contaminants, such as dirt, or fecal matter from
dogs or horse manure. The LSI-GG staff provides hand soap at the hand-washing station and
dish soap to clean totes. One suggestion that came out of the training would be to have raised
areas (on a truck bed or movable platform through the field), where harvest totes could be set
once filled. This raised position would prevent produce from touching the ground to avoid
any dirt or potential contaminants. Cleaning of personal harvest tools (clippers and knives) is
practiced to some extent on the farm, but this practice, more than others, requires a constant,
readily available supply of disinfectant while harvesting, which is difficult to maintain.

The GG farm was one of two community farms in Iowa that has a cooler for
maintaining proper produce temperature after harvest. Placing produce as soon as possible in
farm coolers helps with both improving post-harvest shelf life and produce quality. Most of
the GG farmers use the cooler that is located on the farm, which should enable greater sales
from fresher-looking produce. The LSI-GG staff does not provide any sanitizer to farmers,
but occasionally sanitizes the wash station area, using a bleach solution. No sanitizers are used on the vegetables produced on the farm, which is applauded, due to potential misapplication of sanitizers containing toxic substances (Shaw et al. 2013).

**Biological Soil Amendment Application Practices**

Crop rotation is practiced on the GG farm, but manure provides the primary source of essential nutrients for the vegetable crops. There was some confusion, among the Focus Group participants, about the interval between manure application and vegetable harvest, as some farmers thought they could apply manure to vegetables that “will be cooked” at any time, but both Food Safety and certified organic rules require that vegetable crops be fertilized with raw manure at least 120 days ahead of harvest. Thus, the company that supplies the raw horse manure for GG farm has been directed to deliver the manure in the fall, so the manure can be applied and tilled into the garden at least 6 months ahead of harvest.

**Continuing Education**

Many GG farmers expressed interest in a series of continuing trainings concerning food safety. They recommended the creation of a simplified food safety training manual for anyone who farms at GG or anyone who visits the farm, including volunteers. Among the training modules, they recommended step-by-step instructions, in both English and the native language of the farmers, regarding washing hands, produce and containers, and methods to avoid cross-contamination. Thus, there was a genuine interest in improving food safety on the farm.
Markets

**LSI Refugee Farmers’ Market**

Among the dozens of farmers’ markets in the Des Moines Metro area, the LSI Refugee Farmers’ Market stands out as a unique site where culturally unique vegetables are sold directly by the GG producers. Produce at this market is grown by current and graduated farmers from the Global Greens Farm. The market takes place from 9 a.m. to 1 p.m. at 3200 University Ave, Des Moines, Iowa, from early June to late October, depending on the weather. Refugee farmers are required to register for their booth and pay a small fee. Normally, there were about 10 to 14 booths every Saturday in 2019, with the majority of vendors from Africa. At the market, customers can pay with cash, credit cards, SNAP/EBT, WIC and Senior Farmers’ Market Nutrition Program checks, along with Double Up Food Bucks (DUFB), where SNAP Card purchasers will receive a dollar-for-dollar match of up to $10 in DUFB that can be spent on fresh fruits and vegetables grown in Iowa. The farmers at Global Greens could also sign up to sell their produce at the Global Greens booth at the Downtown Des Moines Farmers’ Market every Saturday during the season.

The customers who frequented this market ranged from native-born Americans to New Americans, from around the Des Moines area to other counties, even from other far away states, such as New York, Texas, Missouri, and Kansas. The customers who came from other states often bought in bulk, filling their back seat and car trunk with these unique vegetables, especially the lenga-lenga and African eggplants. The vegetables sold at this market were diverse and representative of the many cultures at the GG farm. Some of the specialty produce included lenga-lenga and mchicha (amaranth), long beans, pumpkin and squash leaves, sweet potato leaves, okra, Thai chilies, roselle, bitter leaves, bitter melon, shell
beans, and African eggplants. Different kinds of breads and cakes were also sold here. Sometimes, customers could find fish imported from Africa in this market, and traditional dresses, head scarfs, and hats. In addition, the farmers also grew typical American vegetables, such as potatoes, tomatoes, cucumbers, carrots, squash, zucchini, beets, cabbages, lettuce, kale, onions, green beans, snap peas, and herbs.

The market also served as a social gathering place. During the market sessions, traditional music would be played through a portable speaker. It was not unusual to see farmers and customers dancing together. Children of the vendors would help their farmer parents with loading and unloading, selling, and handling of produce for customers. The older children would help take care of the younger ones while their parents were working at their booth. This support helped strengthen their community and saved childcare costs. Also, farmers and their children were seen eating vegetables as snacks at the market, enjoying their own produce very much.

**CSA (Community Supported Agriculture) Marketing Scheme**

The Global Greens CSA was established in 2016 and offers boxes of produce from the GG Farm. The number of subscriptions in 2019 was 154. There are three levels of participation: the Abundant Box at $504 with weekly boxes from May 28 to September 24 (18 weeks); the Generous Box at $265, available during the same period, but on a bi-weekly schedule for 9 weeks; and the Fall Box from October 1 to October 22 (4 weeks). Pick-up locations include the LSI headquarters in Des Moines, the Valley Community Church in West Des Moines, and the Lutheran Church of Hope in Ankeny, Iowa. Home delivery in Des Moines costs an extra $5/delivery. In 2018, the Global Greens CSA showed 80% annual growth.
Benefits

The Global Greens program provided many benefits to immigrant and local communities. Farmers were able to not only grow food for their family, but also sell their extra produce to the CSA and farmers’ market, thus, impacting their finances in a positive way. CFO 05 said: “The biggest impact of the CSA is monetary. Farmers have a guaranteed market, and they really liked that. People like knowing that ‘Hey if I plant cucumbers at the beginning of the year and they're ready on certain days, I guarantee this sale.’ And people really like that. And they like our prices too. We have a pretty, I would say, really good wholesale rate because we still have to mark it up to sell to our customers. But compared to what you could get anywhere else at the volumes that farmers are selling them to us, which is pretty big volumes, people are getting really good prices.” He added: “Programmatically, I think our program accomplishes a lot more than just financial aid, helping people financially and honestly the finances are probably about the smartest way we help people. We'd like it to be more important, but honestly, the numbers aren't huge in regard to what people are actually making.”

Other benefits were “having more culturally appropriate food” and “increasing cultural heritage,” similar to what was reported by other community farms. Immigrant farmers faced innumerable cultural shocks, including new foods, upon arriving in the U.S., and the lack of foods from their home countries added to the stress of establishing themselves in their new communities. Moreover, the price of food was said to be “too expensive” by many farmers. CFO 01 said: “We're growing a lot of different types of crops here from seeds that people have saved that are specific to their cultures. So, growing amaranth greens or specific types of eggplant or other types of leafy greens that you can't get in the
supermarket.” He added: “I think is a really big benefit, because, like I said, it's usually the parents of the family who were the ones who are gardening and then they can make the food that was traditional to their countries, whether you know the Burundians are making some kind of amaranth green recipe or a potato recipe or the Nepali people are making a daikon radish or mustard green dish that I think it's, there's a lot of benefits of people teaching their children traditional cuisine but also getting them to the farm and seeing where their food comes from, because people [normally] get their food from supermarkets.”

CFO 05 expressed that the community farm gave people a sense of identity and improved their physical health. He said: “A lot of people have this identity of farming, being a part of growing things, and a part of the earth. So, it was just kind of that reconnection of getting people back to their identities, and also being able to pass on this incredible cultural heritage they have in farming and working the land and being much closer to the land, to their families, to their kids, so they don't lose that when they come here [to the U.S.]. And just the impact it has on people being able to eat, it goes along with physical health… people have vegetables that they are familiar with, they can access these vegetables, they can eat. And so, it's really impactful to people's health.” The community farm and farmers’ market worked as a bridge to connect the communication gap between New Americans and native-born Americans. CFO 01 said: “I think there’s some community integration too; our farmers go to farmers’ markets and then they meet American people. And so then, I think they formed some relationships and friendship. They overcome some barriers to talking to people, and it becomes a normal thing instead of having the communities separate…we have a farmer’s market where anyone can come, and I think that helps build community between Americans and our farmers.”
Also, actively growing and marketing their crops provided farmers a place of belonging, a sense of empowerment, and better mental health. CFO 01 told a story: “We have one woman who’s over 65 years old and it’s not feasible [for her to be alone]. She's going to learn English very well. She's probably not going to learn to drive. So then if she didn't have the garden, if her kid didn’t drop her off at the garden every day, she would have nothing to do. If she sits at home, she wasted her time, and I mean, I know I've heard a farmer in the program say, ‘Oh, when I don't have the garden I feel sick’ because they just sit at home and watch TV. And so, I think it gives people a sense of contribution to their families who otherwise maybe wouldn’t have a way to contribute food or money in this society here.” He added: “I think, our graduate farmers are finding that farming doesn’t make them a lot of money but that they still love doing it because they’re their own boss. And I think it gives them respect within their community to be growing crops that people really love and can’t get in the stores. And I think it also, it gives them a lifestyle that they're proud of. They're proud of their lifestyle, I guess even though they're not making a lot of money and there’s value in it.” FMR 06 said: “There is nobody to supervise me. I am my boss of myself.”

The eleven farmers interviewed at Global Greens cited many benefits of community gardens/farms. The most cited benefit was “having more fresh, healthy, organic, culturally appropriate food” (n=7). FMR 02 said: “When I came over here [to the U.S.], they were talking about the food. Those foods came from cans. A lot of them I didn’t even eat when I was in my country. So, when I came over here, I thought ‘Now I managed to eat those foods. How can I get it?’ I was thinking about that problem alone. But when they put us together in the community farm, having those foods open to me. I can have those foods, the same food from my country. I can manage a garden to grow these. That’s a lot of help.” FMR 03 had
similar thoughts: “I like to farm because I came to the U.S with the background [of farming] that I have only eaten the produce which I grew back home without chemicals. It's all organic. And I have the same task to grow produce myself and stay healthy.” FMR 05 also emphasized the organic nature of his produce: “The reason why I'm farming is because I need organic food. In this country, organic food is too expensive. If I farm, I can eat good food because here at Global Greens when we grow our own food, we mostly don't use chemicals. Here [in the U.S] when they farm, they might use chemicals to make sure that the foods look good. So here [at Global Greens], it's organic.” FMR 06 also noted the importance of providing food for his family: “[Farming] helps me to get greens/vegetables at the amount I need or want for my family,” while FMR 08 also emphasized the value of knowing the origin of your food: “I do it [farming] because I can find fresh food for myself from my garden. It’s very important because in America, people eat junk food. You can see they’re big because they don’t check or control their kinds of food. And sometimes, it brings sickness to somebody.”

Another benefit cited from the farmers was “financial benefits” (n=6). FMR 01 said: “We sell them, and people buy them. And it also helps us to find the [sic: earn some] money.” Others cited: “They [the produce] helped because we had a lot of food that in our community, people can buy from us and can eat the food. We get some money then we have some food at home to eat” (FMR 02). “I saved money costs for the groceries. I produced myself vegetables and I can keep that for the whole winter. I can use it. And the money which I spent in grocery, again, I can use for different purposes” (FMR 03). “I can find the money. I can bring my harvest to the market, and I can find the money. Money can help me pay the bills in America” (FMR 08).
Three farmers (n=3) said that the Global Greens Farm helped them with social interactions and knowledge gain from “meeting, sharing knowledge, and creating friendships with other people from different cultures.” They said: “We are friends because most of us just came from a different culture. But when they agree to come to the Global Green Farmers’ Market, they get to know each other more and create friendship … We do learn a lot because most of them, they’re from different cultures. So, they will look at this plant and be like ‘How do you guys grow this plant?’ Maybe they will be able to tell him this is how we can grow this plant. And for him for next season, he will be able to plant exactly the plant according to the instruction they provide him to do” (FMR 01). “There, at the farm, have farmers from all over the world, different countries, and we can interact with each other. They can see my vegetables, what I am growing, and I can see what they are growing, and we can exchange that too” (FMR 04). “I can meet with other people. I don't know everything, and we can share. We can share some of the culture of their country, of my country because this is a garden, a community. At Global Greens, there are people from Asia, maybe another country. Over here, sometimes we meet them in the meeting when you go to study at LSI. Also, the culture to meet with the people. That's very important because sometimes we can have another idea from outside, maybe it can help you to get some goals” (FMR 08).

Other responses about benefits of community gardens/farms were: “Vegetables grown at the farm taste better” (n=2). FMR 01 said: “It's very important because when I harvest food right away, it tastes better compared to what I go buy from other stores.” “Physical exercise” was also cited (n=2): “If I work eight hours in my seat, and if I come home and sleep, my body does not function actively. But if I go to the farm and if I work for a couple hours, then I'm physically active. Exercise, everything is good” (FMR 03).
“Keeping family tradition” (n=2) and “Teach children where their foods come from” (n=1) was cited as a benefit, similar to that expressed at other community gardens. FMR 04 said: “I like to farm because my dad has spent his whole life farming. And coming here to a different country, kids do not know where the foods come from. They see only in the supermarket. I want to teach them, and I want to show them it comes from the soil and we can grow by ourselves.” Other responses related to benefits included: “release stresses” (FMR 04), “reminding of their culture and tradition” (FMR 04), “good for health” (FMR 03), “good for community” (FMR 02), “giving hopes and helping with loneliness” (FMR 02), “Reminding of previous career [farming]” (FMR 08), “Teamwork between farmers and organizers” (FMR 05) were also cited.

**Challenges**

Despite many benefits, organizers and farmers also faced many barriers. For CFOs, most of the challenges were land access, funding, understanding how the agricultural and financial systems work, lack of business and technology skills, communication, and language differences. When mentioning about land access, CFO 05 said: “We have farmers that are capable of growing on more land, but we don't have it. We need more land.” CFO 01 added: “We have a waiting list of 100 people, so I think that's an indicator that people are liking it, that we don't have enough space for everybody … We have a goal to have a larger site … If we have a larger site, we can. The people who have business plans, we can move them all to one shared location where they can continue to grow their businesses and have long term land access and leasing … So, the largest site, to where farmers can grow their businesses for long-term is kind of where we're going.”
Regarding communication challenges, CFO 05 said: “We can talk about barriers that are specific to this, like segments of farmers [who experience] language barriers, barriers to using a computer to get customers or promoting yourself. And just like cultural barriers too, time has been a really big barrier in communication for people that are trying to sell through the Iowa Food Co-op or sell to restaurants or something.” Talking about communication, CFO 01 expressed: “We'd like to do more to hire more refugees and immigrants who speak the languages of the people that we’re serving who have the skills to do it. That’s the big thing is that we can't hire people who don’t have the skills to teach people. So, that’s a long learning curve, to get people who could take over my job as a farm manager. But then, we could save money on interpreting because people could just interpret and teach in their language instead of having an extra person.”

The organizers also addressed the food system in Iowa as a barrier. CFO 05 said: “Being a farmer in Iowa, a vegetable farmer in Iowa, is hard. Like not very many people make it. Not very many people make it as a business. Because the food system here is just commodity driven. So, prices aren’t great if you’re selling in volume, if you're selling through conventional ways, selling it to grocery stores or something to a distributor or something. The culture in Iowa for vegetables, people in Iowa don’t eat a lot of vegetables. Just in general, I think, the Des Moines area of MSA or metropolitan statistical areas in the U.S. ... maybe it's changed in the last year, but last I knew Des Moines was like 187 out of 188 in fruit and vegetable consumption. So that's terrible if you’re trying to sell vegetables because people just don't eat. People eat meat and potatoes a lot ... There’s not a culture around, there's a culture of farming in Iowa, which is an advantage, but there’s not a culture of vegetable farming. There’s not a culture of buying and eating fruits and vegetables, I
guess. So that’s a barrier for everyone. Everyone who’s vegetable farming in Iowa, not just our farmers.” CFO 05 also expressed his concern about keeping the CSA program viable. He said: “As far as the CSA goes, the barrier is ‘Can we grow up more?’ I think it needs to grow more. Farmers want it to keep growing. But it's not paying for itself, I guess. So, if we want to break even with our CSA, then we need to sell more shares so that we can make more money off it, so we can cover our costs. And right now, we're not covering our costs.”

Placing a monetary amount on the intangibles (improved health, greater social interactions, enhanced integration into society, improved business skills) could help demonstrate the value of the farming and marketing operations at Global Greens. This accounting could help secure matching funds from governmental and private donors to support the program in the long term.

**Case Study: Strong Awareness of Organic Practices**

**Background**

This farmer (FMR 11) has been a participant at the Global Greens Incubation Farm in West Des Moines, Iowa, for five years. She first became aware of the project through her Burundian friends who were working at Global Greens at that time. At the time of the interview, she was farming on three 50 x 50–sq. ft. plots where she had been spending 40 to 45 hours per week. She was hoping to get a fourth plot in the coming season. FMR 11 had a strong background in organic farming from her farm in Burundi. She had been farming for 48 years, since she was 16 years old. Back in Burundi, farming was her primary career where she could “sustain herself, financially and food-wise.” She gave an example that, back home, when she had ten big bags of beans, she would “keep one for myself and my family, two bags for seeding next season, and sell seven bags to the merchants.” Everything she grew
would be turned into food for the family, preserved for future seasons, and/or sold to the markets. She would invest her profits in a herd of small animals like pigs and goats.

Farming Practices

FMR 11 used traditional techniques she learned from her home in Burundi. She said, “I prefer the African way because it is easier for me. I try to incorporate the techniques I used back home into farming. Here [in the U.S], one type of plant will be seeded in one row. Back home [in Burundi], I would mix different seeds in a row because different seeds have better connections with the land.” At her garden, wherever she planted, there would be corn and beans at the corners, in between rows, or around the edges of her plots. “I want to diversify the seeds within the land so not just one seed [kind of plant] can suck up all of the moisture [sic: nutrition and moisture]. There are some seeds [plants] that take a lot of moisture, but some leave moisture in the soil,” she said. Although this farmer used to rotate her crops, she did not know about the use of cover crops. She would just let “nature take care of her plots” [allow for a fallow period] for a while before growing in those plots again. She has focused on organic farming by not using GMO seeds and any other chemicals in the U.S because that was her only way of farming when she was in Africa. She said even back in her country, “using the tiniest bit of chemicals could ruin the produce.” FMR 11 wanted to grow organic food to ensure good health, not only for herself, but also for her customers.

Food Safety Practices

Back in Africa, the main soil nutritional amendment for FMR 11’s farm was a combination of cow manure, grass, and green waste, which were mixed and allowed to compost before applying. When asked about food safety, FMR 11 could not specify the time period between applying manure and harvesting crops, but she knew that she had to wait for
a while before harvesting. FMR 11 knew that she should wash her hands multiples times, rinse containers and produce before traveling to the market to avoid cross-contamination of harmful microorganisms between humans and produce. She said she learned those practices from the trainings at Global Greens and they helped her create a healthier situation.

As for challenges, FMR 11 is still dependent on her family for farm transportation and adhered to the fact of “wasting time” waiting for rides. Also, language is a large barrier for her, since her English is restricted, and there are no English tutors available near her current home. She stated that her health was also a minor challenge. However, FMR maintained her daily visits to the farm in the season because farming “entails physical exercise”, “aids her health”, “she has a strong passion for farming”, and she derives income from the farm. She said: “Most of the vegetables I plant, I bring home and eat them. This is my main source of income right now.”

**Ethnic Minorities of Burma Advocacy and Resource Center (EMBARC)**

**Background**

This all-women community garden is managed by participants of EMBARC and coordinated by the University of Northern Iowa (UNI) (EMBARC, 2020). The garden was established on four vacant city lots in Waterloo, Iowa, in 2017. About 12 to 15 food-insecure women participated in the initiation of this project. The project is a part of the Community Producers Program (CPP), which provides economic empowerment opportunities for refugee women in Waterloo. This is a partnership initiative of UNI, EMBARC, AmeriCorps VISTA, First Baptist Church, and First United Methodist Church. According to the Iowa Women’s Foundation, CCP provides workshops that help “remove barriers and foster the development of skills such as business management, customer service, cash handling, marketing, and food
safety. Participants who complete the CPP have the opportunity to participate in the market garden. By combining this educational opportunity with the participants’ existing agricultural background, women are able connect to local markets, generate new sources of income and build food security” (Iowa Women’s Foundation, 2020).

The majority of participants in this project were from Burma. In interviews with four participants, including one community leader, several themes were discovered. Initially, to start the garden process, community leaders who were working at EMBARC sought out people who were interested in gardening by calling everyone in the community. According to a gardener: “FMR 19 [a community leader] works with EMBARC. She called our people in the community to see if anyone wants to join the training at the community garden.”

Among these four interviewees, three (n=3) had participated in the program for two years and had a small garden in their backyard at home, and the other (n=1) just joined and had no garden. When asked about employment status, three (n=3) participants were working full-time, and one (n=1) was not. From my observations at this community garden, the younger gardeners had no or little experience with farming because they moved to the U.S in their teenage years, while the more mature gardeners had experience with farming, especially growing rice on large areas of land in Burma.

When asked, “Why do you farm”, the most cited responses were the following: “I enjoy eating or having fresh vegetables” (n=4), “Gardening helps with relaxing” (n=2), “I save money by growing instead of buying expensive unique vegetables in the supermarkets or Asian stores” (n=2), “Gardening helps during unemployed time” (n=1), and “I make friends” (n=1).
Food Safety Practices

When asked about Food Safety trainings, the interviewees said they attended a training where they learned how to clean their hands or put on gloves before harvesting in the garden. One gardener (FMR 20) said, “We did not use [these practices] in real life, such as washing your hands like this. No. We only learned how to wash our hands on the screen [videos and presentation slides].” With the current situation at this garden, food safety practices are limited. At the time of the interviews, the garden had no running water, toilet, or shelter. After harvesting, some gardeners had to transfer buckets of water from their nearby homes to the garden, and they rinsed their produce in these buckets. The produce would be later sold at an Asian grocery store in town.

Markets

The produce in this garden was harvested, shared, and approximately 30% was sold at Asian grocery stores in Waterloo. The profits from sales were reinvested into buying tools, seeds, and other materials for the garden. One gardener (FMR 20) said, “Everyone owns this garden. And then we share after we pick. If someone wants this, they can pick it and take home. When we sell and get the money … we kept all the money. I think we used it to order seeds as a group.”

Benefits

The gardeners grow a variety of unique vegetables including roselle, water spinach, bitter melon, and long beans. As one gardener (FMR 19) summed up the benefits, she said, “For me, this garden is a family. When we are at home, we feel lonely. But when we come to the garden, we see each other, we make more friends.” These statements mirrored sentiments
from gardeners at other community farms, including “reconnecting with nature and tradition” and “mental health improvement.”

**Catherine McAuley Community Garden**

**Background**

The Catherine McAuley Center (CMC), located in Cedar Rapids, Iowa, helps promote the well-being and dignity of individuals in need through a variety of programs for refugees, immigrants, and women experiencing crisis. Regarding refugee and immigrant support, CMC offers learning opportunities to adult learners, employment-readiness education, job-seeking support, and community assistance (CMC, 2020).

In 2011, the CMC Community Garden adopted the Gateway Garden, a plot owned by the Wellington Heights Neighborhood Association in order to create opportunities for women in CMC programs to learn about fresh foods (CMC, 2020). This garden is located next to two resident houses belonging to the CMC Transitional Housing Program. At the time of establishment, according to the current organizer (CFO 09), “It [the garden] was meant for the housing program as a way to bring the women together, the community to the garden, and was seen as a way of building skills, first of all, towards growing food because that was a new experience for a lot of women in that program, and hooking them with that food [from the garden], and using fresh food in their cooking.” In 2017, the CMC opened this garden to immigrants and refugees as they saw an opportunity to bring all of the programs together to share in one common space as “a community building effort, connecting clients with each other and with other parts of the community.” CFO 09 added, “Many of our students face food insecurity … Many of them were very dedicated food growers in their original countries. And, so that’s a way [gardening and farming] for them to continue doing
that here … Access to land is a huge issue, so we have this land available and we can put that into service of our students.”

The gardening program for former refugees was started by sending surveys to students and clients of the CMC. Then, the Center provided plots to those who signed up on a “first come, first serve” basis. The community garden organizer asked for no fee, but participants had to sign a community agreement form. If they had any questions or problems, they had to speak to the program leader (CFO 09) first. Most of the participants were from Africa and were experienced farmers in their home country. There were also students from Central America and China.

The CMC community garden was supported by their volunteers who loved gardening and wanted to help. CFO 09, who admitted to having limited experience in gardening, said: “We have a lot of volunteers engaged in the program and a lot of those volunteers are excited about gardening too. So, the idea was if we had anyone who was really adrift and didn’t know what to do, we can connect them with a mentor who could give them a sense of advice and help them along.” Besides that, the community garden also received support from the Linn County’s Master Gardeners, including “being very involved with the planning process with us each year in helping us get it together … doing some workshops about gardening.” CFO 09 added that she found a lot of her students were very experienced in gardening, so they tried to tailor the workshops with Master Gardeners “more towards gardening in Iowa and being aware of the climate, which is quite different from what a lot of people are used to. And there are different pests and diseases.” However, attendance in these classes was not satisfactory because “people did not see gardening as something to take classes about. It was not necessarily something that there was a great deal of interest from people coming [to the
classes] and having a structure of an educational experience.” So, instead of trying to train in typical Masters Gardeners gardening topics, the community garden organizer (CFO 09) switched to a different model where she would check with the participants as the garden was progressing and connect them to volunteers or Master Gardeners if they had any problems or questions. As for the facility, gardening tools and materials were stored in a garage belonging to the CMC’s Housing Program. Compost was provided for free by the city of Cedar Rapids and picked up by CFO 09 whenever it was needed.

**Markets**

At the time of the interview, there was no restriction against selling produce at the CMC community garden. CFO 09 said: “I believe that most of them are just going to use for their own use and for their family. But if someone chose to sell their produce, then that would be okay. That’s something I think I see as a potential for growth because we do have kind of an arm of our agency that does employment services and support for people who are looking for an economic opportunity. And so, developing our programming a little bit more with the garden, it could potentially move into selling.”

**Matthew 25 Community Gardens**

**Background**

Matthew 25 is an independent, 501(c)(3) nonprofit organization in Cedar Rapids, Iowa, established to “empower people to transform neighborhoods” (Matthew 25, 2020). When the neighborhoods on the west side of Cedar Rapids needed help recovering from the 2008 flood, Matthew 25 “partnered with other organizations to invest more than $6 million to empower residents to rebuild 25 blocks and renew their neighborhoods – Block by Block.” The name “Matthew 25” is based on the words of Jesus in this verse in the Gospel of St.
Matthew, promoting altruistic community work: “For whatsoever you do to the least of your brothers and sisters, you do unto me” (Matthew 25: 34-40). One of the Matthew 25 programs is the Cultivate Hope Community Gardens, which were established to “connect gardeners and small-scale farmers with resources to grow food and build community bonds.” The organizers worked with the City of Cedar Rapids to allow urban farming on the previously flooded and vacant property that they now own. CFO 10 recollected: “We developed this whole new urban agriculture permit with the city because before then you couldn't grow food on a certain amount of land. You could have basically a little backyard garden, but you couldn't grow a lot of stuff. And so, we came up with that permit with the city, then we leased this land from the city for five years or so until we had an opportunity to buy it.” In addition to the main site that is owned, Matthew 25 has gardens at a nearby church property, which donated the land to Mathew 25 for the gardens. The programs of Matthew 25 are supported by private and corporate donations and grants.

Participation in the garden costs $30 each year for a small plot (20 x 20 ft.), or $50 each year for a large plot (50 x 50 ft.). The organization provides plot preparation, seeds, tools, compost and water for this fee, and access to the greenhouse on site for starting transplants. In 2019, the gardens produced 30,000 pounds of food. At the time of the interview, there were nine community gardeners, five farmers on half-acre plots at an area church, and a paid staff member who farmed several plots at the main site and helped manage the two to four acres of gardens across the city. Other gardeners, like FMR 23, farm larger parcels (50 x 100 ft.) at the church property.

According to CFO 10, there were four paid employees working on behalf of the gardens: the farm manager and his assistant, the market manager, and the educational manager. In
summing up the demographics and expertise of the former refugee gardeners/farmers, CFO 10 said, “We have six that are African refugees, a couple of people from the Congo, a couple guys from Burundi. One woman is from Karen [Myanmar]. So, all of them, they grew up on farms and now they're living in apartments here in town. They don't need my expertise or anything. A lot of them know more than I do and have better methods growing stuff. So, really all they need is access to the land.”

Reaching potential gardeners has been through word of mouth, and recently, there has been a waiting list for gardeners at the main site. CFO 10 said: “It's kind of first come, first serve and if it goes well in their first year, they'll kind of have first dibs coming back again the following year.” While the plot rental agreement is with one person, oftentimes families tend the plots, as CFO 10 stated: “Some of those plots, it's an entire family and that's definitely more so with the refugees than the Americans that have farmed out here; usually it's just one of them out here. But yeah, that's neat to see the whole family come out here and spend a few hours really maintaining it.” Gardeners visit their plots on a regular basis, as explained by FMR 24: “I use the greenhouse at Matthew 25. So, I start seedlings with them, and then I just transplant them. So, the transplanting and the getting ready took lots of time. Then now, it's just once the plants were established, I will go there twice a week for weeding and harvesting.”

**Organic Practices**

Similar to all gardens surveyed in this study, Matthew 25 uses organic practices but is not certified organic. CFO 10 said: “Our only requirement is that they don't neglect their plot and that they're growing organically. So, they're not spraying any pesticides or herbicides.” Even though some gardeners may use naturally-based pesticides that are compliant with
certified organic regulations, CFO 10 does not encourage their use. Compost serves as the main fertilization source and students from the Iowa BIG program helped construct a compost bin for the gardens. The CFO of this operation appeared to be well trained in organic gardening techniques, and said: “I'm doing cover crops all the time, doing stuff to try to improve the health of the soil, even intentionally planting flowers and different plants to try to bring pollinators and beneficial insects.” Multi-cropping and intercropping were normal practices in the gardens, especially for the former refugee gardeners. FMR 24 intercropped roselle, sweet potatoes, beans, African eggplants, squash (for leaves), tomatoes, habanero pepper, “bitter leaves” (species unknown), beans, lenga-lenga (amaranth), and turnip. She also noted the organic nature of her produce, saying, “And then besides, mine is organic. So it's even better because everything is organic…My definition of organic is that I think it's just like I don't spray anything on there; I just let nature grow it.” FMR 23 said, “Back home, everything is organic because it is natural.” He also noted how valuable his organic produce would be if sold in the grocery store: “My family enjoys [my produce] more than what we buy at some grocery store because the organic food is very expensive, and these foods are not expensive.”

**Food Safety Practices**

Despite the sophistication of gardening practices described, food safety was not discussed as thoroughly. The CFO meets with gardeners at the beginning of the season and explains food safety practices, but he expressed the need for more training. FMR 24 explained her practices as “I just go there and pick up my veggies and wash them.” She was aware of the need for improved food safety practices, however, especially if she were to expand and sell her produce at the downtown Farmer’s Market: “In the future, since I'm
sharing with other people, I want to make sure that it's safe for them.” FMR 23 seemed to be more cognizant of food safety practices, having worked in a commercial kitchen, but his response also suggested the need for additional training: “Some [produce] are required to be washed, then we washed them before we put them in the [plastic] bags like squash, zucchini, spinach. We washed them and put into bags, and when we'll get home, some will go to the freezer, some will go to the cooler.”

**Markets**

While most gardeners at the community gardens grow for their families or share their produce in the community, entrepreneurship is in the stated mission of Matthew 25:

“When these community members gain access to land, they can:

- Grow healthy food for their families
- Grow food that reminds them of their native land
- Start food-related businesses” (Matthew 25, 2020).

There is a market stand in the garden, set up under a pavilion, that is open on Thursdays during the season. According to CFO 10, “And anybody that is low income, you get all of our produce for half off, which ends up being a really good deal.” The market has evolved into a community gathering site where CFO 10 noted that “we do pizzas out of the little pizza oven in there. We set up beanbags and a little ping pong table. So, it's kind of become a cool little thing where community members are walking in.”

**Benefits**

Similar to other gardens, “food security” benefits were cited by the CFO and the two gardeners as key components of their gardening mission. CFO 10 noted that the garden was a particularly important food source for low-income people “because this neighborhood is
what the USDA would label a food desert. Meaning there's not super easy access to a grocery store within walking distance with fresh, good produce.” CFO 10 hoped to increase capacity to feed more people in need, but he said: “From my side of things, I’m growing a lot of produce, and we’re selling a lot of it, and a lot of people that are buying it are from the community.” FMR 23 said farming “was one of the resources that I came up with that will help me to save money for my family.” FMR 23 noted that bringing your own produce home to consume is beneficial “because you feel like ‘I earned my food.’ And it's also that you are teaching your family that depending on yourself is better than depending on a somebody for production.”

Re-connecting with their native foods by growing these crops themselves was also cited as a benefit for former refugee gardeners. FMR 24 explained: “I garden because I can have food that is not available to me in the grocery store. So, mostly what I grow are vegetables from home. For example, I grow over here is a plant. It's roselle. Roselle is a plant that people put in the flower pots. But for me, it’s a vegetable. It’s the sour vegetable.” She shared the roselle with her native Congo community in Cedar Rapids, saying, “Sometimes, they get surprised when I give the roselle because it's not something that they grow here.”

Matthew 25 has an extensive school outreach program, according to CFO 10, with “hundreds of kids coming out here every season” and “farm-camps throughout the year where kids will come for an entire day. They’ll work. We have a full-time education person on staff. So, she runs those.” Another exciting program is their high-school outreach, where they “have 15 high schoolers from all different backgrounds, very diverse group of kids…it’s a two-month long program…So, they're getting paid to work out here, but they also go in volunteering at food pantries and they go work on other farms.” Increased awareness in the
students in relation to their technical production skills and food consciousness was an aspect CFO 10 enjoyed seeing.

FMR 24 identified additional benefits of community gardening that matched the themes stated by other gardeners: “reconnecting with nature, culture, and tradition” and “food security.” She said, “It’s healthy. I eat more vegetables because the ones I harvest, I come home and I eat, and then it saves me money.” FMR 23 reiterated these same benefits and added more health attributes: “It’s a kind of sport or exercise that they can gain [in the garden] because when you work in the factory, you don’t have enough time to go to the gym or walk around their place. So, by doing that [gardening], it helps you to exercise. And it makes you happy because you can’t stay in the house. And then also you are more exposed to fresh air.”

**Challenges**

As with the majority of community farms/gardens in this study, the issue of land for expansion was cited as a challenge by the CFO, who said: “I think we would maybe need to expand the community garden side of it, especially since there seems to be a big need for it.” FMR 24 was gardening on four plots, a total of 160 sq. ft., which was substantial, given the limited time she had for gardening, since she was working part-time. However, she expressed interest in expanding if more land were made available. FMR 23 was also interested in transitioning into farming to support commercial sales, but was restricted due to “not having enough time because of working hours in the factory.” Regarding the interest for gardeners to initiate independent farming, and Matthew 25’s efforts to expedite that process, CFO 10 remarked that they have not started that program yet, but “that is one of the goals. If
somebody wants, and if that's their goal, to start their own business, we want to be here to be that starting spot for them.”

Communication was cited as an issue, but it was not perceived to be as critical as access to additional land, since the CFO and farmers had adapted to their multi-cultural environment. CFO 10 said: “I think just getting to know people's different habits of growing stuff. The first couple of times I walked out and I was like I can't look at this plot because it makes no sense to me. And some people will let their plots get very weedy, but then all of a sudden, they'd come in and just within one day it's looks pristine. So, I think it's just getting used to different styles of growing. Other than that, there hasn't been really any issues.”

Regarding challenges in the garden, FMR 24 felt there were very few issues. She said, “I know it's a community environment, so I go there and I just have to keep it clean. It's working pretty well.” FMR 24 expressed some challenges with language barriers, but like other gardeners where English was their second language, communication barriers were often overcome in solving gardening issues together. She remembered: “There is a friend who eats the squash flowers, and I don't eat the flowers, I eat the leaves. So, we have a partnership, like you take the flowers, I'll eat the leaves.” Communications with other community members also were noted. FMR 24 said, “There is a gentleman that has the plots across the street so I was able to just have a conversation. I told him I can't weed because my hoe is not good and he knew how to sharpen it. So, he showed me like ‘No, you just take this and sharpen it.’ So, that's kind of the interaction I need with the other ones of showing what to do.” Even the CFO 10 noted: “Again, it's given me a whole different perspective of just to think, ‘Wow, I'm pulling this as a weed,’ and other people are planting it and cultivating it and eating it, and it's delicious.”
Basic and advanced organic vegetable production were noted as potential future trainings FMR 24 was interested in attending: “I want to gain the understanding of the soil, or what vegetables grows best over here, because for me, I'm just growing. So, how to do that and how to use the other tools.” She mentioned that one of the challenges that season was the Japanese beetle, which was prevalent in most gardens in Iowa.

A note at the time of writing this thesis, as the COVID-19 virus struck fear in the hearts of all of us, the staff at Matthew 25 penned these thoughts: “Finally, we know that food is the medicine we put in our bodies day after day. People that eat well and do all they can to maintain good physical health are more likely to resist things like the coronavirus. This is part of the reason we feel our mission of serving healthy food and teaching area students about growing good food is so important. The healthier we are, the more resilient we are.”

**Global Food Project**

**Background**

The Global Food Project, Iowa City, Iowa, was established in 2016 to “connect newly arrived and established Iowa City and Johnson County residents through sustainable local food production, educational events, and community gatherings,” with the hope to “provide a safe, nurturing, and inclusive environment for sharing life experiences, building trust between cultures, and embracing the diversity of our fellow Iowans” (GFP, 2020). According to CFO 08, “In the first season [of 2017], we hosted 20 families just as a pilot. And then, it was so successful. In the second season, we would double the number into 40 families working in the Spring of 2018 and now this season [2019], we are looking forward to getting the number to 40 families.” The GFP farm consisted of 3.7 acres and is co-located on the
Johnson County Historic Poor Farm on the outskirts of Iowa City. Poor Farms were established across Iowa in the late 1800s to care for “dependent populations” which oftentimes referred to those in poverty or people unable to care for themselves. Residents worked on the farm, producing their own food, and learning survival skills (ISHS, 2016). Johnson County began their Poor Farm in 1855 and it continues today, without residents, as a model farm, hosting various projects, including GFP and Grow: Johnson County, a project of the Iowa Valley R, C and D (Amana, IA), which is focused on “reducing food insecurity and empowering a new wave of local growers” (GJC, 2020). The New Americans that are gardening at GFP include “Sudanese, and other African groups; many Latino families from Central America and the Mesoamerica area,” according to CFO 08. Gardeners were located by CFO 08 and volunteers who used word-of-mouth to advertise the availability of land for raising food: “What happens is we reach out for people for as much out as possible in our community. We reach out for people through social organizations, or places of worship, communities, subgroups.”

Garden plots at GFP are 10 x 15 ft., and families can only farm up to two plots per family. The GFP charges $20 per season and supplies seeds, plants, compost and water for gardeners. In addition, the GFP completes preparatory work, such as tilling and grading. CFO 08 estimated that the average time spent gardening was 14 hours per week per family. The ability to join the GFP and begin farming again was very appealing to many gardeners. FMR 18 said: “I think land access is the big thing. For me, it was the land access. That's an advantage to do the community garden. It gives people access to land. Because on my own, I know it’s difficult to fund it, even to rent a piece of land.” CFO 08 said, “I was able to see the
importance of this endeavor, out of my personal experience as an immigrant in the first place.”

**Organic Practices**

All gardening/farming projects on the Historic Poor Farm use organic practices. Seed Savers, an organic seed company in Decorah, Iowa, is the main seed source for GFP gardeners, but some seedlings and plants were purchased in Kolona; it was unclear if these were organically-grown. Once transplants are in the soil, however, only organic fertilization and pest management is permitted. CFO 08 reported that “So, we don't get any chemicals or anything like that. Whether for weeds or pests. Compost is donated to the farm.” One aspect affecting both soil conservation and food security that CFO 08 noticed was that people harvested “weeds” for family consumption: “So, even something that was food back in the day, it is not food anymore because it is not here [due to chemical agriculture]. And it's amazing that when people arrive, they can regenerate those ideas [consuming weeds, like pigweed] and they can again grow those plants.”

FMR 18 referenced his peppers, saying, “These are organically grown. I am not selling organically but I use, what is it called, good organic practices.” He spoke of how fertile the soil in Iowa was, noting that “after the season, no matter what you do, you’re going to have weeds anyway. The soil here is richer here. Many times, we don’t put any fertilizers.” In discussing weed management practices, FMR 18 brought up some lesser known techniques: “We have some techniques where we covered the ground with banana leaves from banana trees. We, sometimes, use that for weed control.” While natural mulches were mentioned, the farm used plastic mulch for weed management, which is permitted in certified organic production, as long as the plastic is removed at the end of the season. It
appeared the GFP had offered training in organic practices, perhaps due to their connections with the seasoned organic farmers at Grow: Johnson County, who grew produce for food banks and pantries at the Historic Poor Farm. CFO 08 said: “This season, we have seven sessions of training involving different things, such as insect controls, weed controls, different methods of weeding, composting, how to make organic compost.”

**Food Safety Practices**

The presence of clean harvesting bins and a suitable washing station on the farm was noted. Food safety practices were taught to gardeners, but additional training was warranted. CFO 08 said: “In terms of food safety, the place [farm] is really overseen by the county. So apparently the county personnel, Health Department, and Public Health will always help in this area. So, what we do in our part is we make sure that the washing area for the food is clean. According to the food safety standards and measures, it's kind of sanitation at the public facilities, like the toilet rooms, the place for accessing to water…So, we continuously guide and provide information on how to follow good practices in the field, and not to leave diapers in the field because sometimes they do those things. So, we work with them and provide the trash cans.” In regard to the need for continuous food safety training, CFO 08 remarked that “I think people always don't necessarily understand things, but when they understand the importance of something, they follow it always. When you talk about harming yourself or your health or harming your kid's health, then people will understand and then they will use it.”

Discussions on food safety with FMR 18 underscored the need for additional training. He said: “From here, we just wash, let it drain, and put in the cooler, distribute.” FMR 18 was planning on processing his peppers in a commercial kitchen and was aware of the
permits he would need: “I already found a space, but the Health Department needs to approve. It's not a restaurant, it's in a church. But I don't know. I know it’s like a commercial kitchen. I don't know if it's a commercially approved kitchen but it's in the church. If they approve that, I need to take the food safety [training] to be able to process these hot peppers. I already have the certificate for the canning.”

Markets

Because of the non-profit status of the Historic Poor Farm, gardeners cannot sell any of their products, but instead, share and distribute to those in need. According to CFO 08: “Last year we estimated our produce [to be] about five to 10,000 pounds of food. The food is always excessive. At the end we brought the food, we take it out to charity. To the churches, the malls, to the food pantries, table-to-table organization.”

The inability to sell their produce was a source of frustration for FMR 18, who applied to lease his own field within the Historic Poor Farm to commercialize his operation. He described his current operation: “So, the easiest way for me was to find my niche in farming and then to do a specific type of food that I would have less competition in there. So, my peppers are consumed mostly by African communities, Latino, mostly minorities I can say.” The farmer was aware of the health benefits of his produce, which could lead to additional premiums: “The spiciness [of the pepper] is going to enhance your immune system, protect your body. It does many things, like turmeric. They call it super-food.” FMR 18 had the most sophisticated understanding of ways to secure local and distant markets for his products. When queried on his markets, he replied, “Supermarkets, distributor. Like there’s a friend of mine, the one that I told you that went to Vietnam. He’s in Boston. So, he
distributes to the Africans in that area.” FMR 18 also reported selling “direct to stores, African stores, Asian stores. Distribution in Chicago.”

**Benefits**

Both the CFO and the farmer stated many benefits from community gardening/farming. Food security was paramount, as expressed by FMR 18: “I go to the stores to buy very few things. The majority I produce and process through juicing, canning. Because at least you know what you are eating. If we can’t eat our own here, I don’t know. There’s always the aspect of chemicals [in purchased food].” Financial savings was described in terms of having quality produce for free. CFO08 said: “If I want to buy these quality food anywhere else, I won't be able to afford them.”

Finding a “home” in gardening/farming was also mentioned by both the CFO and the farmer. FMR 18 reflected on this aspect by saying, “We moved here 20 years ago, and when we first got here, it was difficult. But now, we produce our own food of origin.” CFO 08 noted the community spirit that was inherent in this type of gardening: “So those people really are interested in improving their quality of food. They want to harvest. The opportunity of just farming and growing sustainable and healthy food, stuff like that. And they bring everyone. So, when the family, a parent, a mother or father come out to the farm, everybody becomes excited about the farm.” The social benefits of community gardening “And the social connection is also there. So, I'm connecting to more people. I learn about other cultures. I've learned about how other people appreciate things, how people do things and learn from them.” In addition, GFP did utilize translators in their programs. CFO 08 noted that “volunteers [are used] for doing translations of rules and regulations sent out via text or e-mail in different languages.”
**Garden Challenges and Independent Farmers**

The small size of the plots was considered restrictive to some gardeners, and FMR 18 was an example of a former GFP gardener who advanced to his own larger field within the Historic Poor Farm to take up commercial production. He said: “It’s [GFP] more like gardening. For me, I need a business. I’m doing this for business. They have lack of experience. You either need to teach them or need somebody come here, like a staff with salary, to help out. Otherwise people don't know what they're doing.” Longevity of leases, equipment, and finances for supplies were also raised as concerns for FMR 18: “I have a lease for three years. But I think owning a small tractor would be ideal. That way I don't need to wait for their time. Finances for equipment, like row covers, and other supplies. In addition, FMR 18 was concerned about having sufficient funds for his processing operation.

The challenges expressed by CFO 08 related to the need for additional volunteers and financial support for the garden. At the time of the interview, CFO 08 hoped that “in the future, we’ll be able to hire people who can help with the program.” He was optimistic, however, that more volunteers would join the program, stating that “I think one thing, when you target a social change, this is normally a long-term goal… It's just like we're talking about the benefit in 10 years… So, that when we work on a volunteer basis, then we need more people who will believe.”

Although CFO 08 believed that “language and cultural barriers” were one of the greatest challenges in the program, he felt that the community gardeners were willing to overcome this barrier by learning each other’s language, stating, “Because we work every day, you have to come outside and talk to me. I learn one word from you, you learn one word...
from me. This is how language occurred.” He added: “The outcomes are always awesome if you get people to be able to overcome to the differences between them.”

**Feed Iowa First**

**Background**

Feed Iowa First (FIF) was established in 2011 by Sonia Kendrick, a Cedar Rapids, Iowa, native and a veteran of the U.S Army and National Guard, as a non-profit organization in the Cedar Rapids area, with the mission to combat food insecurity by growing food and farmers (Feed Iowa First, 2020). At the time of the interview, Feed Iowa First was running four community gardening and food consolidation programs, including “Grow Don’t Mow”, “Don’t Waste Donate”, “Grow Some Rows”, and “Fresh Revolution.” Since the establishment of FIF, the organization had donated over 175,000 pounds of fresh, non-GMO, and chemical free produce to Linn County food pantries, including 20,000 pounds in 2018 (Feed Iowa First, 2020). The FIF community garden programs consisted of 27 number of partnership plots in the Cedar Rapids area in 2018.

Sadly, Sonia passed away on March 30, 2018, but community members have continued Sonia’s legacy by expanding the community gardens to feed food insecure populations in Iowa. The interviewed community farm organizers (CFOs 04) explained that in the “Grow Don’t Mow” program, they would go to meet with the churches, schools, businesses, or individuals who had land around the Cedar Rapids area to see if they wanted to grow food on those spaces instead of growing just grass. CFOs 04 said, “Everybody will have a row [of vegetables] and their name can go on the row, and then people take better care [of their rows] … So, with our urban plots, most often it’s not the people wanting to learn to be farmers … People want to do good things in their community, share their time, share their
work, and give the food away free of charge. It’s not creating farmers, but maybe it interests someone and maybe that would be a by-product [to create a gardener or farmer].” However, one of the organization leaders added: “It’s used to be [the goal to train people to become farmers]. Our mission is divided into two segments: Growing food and farmers. Sonia had a Masters in Sustainable Food Systems … so it was her commitment to that. She managed that aspect of the program. We have just suspended it for the time being [because Sonia passed away and there was nobody [staff members] capable of training people to become farmers. The CFOs 04 mentioned that they tried to stay in touch and be supportive of FMR 12 (see Case Study), a former refugee farmer who went through the training with Sonia, but they could not help him much because “none of us have the agricultural expertise that Sonia had. We have the passion, we believe in feeding people, and we know that people do better in their life if they have healthy food. But we aren’t expert farmers.”

In the “Don’t Waste Donate” program, the CFOs 04 said they gleaned produce from CSA programs around the area to distribute to needy people in the Cedar Rapids area, and to reduce food waste. They also would work with commercial farmers and residential growers to redistribute their excess food to those in need of fresh, non-GMO, chemical-free food in the area. For the “Grow Some Rows” program, the organizers would contact farmers and growers to ask for a portion of their land to grow and give the produce to the FIF organization. They said: “Last year [the year before the interview], we had somebody donate one acre for onions, one acre for potatoes. So that gives us a lot of produce to help feed people. Other people own the land and we organize volunteers to help them.”

What was unique about the FIF program compared to other Iowa community farms and gardens, was their role as a food consolidation for distribution to food-insecure
populations in the Cedar Rapids, Iowa, area. While FIF started as a farmer training program, along with growing produce on community spaces (land owned by businesses, government, and private citizens), the program evolved after the death of its founder, Sonia Kendrick, in 2018, to continue food distribution as its main focus, with limited gardening training due to lack of staff expertise. The resiliency of FIF is especially gratifying in their continuing the legacy that Sonia started in 2011 and hiring new garden manager.

Case Study: Independent Farming post-Community Farming

Background

When talking with some community farm and garden organizers in the Iowa City and Cedar Rapids area, the name of an African farmer (FMR 12) was mentioned multiple times. FMR 12 met Sonia Kendrick, the founder of Feed Iowa First, in a meeting with the African community in Iowa City, Iowa, where they tried to find some land in the area for community gardening. He was a vegetable grower back in Africa before living in a refugee camp for 15 years where he had organized a community garden. He indicated that he learned to do many new things that he had not previously practiced, back in his country. He gave an example that in Africa, “People did not germinate the seeds. We put [seeds] in the ground and then wait for them to come up. But here you must germinate … for two or three months” [sic: grow transplants first]. A year before the time of the interview, he helped manage a small garden donated by a church for 50 African families in Cedar Rapids.

Independent Farming

At the time of the interview, FMR 12 was working full-time while spending each morning at a privately-owned farm in Palo, Iowa, where he resided and independently grew
his vegetables on 3 acres. This 30-acre vegetable farm belonged to a native-born American who had used cover crops and rotations for more than 18 years. Manure and fertilizers were rarely applied. At the time of the interview, FMR 12 helped with farm work such as taking care of the greenhouses and picking and packing chicken eggs. FMR 12 said he aimed to be more independent in the coming year, since the year of the interview was his first year working on this farm. He would try to learn more from farming courses and trainings. However, many of these trainings were quite far from where he was, so the farm owner suggested that he could help FMR 12 with the knowledge that he needed to farm and successfully market his produce, especially with the food safety practices.

**Food Safety Practices**

When asked what food safety practices he had learned, FMR 12 mentioned he cleaned his produce with some types of washing system at his current farm (not observed). However, he also implied that he would not have the necessary equipment for properly adhering to food safety requirements if he was not at this farm. This issue was the reason that he wanted to attend a food safety training. He said: “Before, what I did back [sic: in Africa, in the refugee camp, and before this farm], it was not much. But now I need to do that [sic: learn more about food safety practices].”

**Benefits of Farming**

The farmer (FMR 12) revealed that he chose to farm because he “likes to give my African people good vegetables.” When he was at school [sic: language courses], he talked to his teacher about tomatoes. He said: “Why [did] this tomato we were eating we bought at Walmart, at different stores, did not taste good like tomatoes we grew ourselves from the ground?” When he discovered from Sonia Kendrick that most of the food he ate was
imported from California, he also questioned: “Why don’t people want to work [sic: garden or farm]? They want to eat but they don’t want to work. They don’t want to [grow] but they want food.” FMR 12 was one of two gardeners, among many Africans who signed up for gardening with Sonia. He showed a strong passion to grow his own vegetables. He had spent six hours daily for one year in order to learn and grow with Sonia at the Feed Iowa First community gardens. FMR 12’s statement corresponded with the themes of “having more culturally appropriate food” and “food security”, articulated by other community farmers in Iowa.

**Organic Practices**

While working with his farmer mentor and landlord, FMR 12 was required to cover many new tasks. He expressed that his ideal farming practice would be organic or naturally grown by “not using any chemicals or fertilizers.” However, he did use some agrochemicals and fertilizers [possibly according to the landlord techniques] for plants in the greenhouse which he learned from his mentor. He said: “In my opinion, I don’t like to use any kinds of chemicals to fertilizer them [the vegetables]. But in the greenhouse, you have to do that. But the other ones outside, we put them in the ground and the watering is the same [sic: no chemicals involved].” The soil nutritional amendment on the farm was organic matter from alfalfa and other cover crops. There was no use of manure on the farm.

**Challenges: Markets and Mentors**

FMR 12 said his main customers were Africans in the area. He aimed to grow a variety of vegetables for both native-born and foreign-born Americans. His market was mostly from individual orders. FMR 12 was in need of more information in order to reach other markets, such as farmers’ markets or food hubs. A great mentor for FMR 12 to meet his
potential would be an expert who knows how to reach those markets and follow state and local policies. That person was Sonia Kendrick, but she passed away, which impacted FMR 12 very much. He said: “When Sonia passed away, I was going to stop doing this [farming] because I did not have anybody come to help me do this. I don’t want to do something illegal.” When asked about what support he received from Feed Iowa First, he refused to talk about that. He said: “If you talk about Sonia, it will make me sad because I remember a lot of things where she helped me. She was good. She did not make for nothing [sic: She did not want any income for helping him]. For us, she loved everybody. She wanted to share the food with me. Some people, they don’t want to share with the Africans.” FMR 12 also shared his story about his failed crops and how he wanted to prove to Sonia that he could be successful. He said: “Sonia asked me: ‘Are you ever going to keep working this job?’ [sic: ‘Will you keep farming, even with all the problems’]. Then he said “I used a lot of energy for this job. I am not giving up. I keep going.” However, he expressed that it was difficult to learn by himself to become a successful farmer in the U.S.

When asked about his future plans, FMR 12 said he would try to keep farming for a little bit longer while working another job at the same time. “I am looking which one is going to be better. If farming is going to help me make more money, then I would give up work and be farming. If farming is going to look like working hard, taking more time, spending a lot of money, and I don’t see nothing [sic: any profits], I am going to leave farming,” he said.

**Challenges: Business Planning**

The mentor/landlord stated that he was helping FMR 12 to create a budget and business plan for his independent farming. He said: “I know this scares him [FMR 12] because he does not have any business experience yet. I am sure if somebody came along and
gives him $10,000, he would make really good use of it, just from what I watched of him and his family. He wants to be completely legal with the whole work … I knew they were there [at the farm] early in the morning and I could see how they were taking care of things.” The mentor/landlord said he was trying to get another person to join him and work as a partner so FMR 12 could learn more. FMR 12 was very positive about his progress at the new farm where he could learn how to independently reach new markets and improve his business plan to increase his income and food supply.

Food at First Garden and Food Distribution Programs

Background

Food at First (FAF) is a non-profit organization that was started by the First Christian Church in Ames, Iowa, in 2014. The FAF’s mission is to “provide meals to everyone who is hungry, no questions asked” (FAF, 2020). There are two main food-centered programs offered by Food at First: free daily community meals and free food markets (food pantry). The free meal program serves hot meals every day, mostly in the evening, for anyone who wants to enjoy fresh cooked meals. On average, FAF provides food for 60-80 people per night. The free food market program consists of three market days, including Monday and Thursday from 4:45 - 5:30 pm and Saturday from 10 - 10:30 am. Anyone can come and select available food at the markets at those times. In 2017, more than 43,000 families received food from the free markets, and over 20,000 people had meals in the dining hall (FAF, 2020). Food and supplies were donated to FAF from local businesses, individual gardeners, farmers, students from Iowa State University (ISU), ISU research programs, and the ISU Horticulture Farm. The organization operated on a volunteer-based model that included collecting and delivering surplus food from donors; organizing produce and other
foods at the free markets; and preparing meals and cleaning after meals. Food at First did not require photo identification for participants and the number of visits to the meals or pantry was not restricted.

Based on my observations, the community at FAF was very diverse, from native-born and foreign-born Americans of all ethnicities, to international students and workers. People who came to the dining room seemed to know each other very well. Volunteers ranged from kindergarten students to the elderly. According to a previous volunteer leader, clients and volunteers referred to FAF as “a family and a community” (Roesch-McNally et al., 2018). This corresponded with my observations of how participants greeted each other when they met, talked and laughed with each other during meals, helped each other carry heavy goods out to their cars, and thanked volunteers for preparing the meals. Another unique thing about this community program was that some of the volunteers and FAF clients were also immigrants. Many came to the meals and market to save money while also receiving some food for their families.

**Community Garden**

In addition to providing and serving food to the Ames community, Food at First also started a community garden with the Graduate Program in Sustainable Agriculture (GPSA) at Iowa State University (ISU) and the Trinity Christian Reformed Church (TCRC) in 2013. The garden was located on what was previously a lawn next to the TCRC, and operated as a community-based garden, approximately 2,500 sq.ft. in size. The goal of the students in the Sustainable Agriculture Student Association (SASA), who were connected with the garden, was to “provide access and availability of fresh produce to clients of Food at First’s meals and pantry, and engage the broader community in our local emergency food system”
In addition to management by members of SASA, garden workers included a few local community members and Master Gardeners, whose goal was to provide a variety of fresh produce to FAF clients.

The Food at First garden manager (CFO 03), at the time of the interview, stated that the main focus of the garden was to “increase the amount of food that’s getting into the pantry and increase the amount of high-quality produce … All other aspects of the garden (training, education, beautification) are sort of secondary to that goal of just increasing the pounds of food that’s getting to folks [FAF recipients] … I really believe that food is a human right and that we don’t treat it as such, and that should really be seen as a tragedy.”

**Benefits**

CFO 03 expressed that the benefits of this garden were to learn more about growing vegetables, understanding food systems and human rights, and reconnecting with nature. She said: “There was a woman in Horticulture who came to the garden to get more experience in growing diversified vegetables outside. So, for her it was very much like ‘I want to see what I’m leaning about in school.’ For other folks, I think, myself included, it’s about furthering the understanding that food is a human right. And unfortunately, we don’t treat it as such so people go hungry and understanding that things like food waste are a problem not because something is being wasted but because people are hungry while something is being wasted.”

Former leaders of the FAF garden mentioned: “They [the volunteers] have learned a lot about gardening and are deeply concerned about our food system … I heard a lot of gratitude for the garden. I know our work is appreciated and that there is a need for it.” “People loved the extra fresh goods at the market and at the meals. I felt valued for contributing to the growth, care, and harvest of the garden bounty,” another garden leader stated (Dankbar, 2017).
CFO 03 told a story when she was in the garden alone, a woman “came in and was in love with our marigolds, which the Master Gardeners had planted everywhere, in part to attract beneficial insects and deter pests and stuff … she said I can’t find these anywhere … She used them for a special ceremony.” Students volunteering at the FAF garden could reconnect with nature, help build a sustainable community, and, for immigrant students, learn about food systems and gardening in the U.S. The SASA students had also been receiving many compliments about the diversity and quality of the food they supplied and the diverse meals that they prepared and served every third Friday of the month.

**Food Safety Practices**

This community garden followed many food safety standards. At the time of the interview, CFO 03 stated she was in a unique position because her research was part of the “Growing Together” project, which included modules on food safety. The community garden manager had also attended a Produce Safety Alliance training offered by Iowa State University Extension. She was particularly interested in the training because she wanted to have her own farm someday. She added: “I am familiar with food safety guidelines, and we do enforce them at the garden … We’re definitely not GAP certified. We’re not certified in anything. We just try to follow what is articulated as best practices by the ‘Growing Together’ project.” The food safety practices applied in the garden were enforced to “not put that burden on the pantry” [sic: The food safety practices were designed to place the burden on the farm personnel to free the pantry of any food safety concerns]. The practices in the garden included the following:

- Washing hands before harvesting and entering the garden
- Keeping pets away
- Sanitizing and keeping bins off the ground
- Washing and rinsing the produce thoroughly
- Moving fruits and vegetables into cold storage inside the food pantry as soon as possible.

There was no formal food safety training at the garden. However, many volunteers came with gardening and food systems background, so food safety was a familiar topic to them, and they required little training. CFO 03 added: “We do talk a lot about food safety, and I make sure folks have washed their hands as soon as they get to the garden, or people aren’t putting produce bins on the ground and that kind of thing.”

**Challenges**

Members of the FAF community, including those who were in need, had limited involvement in the operation of this garden. According to the FAF program manager, it was very difficult for most of their clients to participate in garden activities because many of them had special needs related to disabilities, and limited transportation, or they had to work several jobs, which left little time for gardening. In addition, the dependence on volunteers was also a challenge for maintenance of the garden which will be discussed below.

When asked about challenges for managing the FAF garden, CFO 03 expressed her first concern about volunteers: “The biggest barrier this year was just getting volunteers out there [in the garden] … It really varies. Some weeks it’s just me, other weeks there are five or six of us … I sent out an email to a pretty wide list of people, so some people come regularly, others come intermittently.” A former leader at the garden also expressed her concern about the difficulty of volunteer management: “I often felt disappointed and
discouraged by the lack of volunteers who would show up at the garden. For the most part, our garden volunteer team was made up of graduate students in Sustainable Agriculture” (Dankbar, 2017). Another former leader pointed out: “The volunteers we have had in the garden have been great … However, the struggle to maintain high numbers of volunteers has caused the garden leaders to question our goals and capacity.”

When talking about the management model used at this garden, CFO 03 explained that she tried to have a co-leader program to share the workload, as was proven successful in previous years. She said: “In past years, there’s been more sort of leadership within the Sustainable Agriculture Student Association. And so, folks have taken on this role of co-leader, which basically just means that they’re sort of the go-to person for questions for volunteers on their shift at the garden any particular day.” However, at the time of the interview, a co-leader at the garden had not been secured. CFO 03 described her situation: “At the beginning of this past growing season, we had a couple meetings and tried to sort of get folks interested, but nobody ended up signing to be a co-leader. So, I had to be there at the garden every day to answer people’s questions.” At the time of the interview, there was a Master Gardener dedicated to help at the garden, but, unfortunately, she had an accident and broke her hand, which curtailed her work at the garden. Also, it was very difficult to recruit volunteers during the summer since many graduate students, which were mainly from GPSA, were busy with field projects and research. There was a decrease in volunteers for both meal preparation and serving, and in the garden, during the summertime.

Another challenge was the shaded property, restricted size, and distant location of the garden from the food pantry. When asked if the garden could become a training site for those who want to learn gardening and farming, CFO 03 said: “I think that [with] the scale of the
Food at First garden, I don’t see that it would be conducive to that just because it’s such a small-scale thing. I think if it were bigger and if there were maybe paid staff, it could become something like that.” When asked if she had any solutions for the scale issue, she added: “I think if they were able to have a location with more space. I think that [the] garden is hard [to grow] because it’s so shady, and it really inhibits the yield of these plants. So, if we were able to relocate, that’d be pretty slick … I wish that we had more space and I wish we were a little bit more mechanized so that we could till and not have to call the land people that rent the tiller and those kinds of things.” Because of the restricted garden size, CFO 03 guessed that the amount of produce brought to FAF meals and pantry was smaller than one percent, with the vast majority donated from local supermarkets and grocery stores. CFO 03 also mentioned the Feed Iowa First organization in the Cedar Rapids area as a better example of utilizing urban space for gardens, and sharing food between growers and those in need.

Water was also a challenge at the FAF garden. Two years before the interview, a group of students from ISU helped build an automatic irrigation system using rainwater stored in barrels on the side of the church. However, there was a miscommunication during the transitioning from one leader to the next regarding how to run the system. At the time of the interview, CFO 03 had to use a hose connected directly to the church’s water supply to water the vegetables, which increased water costs for the host. Other challenges were pests, such as rabbits in the garden and rats in the tool shed. The loss of information during the transition periods between two garden leaders also critically impacted the garden’s success.

CFO 03 expressed her hope that “the Sustainable Agriculture Student Association and other outside groups really step up and be leaders in that capacity and if any expansion happens, it could be because those folks have advocated for it.” She added that it would be
ideal if FAF clients, who had a steady income and adequate time, could contribute more time to the meal program, and also participate more in the garden. Communication challenges between the FAF organization and the garden volunteers, and between the host church and garden volunteers, were also cited as barriers.

The statements of CFO 03 and former garden leaders corresponded with the common themes regarding the benefits of community gardens and farms: “providing more fresh produce”, “reconnecting with nature and tradition”, and “educational gain”. As for the challenges, “communication”, “lack of time”, “human resources”, and “land access and availability” were often seen in other respondents’ themes.

**Volunteer Work in the Garden**

Over my 132 hours volunteering at FAF in 2018 and 2019, I worked as a volunteer, then coordinator, at both the garden and meal program. There were many challenges to maintaining the garden in 2019, including the following:

- Lack of effective communication between garden leaders, SASA, FAF program, and volunteers
- Lack of adequate volunteers
- Lack of on-site water
- Lack of ability to follow food safety protocols due to lack of water
- Lack of time during summer for both SASA FAF coordinators
At the beginning of 2019, we had to clean up the garden and reconnect the irrigation system, which consumed many days of work. In previous years, the former garden leaders started their seeds at the Iowa Arboretum in Boone, Iowa, which involved excess time for preparing trays, traveling, and transporting seedlings. In 2019, seedlings were started at my home and we direct-sowed many seeds after the last frost, which grew successfully. Also, we received plant and seedling donations from the Graduate Student Horticulture Society from Iowa State University (GSHS) and LSI Global Greens farm. We applied companion planting and intercropping methods in this garden by seeding and planting herbs with other vegetables to increase diversity.

However, due to lack of volunteers and volunteer time at the garden, plants suffered from rabbits that entered the garden through broken fences, and lack of water. With these challenges, the produce that was contributed to the FAF pantry was limited to about 8 baskets of mainly herbs, kale, and carrots. At the end of the season, SASA members worked on cleaning up the garden and formed a sub-committee in order to establish a plan to improve the effectiveness of both the garden and meal preparation. The members of the sub-committee met with former SASA FAF garden and meal leaders to gather information, plan for the 2020 garden, and address challenges and solutions, including new methods to recruit volunteers. With the efforts of the new SASA FAF coordinators and the sub-committee, the garden and meal preparations appear to be changing, with more involvement and additional activities planned, that would help connect more Ames residents and ISU students to support local food systems.
Hiawatha Community Garden

Background

Although this community garden did not have an official name at the time of the interview, it will be referred to as Hiawatha Community Garden. This community garden was started in Hiawatha, Iowa, in May 2019, by four high school students working through the Iowa BIG (Initiative Based High School Experience) project. The Iowa BIG program was formed following the 2008 flood by community members in the Cedar Rapids area, and expanded to partner with the Cedar Rapids, College, Alburnett, and Linn Mar Community School Districts in 2013 (Iowa BIG, 2020). Iowa BIG’s operating model is “a public school with no admission requirements – students and families only need to ‘want a different learning experience’.” Each partnering district is a full “owner” of Iowa BIG and shares in both the costs and the benefits (Iowa BIG, 2020). At these schools, high school students have the opportunity to work peer-to-peer with committed teachers and educators on real-world problems across the city and in their communities.

This community garden was located at the corner of Miller Road and Emmons Street in Hiawatha, Iowa, on land belonging to Servpro® of Cedar Rapids. No rental fees were charged of participants at the time of the interview. The participants at the Hiawatha community garden project were mainly from Bhutan. When the students started the garden, they received support from organizations in the Cedar Rapids area, including the Catherine McAuley Center, to identify the refugee communities living in the area. They also received assistance from the Mathew 25 community garden to help prepare the garden and till the land, and they also provided seedlings and plants. The organizers had received a community
grant from Walmart and purchased seedlings, plants, and fences to prevent entry from small animals like rabbits.

One of the organizers (CFO 11) described the beginnings of the garden: “We’re learning from it. There’s a lot of things now since I came here, and I’ve seen a lot of things to learn.” In remembering the student in the Iowa BIG program as the original source of inspiration for the Hiawatha garden, CFO 11 said: “She [the student] was telling us about how these refugees were walking over a mile to community gardens because there were none in this city. In Hiawatha, there’s no community gardens. So, they were walking over a mile, then they’re taking the bus and stuff to get further [sic: to the city of Cedar Rapids]. But they all live in Hiawatha. So, we decided that we should try to do something here [in Hiawatha] so it’s a little bit more accessible to them. When we started, there were over 20 people who showed up and wanted plots … but a lot of them [plots] aren’t being used anymore … only three are being used right now,” said CFO 11.

**Organic and Food Safety Practices**

According to an agreement with the Hiawatha City Council, the produce from this community garden was allowed only for family use. No commercial fertilizers and large tractors were allowed on this land. For soil nutritional amendments, the Cedar Rapids municipal compost, which consisted of yard and kitchen waste, was the main source of fertilization. There was limited instruction on its use, however.

There was no access to water at this garden, which could impact both vegetable yields and food safety. The fences surrounding the garden were too low to prevent deer from entering the garden and eating the vegetables, which could also be a food safety issue. In
addition, gardeners had no access to a washing station nor to any produce containers, due to financial limitations. There were no signs of any food safety practices or training implemented at this garden.

**Challenges**

At the time of the interview, it appeared that there was only one gardener (FMR 25) working on her plots. The garden organizer said one of the reasons for this lack of participation was because people were working at off-site jobs, and they didn’t have time to work in the garden. At the time of the interview, there were no structures established in the garden, such as a shelter or tool storage. As previously mentioned, lack of water access, and inadequate fencing were also considered constraints. There was no garden manager or expert to help support the participants with gardening issues, while the main personnel were high schoolers with little or no gardening experience and limited time commitment. CFO 11 and her mother said they would increase their level of participation with the gardeners, but future plans to support this community garden were still an open question.

**Columbus Junction Community Garden**

**Background**

Columbus Junction, a part of the Muscatine Micropolitan Statistical Area, is a small town in Louisa County in southeast Iowa with the population of 2,330, including 40.3% Hispanics, 40.2% White, and 17.4% Asian (U.S. Census Bureau, 2019). This town was revived by many waves of refugee and immigrant populations. In 2009, there was an immigration wave of people from Burma, which accelerated in 2012 to a dramatic demographic shift. According to the U.S Census Bureau (2019), the number of Burmese people increased from 39 in 2012 to 406 in 2017. The city government then changed to
adjust to the rise of these communities, such as the city website hosting trilingual (English, Burmese, Spanish) documents to assist all residents in navigating city codes and regulations. There are many businesses, such as grocery stores and restaurants, established by Hispanic and Burmese people in downtown Columbus Junction.

In the interview with the Community Development Director (CFO 06), it was expressed that, with these developments, the newcomers could experience a greater sense of belonging in Columbus Junction, especially when the majority of newcomers were young families with children in preschool to kindergarten classes. She added: “It started with jobs at Tyson … First, it was just the men living here, and also lots of people living here Monday through Friday were settled in Indianapolis … they would come here for jobs and then get an apartment and stay here instead of go back to Indianapolis.” The Tyson pork processing plant, located about 1.5 miles outside of town, was considered an economic draw.

Seeing the increase in the Burmese population, the city of Columbus Junction also created community gardens where the people from Burma “could get in touch with their agricultural culture and grow their own food.” CFO 06 said: “The Burmese will garden extensively at their houses. They will garden on the foundation of their property, and they will garden the entire thing sometimes … My impression is almost all of them garden.” She explained: “I had the idea of doing them [building the community gardens]. I went and visited the Pioneer Co-op [New Pioneer Food Co-operative] who was involved in some gardens in Iowa City. I went and looked at those and modeled after them for a least a year.” At the time of the interview, CFO 06 expressed her concerns about other community gardens located outside of town due to poor soil quality and flooding issues.
At the community garden in town, there were eight 16 x 16 or 20 x 20–sq.ft. garden plots operated by seven Chin-Burmese (Burmese people from western Burma) gardeners and one American gardener. The city used newsletters and social media as two channels to promote the community garden. CFO 06 said: “It happened this year … It [the garden] was not announced on social media or in a newsletter or anything, but everybody will come within usually one day or two and rent all of them.” The gardeners paid $20 for maintenance and water because “they are heavy water users.” CFO 06 added: “About the same time I’m starting plants in my greenhouse, somebody will come and say ‘I want to run it [rent a garden plot], and they’ll just show up. It’s different people every time, some is the same, but it hasn’t been the same people on the same land all the time … We let them do what they want. Nobody does anything permanent. They cleaned up themselves. It’s pretty slick.”

CFO 06 explained that there were people who wanted to farm on a larger scale, so they left the town community garden and worked on larger community gardens in the countryside. She said: “They had the advantage of being bigger plots, and I would say better soil, and better conditions. But further out of town and so harder to deal with. We had some people [who] wanted something bigger and different, or I think, it’s family and friends wanted to garden and so they could all be out there at the community garden.” Although Hispanics made up more than 40% of Columbus Junction, there was little interest among this community for signing up for a plot in the community garden. CFO 06 guessed: “I think part of it is our Hispanic population has been here a lot longer. They are definitely more likely to own [their] home and be able to do their own gardening.”
Markets

Most of the produce from this garden was exchanged among the Chin-Burmese community and some marketed at the downtown Asian grocery stores. CFO 06 said: “My feeling is that people are indeed either selling stuff or trading stuff or giving stuff to each other … It’s different the way they use money and the things that they would pay for and not pay for are different than what I would as my culture.” She told a story at a Chin-Burmese grocery store where she found plants with price tags for sale. However, she thought “there may be the idea of just take the plants. If you’re hungry, take this … Their culture is in a way more cooperative, I think, than ours [American culture].” The gardeners also donated their food to the church and the church pastors.

The city of Columbus Junction tried to create more marketplaces in town for all citizens, but these markets were not completely successful. The city organized a farmers’ market in town, a pop-up farmers’ market, and a CSA program. However, all of these initiatives were non-operational at the time of the interview. CFO 06 said they did help a Burmese woman sign up for Food Stamps and the USDA Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) program, so she could would be free of home food worries and could sell the produce she grew at the town’s farmers’ market. There was no indication of her continuing this effort at the time of the interview.

Organic Farming Practices

During my observations at the community garden, the gardeners appeared to follow organic and naturally grown practices which were complementary to their traditional knowledge in Burma. CFO 06 added: “I don’t think they are actually very big chemical users.” Regarding seeds, many bought them at the downtown Asian stores or brought them
from Burma. CFO 06 said: “I've talked with some people about seed starting and getting local seeds. They have for a lot of things [they have many kinds of seeds]. They have seeds that they've gotten from the Chin Hills [a mountain range in the Chin state of Burma/Myanmar]. As far as I know, they've also had some seeds for sale at the grocery stores that were, I don’t know, packed at someplace, not in the United States.”

Food Safety Practices

There were no food safety trainings or workshops taking place at this community garden, according to CFO 06. When asked whether the gardeners have learned about food safety, CFO 06 said: “I don’t think the gardeners [took any trainings] because we don’t have anybody that’s selling. So, I think that they’re just doing standard [sic: wash and rinse produce]. She added: “We haven’t done food safety … I don’t think [that we did any training] unless [an ISU Extension staff who helped run this garden] did it when she was doing the community garden under that. I haven’t done anything about food safety.” There were no food safety facilities at the garden. CFO 06 hinted that: “They [the gardeners] don’t like cattle and horse manure. They do like chicken [manure].” The use of manure as fertilization was cited as a common practice in Burma. If this was the case in the Columbus Junction garden (not verified at the time of the interview), detailed instructions would be warranted on the application and use of raw manure in order to prevent food-borne illnesses. There were two Asian grocery stores in the downtown area that were selling fresh vegetables, but CFO 06 did not think that this produce was from this community garden. She believed that the store owners had to follow standard food safety because “they often got inspected,” according to CFO 06.
Benefits

When asked about the impacts of the community garden, CFO 06 excitedly said: “I think it’s been super powerful. I think it’s been good. People have enjoyed it. They come back every year. We never have a problem getting people to sign up for the garden. So, that’s like a done deal.” The community gardens were seen as one of the primary goals of the city of Columbus Junction in order to attract more immigrants by providing a sense of belonging. CFO 06 said: “I think a lot of it was recognizing that we are in highly rented town [sic: an area of high rent] and so there’s a lot of people that don’t have access to gardening and to produce their own fresh fruits and vegetables. Couple that with the fact that we have the ethnic population that has specific things they’d like to grow that aren’t readily available in the stores.” She emphasized that the community gardens for the Chin-Burmese are for people who really like to garden, and the city has recognized this: “[It’s] another way for the city as an entity to say ‘We understand who you are, what your priorities are, and we’re going to try to meet them’.” Beside creating a place where the ethnic community can grow their own culturally appropriate vegetables and fruit, they feel like they are at a “home away from home” and are cared for by the city.

The community garden also served as to bridge the gap between locals and newcomers. CFO 06 described: “It's [the community garden] on a fairly prominent corner. People drive by it and they see it and they can see what people are growing. And people love gardening. You have people from another country move into your city and they're sort of ‘Hmm, what are these people like? What do we think about them?’ So, when those people are 30 years old and planting lovely gardens with their children, it's pretty easy for everybody to like them.” She thought this way of interaction was better than backyard gardens where
people had less access and potential for starting a conversation with each other. At the community garden, there was an extensive knowledge exchange between gardeners, such as: “We've had an Anglo garden and seven Burmese gardens. So, they're always looking at each other like ‘what do you use for supports for whatever you're planting? How far apart are your planting your stuff? Are you leading it?’ All of that sort of thing. So, they all watch each other.” Moreover, the garden was one of the tools for the Chin-Burmese community to maintain their culture and community-driven values exemplified by their sharing of produce with each other. Creating a productive place on unused city property/land was also a benefit of the community garden.

**Challenges**

Lack of time to garden seemed to be the most concern for both gardeners and the organizer. CFO 06 said: “Time is an issue because our Burmese are super busy … If you are working full-time and raising kids, finding the time to come to a garden is challenging.” She added: “The difficulties [for her] are trying to find spare time of wanting to do things, such as classes on gardening or food safety or that sort of thing. It is just super hard to find spare time. But again, they're [the Chin-Burmese] young parents working full time, heavily involved in their church probably. And, we try to slot in some stuff. It's just hard to get it in there.” Another cited challenge was littering. CFO 06 said: “Littering has been a big issue and I'm trying to get people to understand. They'll clear off the brush but also have some plastic or something in there. And now we've got organic with inorganic [in the mulch pile].” Getting to know the climate and how to plant American-style were also mentioned as challenges for the gardeners.
Language was not considered a barrier for the Chin-Burmese community in Columbus Junction area. CFO 06 explained: “We would have a range in our Chin-Burmese from people that are pretty fluent in English to people that aren't. Those close to Chin Hills are close to India, and so it’s kind of depends on how strong your ties were with India, whether you were educated there. We have some people that were educated in India, so their English is plenty good.” In addition, CFO 06 recognized that the Chin-Burmese were good at learning English at the farmers’ markets. She said: “When we did have the farmers’ market and of course the Burmese patronized that a lot, it turned out to be a whole kind of language acquisition thing because one of the things that's nice about a farmer's market is it's all visual. And so, you could even tell, I think, some of the people that shop there, they knew this was a way to come interact with Iowans and use your numbers and use a little bit of vocabulary in kind of a safe atmosphere. Or say it was a great, it worked out really well, I would say.”

Responses from this interview resonated with the benefits and challenges expressed by other community garden organizers, with the benefits including “food security” and “having more culturally appropriate food”, along with “learning from each other.” The most cited barrier was “time constraints,” as gardeners in this area were more adept at communicating compared to other community gardens.

CHAPTER 3. CONCLUSIONS AND RECOMMENDATIONS

State of Community Gardens/Farms in Iowa

Over the course of this study, nine community gardens/farms were identified in Iowa that provided access to their organizational leaders, to 25 of their gardeners/farmers, and to the physical property of their gardens/farms. The 34 interviews I conducted, and my personal observations, including over 300 volunteer hours at two community farms, revealed a viable
community garden/farm effort in Iowa, with the majority focusing on assisting immigrant or former refugee populations. At a Focus Group held at the Lutheran Services in Iowa (LSI) office in Des Moines, Iowa, on January 11, 2020, 20 GG farm participants were queried about the results of my surveys and analysis and they concluded that the themes developed from the analysis were in accordance with their feelings and observations about community farms/gardens.

The largest community farm, Global Greens, a project of LSI, included an incubator farm (8.5 acres) and 19 additional plots across Des Moines which, collectively, served over 250 individuals from Bhutan, Burundi, Rwanda, Tanzania, Uganda, Somalia, Myanmar, and the U.S. This community farm project began with a focus on “reconnecting former refugee farmers with the land as they build their new life in the U.S.” (LSI, 2019). This goal is critical for providing these New Americans support and a feeling of community upon their arrival here. One member of LSI said, “When refugees come [to the U.S.], they are frustrated. They think they will not make it.” (LSI, 2019).

Based on the outcomes listed by community farm organizers, and the farmers themselves, LSI-GG has been very successful in meeting these goals, including the provisioning of food through gardening/farming, and teaching farming methods appropriate for the U.S. The benefits of community gardening/farming were many, as stated by the respondents in this study, and generally outweighed the constraints. The social benefits of community gardening/farming were often described as the foremost reason for the farmers’ participation. As one gardener said, “For me, this garden is a family. When we are at home, we feel lonely. But when we come to the garden, we see each other, we make more friends.”
Organic Farming Practices

Although none of the community gardens/farms were certified organic at the time of this study, primarily due to the expense and lack of need for third-party certification, based on customer confidence regarding how food was grown, organic practices were observed and also noted by farmers and CFOs. In addition, much of the community garden/farm produce was shared among community members and their families and not marketed through external outlets, thus negating the need for organic certification. Organic practices included using non-GMO seeds and replacing synthetic chemicals for fertilization and pest management with manure-based compost and intercropping to attract beneficial insects. A quote from a farmer at one of the largest community farms symbolized the opinion of many gardeners who were interviewed. She stated that “using the tiniest bit of chemicals could ruin the produce,” and that she wanted to grow organic food to ensure good health for her family, and for her customers. Additional training on organic practices is recommended for community gardens/farms, and could include workshops on best practices for composting manure to avoid any food safety concerns, and how to incorporate cover crops into vegetable farming, using ISU Extension and Outreach specialists and resources, such as HORT 3052: “Crop Rotations, Composting and Cover Crops for Organic Vegetable Production” (Delate and Nair, 2016). Although Master Gardeners (MG) were involved in several of the community gardens/farms, additional participation could enhance the MGs’ cultural understanding of immigrants and former refugees and provide these New Americans advanced gardening skills.
**Food Safety Practices**

Of all the on-farm practices observed in this study, food safety practices were the most lacking on the majority of community farms. This was not unexpected, given that many produce farmers in Iowa are unaware, or not trained sufficiently, in food safety requirements, as stated in the Food Safety Modernization Act (FSMA) (USDA-FDA, 2019). Lack of sufficient finances and personnel hampered the planning and establishment of food safety trainings and protocols at most community gardens/farms. Again, the largest community farm offered the most extensive food safety training. Smaller gardens suffered from lack of infrastructure to support basic food safety practices – the worst case having no source of water in the garden. Overall, gardeners/farmers were interested in keeping their produce safe and not transmitting any foodborne illnesses. One farmer said, related to food safety practices: “Before, what I did back [in Africa], it was not much. But now I need to do that [practice food safety measures].”

Food safety trainings offered by ISU Extension and Outreach specialists (Shaw et al., 2019) should be encouraged for all community gardens/farms. A very successful outcome of this study was the establishment of additional food safety trainings in 2020 at LSI-GG, supported by a grant from the ISU Extension and Outreach Diversity Grant program: “Assessing the Food Safety Knowledge Gained from Underserved Refugee Populations in Iowa,” with the ISU Produce Food Safety Team. Suggestions from this program include the need for separate trainings for different ethnic groups, as each group may express preferences for specific training modules or delivery style. Culturally relevant modules should include pictorial representations and, oftentimes, videos are preferred to written instructions. This program will serve as a model for other community gardens/farms in Iowa, and it would be
beneficial if other CFOs could attend some of these trainings. In the case of inadequate organizational funding, CFOs should discuss options with ISU specialists to offer food safety trainings for their garden/farm at a reduced cost.

Marketing and Business Planning

The majority of community gardens/farms in this study did not have permanent structures where markets take place. The exceptions were LSI-GG, where a Saturday Farmers’ Market and a CSA were functioning at the time of the study (LSI, 2019) and Matthew 25 gardens, which hosted a Thursday market. This comment summed up the feeling of the majority of community gardeners that were interviewed: “I believe that most of them are just going to use [the produce] for their own use and for their family. But if someone chose to sell their produce, then that would be okay. That’s something I think I see as a potential for growth because we do have kind of an arm of our agency that does employment services and support for people who are looking for an economic opportunity. And so, developing our programming a little bit more with the garden, it could potentially move into selling.”

The GG project has a dedicated farm manager and a CSA manager, which greatly aids in the functioning of the farm and the ability of their community farmers to participate in the local economy, if desired. The CFOs also offer business planning for their farmers, which consists of trainings and one-on-one meetings that focus on establishing plans for their farm, including budgets and required regulations for independent farming. Their Farmers’ Market has been very successful in terms of enhancing social interactions–both among the former refugee communities, and between native and New Americans, in addition to supplying high quality, culturally appropriate foods. The CSA, however, has experienced some set-backs,
including inadequate revenue streams, which is a common complaint among many CSAs in Iowa. Moving to “signature crops” that can generate the most revenue based on consumer demand could be one solution to this problem (C. Chase, pers. comm.).

**Transitioning to Independent Farming**

One of the goals of several community farm organizations in this study was to assist farmers who were interested in establishing their own farming operation following their work in a communal setting. Although the snowball technique used in this research located only two former community farmers who were now independently farming, their cases provided significant information on the successes and challenges faced by these farmers in Iowa. Similar findings from California (Calo and DeMaster, 2015) indicated that farmers, who participated in incubator farms and were transitioning to independent farming, were highly motivated and possessed sophisticated farming skills. They found that access to farmland was the most critical barrier to independent farming, along with landowner and farmer relationships regarding long-term leases. Calo and DeMaster (2015) also pointed out sociocultural barriers to land access/tenure, including ethnicity and/or cultural identity, but the surveyed farmers in Iowa were reluctant to make this case. However, a CFO, interviewed on this aspect, stated that he had observed discrimination based on ethnicity for one of his graduated farmers. Discrimination is rampant in many parts of the country and will continue to be a barrier until cultural differences are embraced. Both native-born Iowans, and immigrants who now call Iowa their home will receive mutual benefits through engagement with community gardens/farms, as they work together to help achieve food security and wellness for all.
Lessons from Other Community Gardens/Farms Outside Iowa

Non-Governmental Organization (NGO) Programs: Growing Together and FARRMS

Upon researching other community garden/farm programs across the U.S., several programs showing highly successful outcomes were identified. The non-governmental organization (NGO) program, Growing Together, in Fargo, N.D and the Foundation for Agricultural and Rural Resource Management and Sustainability (FARRMS), located in rural North Dakota (FARRMS, 2019), are unique examples of private organizations supporting community gardening/farming, with some governmental support. Growing Together (GT, 2019) is a community garden organization for New Americans, which was started in 2006 with eight families and six gardens, and has grown to 150 families at 6 locations, producing over 65,000 lbs. of fresh produce in 2018. Partners in this NGO include the Fargo Parks Department, Lutheran Social Services and the Bell State Bank in Fargo, N.D. Garden land is secured from donations/agreements with the Parks Department, schools, churches, and businesses. According to the CFO, the benefits deriving from the Growing Together gardens mirrored those articulated by other CFOs and community gardeners in Iowa: “Financial stability has, I think, increased for them [immigrant gardeners], but for a lot of the immigrants it [the garden] is just quality of life. It allows them to lead a lifestyle that they enjoy, and it gives them the freedom to manage their own businesses and feel that sense of security and responsibility.” Their gardens are all organic, which has been a benefit for both gardeners and consumers, according to the CFO, who stated: “Again, many people are concerned with chemicals and how things are raised and because we use organic methods that’s something that really resonates with people that garden and so they're able to eat more vegetables; they're able to eat the types of foods and the home cooking that they enjoy that's
also impacting their health. Working in the garden and connecting people impacts your health and your mental health and your emotional state.” The CFO also cited “time” and “staff” as critical constraints for the organization, warning that volunteers must be continually appreciated and “not asking too much of them and causing them to burn out.” Master Gardeners were noted as an important section of their volunteer base. Community garden leadership workshops were offered to augment skills for working with people of different cultures. The Growing Together staff has also approached local teachers, connecting students in the classroom to gardening, by bringing in a gardening curriculum and hands-on activities for “any sort of plant-related science and the teacher can use it as part of their science curriculum.”

Much of the work at FARRMS is supported by a federal grant from the Beginning Farmer and Rancher Development Program (BFRDP). FARRMS was established to empower people to create sustainable communities by “linking people, good food, living farms and ranches and the environment through hands-on educational experiences” (FARRMS, 2019). They train 15 to 20 beginning farmers each year in their own program and also match 10 to 15 beginning farmers with farmer-mentors on private farms. About 30% of their participants in both the garden and farming programs are immigrants. A benefit of these programs is having translators on staff and also non-English translations of training materials. According to a CFO in FARRMS, a unique feature of their trainings is “we try to bring in people from the FSA offices, from insurance offices, food safety, the health department people, conservation services, such as the NRCS office, and things like that. So, they [immigrant farmers] become more aware that these services are available to them and
that they are familiar with at least one person in the office that they could maybe contact or ask questions of.”

Another unique aspect of the FARRMS’ beginning farmer trainings is their providing “farm tours—so people [beginning farmers] can see a variety of farms and understand that there are different aspects of farming here in North Dakota…So, we try to get them out onto working farms so that they can see variety and see what they're [the farmer mentors] doing.” Recognizing that business planning and marketing skills will determine the success of many beginning farmers, FARRMS also has their beginning farmers “meet up with marketing panels, so people who would be potential buyers for food…whether it's these or local co-op or grocery stores or even restaurants so that they can start to initiate those relationships.” Impacts of the FARRMS program are assessed through surveys to determine the success of their graduate farmers, in terms of starting their own farms, and ability to secure viable markets. The BFRDP on-line database logs information on training modules and programmatic efforts across the U.S., which the FARRMS CFO cited as a valuable resource for her program.

There were many aspects of the Growing Together and FARRMS programs that could be incorporated in Iowa’s community garden/farm’s organizations, including securing BFRDP funds to support business planning trainings for community farmers ready to farm on their own, and securing farmer-mentors for those community farmers in the Iowa farming community. Investigating other partners and potential sources of funding, including banks and Parks and Recreation Departments, is recommended for community garden/farm organizations in Iowa.
Government-Supported Community Gardens/Farms: Philadelphia and Boston

Undergirding most successful urban community gardening programs is government support, such as seen in the City of Philadelphia, PA. Philadelphia has a large immigrant population, with a quarter of its residents, about 390,000 people, who are immigrants or U.S. natives with immigrant parents. About 24% of immigrants live below the federal poverty line, and the poverty rate for immigrants has increased at a much faster pace than that of native Philadelphians. Many city programs have been developed to support immigrant populations, including their Urban Agriculture Plan.

The City of Philadelphia initiated a Food Policy Advisory Council in 2011 to “connect Philadelphians and their local government to create a more just food system…and to envision that all Philadelphians can access and afford healthy, sustainable, culturally appropriate, local and fair food” (FPAC, 2019). The Urban Agriculture Subcommittee of the Food Policy Advisory Council is fully supported by the city government “to develop and implement innovative laws and policies to support the conversion of Philadelphia’s vacant and underutilized lands into sustainable community assets that increase food security and sovereignty for all Philadelphia residents” (FPAC, 2019). Zoning changes in 2012 allowed gardening and farming as permissible activities on most land within the city. “Urban agriculture” was cited as a priority when city leaders crafted a law that created the Philadelphia Land Bank to locate and secure city property for gardening use. As of 2016, there were 470 gardens across 600 parcels in the city, with half on public lands. The 30% of gardens that were on private land that was abandoned by owners who had stopped paying taxes were also made available for gardens. Support from the city’s Office of Sustainability is also important. “This isn’t about regulations,” said Christine Knapp, director of the city’s Office of Sustainability.
“Rather, it’s more a matter of coordinating or supporting the appropriate ways these gardens and farms should exist and could exist and serve a role in the city.” (Kummer, 2019). The Philadelphia Parks and Recreation Department acts as project manager, in coordination with the Office of Sustainability, Planning Commission, Department of Public Health, Department of Public Property, the Land Bank, and the Managing Director’s Office. The participation of diverse stakeholders, including NGOs, such as Soil Generation, that works with community gardeners in the city and helps ensure that recommendations match gardeners’ needs and increases the transparency of proposed and adopted policies relating to community gardens/farms. Kirtrina Baxter, a community organizer with Soil Generation, says that it is important for city government to see “gardening as a much-needed source of healthy food and a spiritual necessity for some communities” (Wozniacka, 2019).

The City of Boston also serves as a model for city government support of urban farming operations. The City passed the Urban Agriculture Rezoning Initiative in 2013 to promote urban gardens/farms as a method to increase food security in Boston (City of Boston, 2020). The Mayor’s Office of Food Initiatives and the Mayor’s Urban Agriculture Working Group, a group of farmers, experts, residents and community garden advocates, are involved in setting policies and advancing programs for community gardens/farms. Their catalog of vacant city parcels suitable for urban farming was created by the Office of Food Initiatives with the Department of Neighborhood Development in order to “foster a community of farmers whose work can make a positive impact in Boston neighborhoods” (CBOFI, 2020).
Among the many programs linked to the Boston Urban Agriculture office is a grant program from the Massachusetts Dept. of Ag. Resources Urban Agriculture Program to support projects designed to increase the production, processing, and marketing of produce grown and sold in urban centers across Massachusetts. Other interesting ideas from Boston include partnering with the Harvard Graduate School of Design on a course on “Urban Agriculture and the Form of the City” to engage students, citizens and community gardeners in a dialogue around “the social, environmental and economic factors leading to urban agriculture’s emergence as a major component of future city-building” (Harvard University, 2020).

Recommendations from these governmental urban agriculture programs that would prove useful for Iowa’s community garden/farm organizations include the idea to meet with the relevant officials of the City of Des Moines and other large Iowa cities where community gardens/farms are located, to discuss and implement city-based policies and programs invested in increasing the viability of community gardens/farms. Partnering with Food Policy Councils and Parks Departments could increase the longevity of community gardens/farms programs in Iowa by developing designated policies and supplying land and personnel that would contribute to the long-term goals of enhancing food security and community well-being through community gardens/farms.

From my personal interactions with community farm organizations in Iowa, I observed that the immigrant gardeners/farmers possessed significant knowledge about the quantity of food and the income that was generated from their community garden/farm efforts, but most CFOs did not have data on the social benefits from community gardens/farms. A concerted effort to quantify social benefits, such as knowledge gain of local
rules and regulations to advance farming as a business, extent of integration into local society, and overall improvement in health and well-being from gardening/farming, could solidify requests for greater support from governmental entities. Finally, increasing partnerships between community garden/farm organizations in Iowa and Iowa State University’s Organic Ag Program, Food Safety Produce Team, and the Farm, Food and Enterprise Development office could lead to many mutually beneficial outcomes. The ISU groups could provide additional training on production practices, food safety workshops, and entrepreneurial and business planning skill-building for CFOs and gardeners/farmers. In return, Iowa State University would broaden its outreach to more diverse populations, and gain greater understanding of New Americans’ gardening/farming interests and educational needs.
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The project referenced above has been declared exempt from the requirements of the human subject protections regulations as described in 45 CFR 46.101(b) because it meets the following federal requirements for exemption:

2: Research involving use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observations of public behavior, unless (i) Information obtained is recorded in such a manner that human subjects can be identified, and (ii) Any disclosure of the human subjects’ responses outside the research could reasonably place the subject at risk of criminal or civil liability or be damaging to the subjects’ financial standing, employability, or reputation.
The determination of exemption means that:

You do not need to submit an application for annual continuing review.

- **You must carry out the research as described in the IRB application.** Review by IRB staff is required prior to implementing modifications that may change the exempt status of the research. In general, review is required for any modifications to the research procedures (e.g., method of data collection, nature or scope of information to be collected, changes in confidentiality measures, etc.) modifications that result in the inclusion of participants from vulnerable populations, and/or any change that may increase the risk or discomfort to participants. The purpose of review is to determine if the project still meets the federal criteria for exemption.

In addition, **changes to key personnel** must receive prior approval.

**Detailed information about requirements for submission of modifications can be found on our [website](#).**

For modifications that require prior approval, an amendment to the most recent IRB application must be submitted in IRBManager. A determination of exemption or approval from the IRB must be granted before implementing the proposed changes.

Non-exempt research is subject to many regulatory requirements that must be addressed prior to implementation of the study. Conducting non-exempt research without IRB review and approval may constitute non-compliance with federal regulations and/or academic misconduct according to ISU policy. Please note that you must submit all research involving human participants for review. **Only the IRB or its designees may make the determination of exemption,** even if you conduct a study in the future that is exactly like this study.

Please be aware that **approval from other entities may also be needed.** For example, access to data from private records (e.g., student, medical, or employment records, etc.) that are protected by FERPA, HIPAA or other confidentiality policies requires permission from the holders of those records. Similarly, for research conducted in institutions other than ISU (e.g., schools, other colleges or universities, medical facilities, companies, etc.), investigators must obtain permission from the institution(s) as required by their policies. **An IRB determination of exemption in no way implies or guarantees that permission from these other entities will be granted.**

Please be advised that your research study may be subject to post-approval monitoring by Iowa State University’s [Office for Responsible Research](#). In some cases, it may also be subject to formal auditor inspection by federal agencies and study sponsors.

Please don’t hesitate to contact us if you have questions or concerns at 515-294-4566 or IRB@iastate.edu.
APPENDIX B. INTERVIEW QUESTIONS

Questions for farmers and gardeners

1. How did you find about this organization or this community garden/farm?

2. Are you working full-time/part-time/work at home?

3. How was your garden experience in home country?

4. What do you know about community gardens/farms before and after joining this program?

5. What crops do you grow?

6. Can you find plants/vegetables that you used to have in your home country?

7. What do you know about organic farming practices?

8. Are you growing your products organically? What do you think the obstacles of growing organically are in your case?

9. What level of commitment are you putting into your garden plot? (A scale of 1 to 5, with 5 as the most effort will be provided)

10. What do you consider your purpose for gardening? Why do you farm/garden?

11. Does your family help with the garden work? How much time (in hours) per week/day?

12. Do you know who your regular customers are?

13. Do you know what their interests are in terms of product selection?

14. Do you connect with other farmers/members? Do you think this connection helps you with your garden?
15. What do you think about the farming techniques here? What are the differences compared to your previous experience? How did the organization help with set-up, farming, marketing?

16. Did you receive guidelines regarding gardening and marketing practices?

17. What other guidelines/supports/technologies do you think that you would need from the organization?

18. What skills do you think you will need to be successful with your plot?

19. What do you think about your future with this garden? Will you keep working in this field or transfer it to your children?

20. What food safety practices (rinsing produce, cold storage, sanitizing bins, etc.) do you use for your vegetables?

21. Do you use any animal manure to fertilize your crops? What is the source of the manure (fresh from a farm or dried and purchased)?

22. When do you apply the manure, if any? What is the time period between application of manure and harvest of the crop?

23. Do you use a hand-washing system on the farm? How often do you use it?

24. Are harvest bins washed or sanitized before using?

25. Do you feel you have sufficient training or assistance with food safety issues?

Questions for community farm organizers

1. How many farmers participate in this program?

2. How did you choose the participants?
3. How do you decide who to accept in the program? Do the participants pay member fees?

4. What kind of support do you offer them?

5. Do you have any guidelines/orientation for new participants? Do you consider your program a training program?

6. What food safety practices (rinsing produce, cold storage, sanitizing bins, etc.) do you advocate for your farmers?

7. Do you feel you have sufficient training or assistance with food safety issues? What are your training sources (internal or external)?

8. How do you decide who is ready to run their own farm/garden? Any follow up support?

9. How many farmers have graduated? What do you think about their business in general?

10. What do you think your impacts are through this program? (financial stability, education gain, food security) How do you measure them?

11. What are your general sources of funding (state, federal, private)? How do you rely on partners to help develop and implement the program?

12. What is your social mission? What do you think you can achieve in the next 5 years?

13. Do you think these missions can solve some problems with income stability, food security, food safety, and education in Iowa, especially for the underprivileged?

14. What do you see as the biggest barriers for these participants? (gardening, social adjustment, financial) What do you see as the biggest barriers for your organization?

15. Which solutions have you used to deal with these barriers?
16. In your experience, has anyone left the program/community? Reason? Did you persuade them to come back to the program? Were you successful? If not, why not?

17. Do you have any stories that want to share about the garden/farm?