EQUITY AND INCLUSION IN THE GARDEN: FACTORS THAT FACILITATE IMMIGRANTS AND REFUGEES PARTICIPATION IN A COMMUNITY GARDEN NETWORK IN LANSING, MI

By

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A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

Community Sustainability – Master of Science

2020

ABSTRACT

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Lansing, Michigan, is a Mid-Michigan city with a growing urban agriculture system, including over 100 community gardens facilitated by the Greater Lansing Food Bank Garden Project (GLFBGP). It is also a place with a large refugee resettlement population. Twenty percent of the gardeners in 18 Lansing gardens directly managed by the GLFBGP are refugees and immigrants. We conducted an engaged research project of bio cultural mapping in three GLFBGP gardens with high refugee and immigrant enrollment which included ethnographic interviews and drawings with refugee and immigrant gardeners and a focus group with garden leaders from 6 highly-enrolled immigrant and refugee gardens. We set out to better understand: 1) the motivations of immigrants and refugees to engage in community gardening and 2) the ways the community garden experience facilitates belonging and inclusion both in the food system and in the local community. Our results illuminated four factors that facilitate inclusion and belonging of immigrant and refugee gardeners in the community garden network: (1) Social cohesion facilitated by altruistic activities and community building; (2) The process of replicating and adapting knowledge and being able to learn and teach; (3) Diverse incentives to recruit immigrant and refugee gardeners; and (4) Place based vision and resources that facilitate inclusion and belonging. This research highlight steps to create a more inclusive and welcoming community gardening and urban agriculture spaces, as well as inform best practices for the alternative food systems movement.

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INTRODUCTION

While much has been written about the issues of inclusion and diversity in alternative food movements, little of this research has focused on immigrants and refugees (Mares and Pena, 2010). The motivations of immigrants and refugees to engage in these alternative food systems movements is understudied (Mares and Pena, 2010). Further exploration of how urban agriculture spaces like community gardens can function as spaces for belonging and inclusion is needed (Jetner, 2017). This case study research investigates belonging and inclusion for refugee and immigrant gardeners in Lansing, Michigan, a Rust Belt city with a growing urban agriculture system that includes over 100 community gardens in a network supported by the Greater Lansing Food Bank Garden Project. The Greater Lansing Food Bank Garden Project directly manages 18 of the community gardens, where 20% of the gardeners are refugees or immigrants. Past research has focused on alternative food movement spaces and practices like community gardens, but little work focuses on the impacts and experiences of immigrants and refugees specifically, even though they are a growing population in urban agriculture across the U.S (Jetner, 2017). Therefore, I set out to better understand 1) the motivations of immigrants and refugees to engage in alternative food systems and 2) the ways urban agriculture spaces, like community gardens, can facilitate belonging and inclusion both in the food system and in local communities.

To accomplish this, I conducted a biocultural mapping of 3 immigrant and refugee community gardens in Lansing, Michigan. The results are drawn from interviews with 11 refugee and immigrant gardeners and supported by excerpts and participant observations from discussions that accompany drawings made by 11 interview participants about their ideal garden, as well as a focus group with six community garden leaders. The results identified four factors that facilitate inclusion and belonging of immigrants and refugees in the community garden: (1)

Social cohesion facilitated by altruistic activities and community building; (2) the process of replicating and adapting knowledge and being able to share knowledge; (3) diverse incentives bringing immigrant and refugee gardeners to the community garden network and; (4) place-based assets and activities that facilitate inclusion and belonging to a community garden network. These factors are nested within each other and collectively yield insights about facilitating the inclusion of immigrants and refugees in these community gardens. These factors facilitate inclusion and belonging of immigrant and refugee gardeners into the community garden network can inform our understanding for the creation of a more inclusive and welcoming alternative food systems movement. This case study can inform other alternative food system organizations' and communities' attempts to better facilitate the inclusion of immigrants and refugee gardeners.

LITERATURE REVIEW

This literature review highlights scholarship on the role of immigrants and refugees in the U.S. alternative food system, urban agriculture, and in community gardens. In the literature, the alternative food system identifies key attributes which run counter to the dominant industrial model such as employing diverse cropping systems, marketing more directly to final consumers, using organic or near organic management techniques, and maintaining small-scale production. (see Allen 2004; Beus and Dunlap 1990; Cochrane 1993; Lyson 2004; Minfoff-Zern 2019; Welsh 1997).

An immigrant is described as a person who comes voluntarily to a country to take up permanent residence, while a refugee is a person who flees to a foreign country or power to escape danger or persecution (Webster, 2019; UN, 2020). While immigrants and refugees experience different immigration journeys and have different legal status, they still experience similar resettlement-related challenges (Habeeb-Silva, 2016). Their status can also present a barrier for their engagement in alternative food systems participation due to associated employment level, financial insecurities, bureaucracy, English language competency, family separation, and unfulfilled expectations and hope around resettlement and migration (Habeeb-Silva, 2016). Categories like “refugee” and “immigrant” matter because they both reflect and shape people's opportunities and barriers to integration (FitzGerald & Arar, 2018). There are over 25 million refugees worldwide awaiting third country relocation (UNHCR, 2019) and voluntary migration patterns change often due to economies' push and pull factors and migration policies (CITED). In the United States, over 14 percent of the population is foreign born (Census, 2010), with close to 10 million people being undocumented and around 18,000 refugees annually arriving in the US (USCIS, 2020). This is important to know as many immigrants and

refugees go on to work on the dominant industrial agriculture system as farm workers and slaughterhouses and packing warehouses (Wald, 2007).

On immigrants and refugees in the US alternative *food system*

There is a rich tradition across the disciplines that explores connections between food, growing practices, and cultural identity, especially for racial and ethnic minorities living in the United States. Scholars offer important insights into the growing practices and foodways of immigrant and refugee growing practices as they negotiate transnational cultural influences and expectations, gendered constraints and opportunities, and changing political-economic conditions (Abarca, 2006; Counihan, 2009; Mares, 2012; Marte, 2007; Gaytán, 2011; Peña, 2005; Esteva,1994; Komarnisky, 2009; Gabaccia, 1998; Salazar, 2007). Immigrants (both voluntary and forced) and "ethnic food" have shaped eating habits in the United States: "the production, exchange, marketing, and consumption of food have generated new identities – for foods and eaters alike" (Gabaccia, 1998). Much of this literature explores food as a social and political symbol has changed the history of America's culinary tradition and moved towards multiculturalism.

There has been research that decries the negative consequences of the industrial food system and a call for eaters to return to more localized consumption practices, or what some advocates call "slow food" (Mares, 2012). This mainstream promotion and research of an alternative sustainable, promoting local food systems is best illustrated in the work of Nestle (2002, 2006), Berry (1996, 2009) and the mother–daughter team of Anna Lappe´ and Frances Moore Lappe´ (Lappe´ and Lappe´, 2002; Lappe´, 2010). The call for alternative food systems also emerged in response to the social inequities that surfaced from the increasingly globalized and conventional food systems throughout the 20th century (Watts, Ilbery, and Maye, 2005). In

response, organizations such as food policy councils, higher-education research organizations, cooperative extension, nonprofit, and broad networks of for-profit and not-for-profit entities formed to support the development of these alternative food systems. The call for inclusion in the alternative food system movement of traditionally underserved individuals such as minorities, refugees, and immigrants has recently emerged as an essential goal towards building a just and sustainable alternative food system (Giancatarino & Noor, 2014). Despite the nascent call for inclusion, some scholars argue that immigrants and refugees have long been absent from this alternative food system movement narrative (Wald, 2012; Mares 2012). In some cases, the alternative food movement in the United States has fallen into the trap of racial and class-based marginalization by constantly ignoring the issues affecting immigrants and refugees in the food system (Wald, 2012). They are also absent from the narratives by leading popular writers of this movement (see, for example, Pollan (2006) and Berry (2009).

Scholars critique the overwhelming trend among alternative food activists and actors of disregarding race and racial politics in both their narratives and spaces for building an alternative food movement (Alkon 2012; Alkon and McCullen 2011; Ludden et al. 2018; Guthman 2008a, 2008b; Minkoff-Zern 2017; Slocum 2008; Reynolds and Cohen 2016; among others). Through critical analysis, many food justice and food sovereignty scholars (See Alkon and Agyeman 2011; Allen 2004; Gray 2013; Guthman 2014; Minkoff-Zern 2014, 2017a; among others) are highlighting this exclusion and calling to create a more inclusive alternative food systems movement (Minkoff-Zern, 2017). In recognition of these critiques, food justice and food sovereignty coalitions are bringing farmers of color together to change the expectation for how a participant in alternative food system ought to look (Alkon 2007; Alkon and Mares 2012; Morales 2011; Reese 2018; Reynolds and Cohen 2014, 2016; Trauger 2017; White 2011). These

coalitions are increasingly looking at the conditions of farmworkers and farmers of color to advocate for a more inclusive food system (see Bowens 2015; National Sustainable Agriculture Coalition 2018). Many of these alternative food system organizations have not until recently considered immigrant and refugee gardeners.

Immigrants and refugees in urban agriculture and community gardens

Urban agriculture is a practice in or near an urban setting in which agriculture takes the form of backyard, roof-top and balcony gardening, community gardening in vacant lots and parks, roadside urban fringe agriculture and livestock grazing in open space (USDA, 2019). Urban agriculture is multifunctional (Lovell 2010, McClintock and Simpson 2017); it provides a wide range of ecological, economic, and social benefits, such as promoting biodiversity (Lin et al. 2015) and building community (Carolan and Hale 2016). Community gardening is increasingly being recognized as an example of urban agriculture, promoted in many parts of the world as a localized way to strengthen communities and build community belonging through food production (Drake & Lawson, 2015). Urban agriculture has long been considered an alternative food space that enables and is part of the alternative food system in the US.

In the Midwest, a region in the U.S. that experienced significant population declines and increased poverty as a result of deindustrialization, urban agriculture offers a potential solution for limited food access and vacant lots (Corrigan, 2011; Strunk & Richardson, 2017; Schilling & Logan, 2008). Cities like Lansing, Michigan across the Midwest have also developed urban agriculture projects with recent immigrants and refugees, many of whom have prior experience with agriculture in their home countries (Baker, 2004). These programs often attempt to promote migrant incorporation through food and entrepreneurship at community gardens, but new research is also working to demonstrate how gardeners construct identities and a sense of

belonging through participation in the gardens through the transfer of agricultural knowledge and produce to friends, family, and other community members (Strunk & Richardson, 2017; Griffin, 2017). This recent research represents the possibility of a broader inclusive food system (Strunk & Richardson, 2017).

There has been increased interest from scholars in examining the role of gardens, gardening practices, and the gardening experience for immigrants and refugees. Researchers have focused on how via gardens can express personal, social, cultural and environmental/ecological identities (Kiesling & Manning, 2010). Case studies of refugees and immigrants in community gardens highlight diverse themes and motivations for their involvement in community gardens such as: (1) land Tenure, which relates to the refugees having secure access to land with individual plots they can legitimately farm (Dyck, 2007; Sampson, 2010; Li 2010); (2) reconnecting with agriculture, which recognizes that many immigrants have their origins in farming communities or have been involved in small scale food gardens to supplement food available either in their home country or refugee camps (Morgan, 2007) and; (3) community belonging, which relates to the role community gardens can play in building relationships and facilitating integration into the local community (Kawachi, 2008). Participation in community gardens can facilitate processes of inclusion to overcome cultural, social and economic barriers commonly experienced by immigrants and refugees (Harris, Rowe, Minniss & Somerset, 2014). Other research on community gardens has recognized the capacity of gardens to build community and a sense of belonging among diverse groups through providing safe spaces for shared interests in gardening and associated matters. A qualitative analysis of community garden participants by Kingsley and Townsend (2006) in Port Melbourne, Australia with 55 community gardeners showed that community gardens generated a perception

of social connectedness amongst urban community members, and most participants noted that the gardens were a place to be more connected with the community whereas before they had felt isolated (Kingsley & Townsend, 2006).

Jetner (2017) identifies the need for further research in community gardens with high ethnic diversity. In her research examining race and racial diversity as a tool to build and gain social capital in community settings, she found a distinctive lack of racial and ethnic diversity across 55 community gardens in Richmond, Virginia. As well, in a 2015 survey by the American Association of Community Gardens, community garden leaders across the nation identified cross-cultural dialogue as both a benefit and a challenge of community garden involvement (Drake & Lawson, 2015). In response to this trend, advocates have called for the greater acknowledgment of cultural differences and more substantive efforts to incorporate immigrants and refugees into the planning process and governance of community gardens (Strunk & Richardson, 2017). Some garden programs have done so by increasing recruitment and retention of diverse gardeners while also focusing on plant biological diversity (The Garden Project, 2019; Pearsall et al., 2017).

On cultural and biological diversity in community gardens

While cultural diversity is increasing in cities at a global scale as a result of urbanization and immigration, biodiversity is decreasing with a subsequent loss of urban green spaces (Colding & Barthel, 2012). But cities host both varied physical environments (from parks to gardens) with plant biodiversity, as well as culturally diverse peoples (Hurley & Emery, 2016). New attention is being paid to specific landscape features, such as community gardens, as sites of biodiversity and sources of socio-economic functions through the provision of food and medicine (Hurley & Emery, 2016). This growing body of research on urban community gardens

has focused on the cultural and social dimensions of urban gardening (Draper & Freeman, 2010), while agroecological factors such as biological and biocultural diversity are underrepresented (Guitart, Pickering, and Byrne 2012). Some research exists on this topic, including one study that assessed bee richness in community gardens in New York (Matteson, Ascher, and Langellotto 2008), and the recent research that evaluated biodiversity and direct ecosystem service regulation in community gardens in Los Angeles, California (Clarke and Jenerette 2015). Additionally, Lorraine Weller Clark and Darrel Jenerette's (2015) study of fourteen urban community gardens in Los Angeles, California, found that cultivated biodiversity was related to income, garden plot size, and gardener ethnicity. Most recently, Pearsall et al. (2017) assessed the influence of cultural identity on cultivated biodiversity and motivations for gardening in eight community gardens in Philadelphia.

RESEARCH DESIGN

This study was conducted in the urban area of Lansing, Michigan, United States, where over 5,000 people representing 28 different nationalities have resettled in the last 50 years (Refugee Services, 2019). The Greater Lansing Foodbank's Garden Project (the Garden Project) is an organization that helps refugees, immigrants and local residents meet needs related to food security and community connections. The Garden Project supports more than 100 community gardens across seven counties and provides access to land, training workshops, and resources for community growers (GP, 2018). Many of the Garden Project's gardens are connected to schools, churches, and food pantries serving urban, suburban, and rural communities. The Garden Project directly manages 18 community gardens, and across those 18 gardens over 20% of participants self-identified as refugees or immigrants. (GP, 2018). The community gardens usually have a garden leader and the Garden Project has an online database of all the gardens in the network with contact information of the garden leader and information how to enroll. The Garden Project reports that out of the 100 community gardens they support, ten serve primarily immigrant and refugee participants.

I was a participant in one of the same community gardens where I was recruiting study participants, growing my own food alongside local gardeners. I also conducted observations in 5 of the community gardens and visits to the 10 community gardens with the largest enrollment of immigrants and refugees. Even though I am a new resident in Lansing and a newcomer to their community garden network, and an immigrant myself, having grown up in the Dominican Republic until I was 15 years old, I am also an academic. As a graduate student academic, I am in a position of power, owing to my ability to decide what questions to ask, how to interpret the data collected, and where and in what form the research results should be presented (McLafferty,

1995; Staeheli and Lawson, 1995). As such, I recognize the privileges and powers that come from being an English speaker female immigrant obtaining a higher education degree (See Appendix A).

To address this inherent power dynamic and its impact on the research process, this project is grounded in a community engaged research framework. Conducting community engaged research requires researchers to share some of their power, for example share decision making power in protocol design like surveys and questionnaires within the research process, which makes the work more complex because of the necessity to redefine and transform traditional power relations in research (Reid et al., 2004). By working directly and actively with the Garden Project Director and the Garden Project Immigrant and Refugee Garden Liaison, I strived to share power with my community partner. I followed their lead and knowledge to develop what I hoped was a culturally sensitive protocol that was attentive to language diversity and time demands of research participants. The most important technique in this relationship was clear and frequent communication about the project status and proposed next steps. We met at least monthly and/or provided regular check-in emails or text messages about the status of the project, next steps, challenges, and questions. To address power inequities, we often met at the preferred location of the community partner and sometimes also shared informal check-ins over meals or coffee to facilitate relationship building (See Appendix B). During these meetings, my partners brainstormed additional research questions and provided feedback on the proposed research activities and protocols. In these exchanges, the Garden Project partners shared that the proposed research questionnaire would be taxing and potentially insensitive to the time demands of the participants. As a result, I narrowed the scope of the research and questionnaire

I acknowledge that despite my efforts to create more democratic spaces of knowledge production and co-production, inequalities persist among research partners (Caretta & Riano, 2016). Research involving people in situations of forced migration (refugees) deepens our understanding of their experiences as newcomers but also poses specific ethical challenges and opportunities (Clark-Kazak, 2017). Given this sensitive legal status, there is a need to consider ethical obligations to minimize risks (Clark-Kazak, 2017). I reflected often on my positionality, as being reflexive helps reveal how one is inserted in grids of power relations and how that positionality influences methods, interpretations, and knowledge production (Kobayashi, 2003). This reflective process increases my accountability to my values and strengthens my commitment to conduct quality and ethical research based on building relations of mutual respect and recognition as recommended by Peake and Trotz (1999). Reflexivity and positionality of ethical approaches can more broadly process and provide better explanations of how issues of social justice, equity and democracy are implicated in community engaged research with marginalized populations. (Sultana, 2007).

METHODOLOGY

In Summer 2019, I recruited eleven participants for a biocultural mapping project in three Garden Project community gardens serving primarily immigrant and refugee gardeners: Webster, Foster and Hill. Biocultural mapping is a community-based ethnographic and mapping project that is carried out in collaboration with community members to observe biocultural diversity (Gilmore & Young, 2011). Biocultural diversity is defined as the total variety of natural and cultural assets in a particular place such as the diversity of plants, animal species, habitats and ecosystems, as well as the diversity of human cultures and languages (Maffi, 2008). For this process of biocultural mapping I utilized the following methods: interviews, observations, pile sorts, drawings, a focus group, and plant inventory (Table 1).

Method	Objective/ Research Question	Who/How	Proposed Analysis
3 Informal garden-based interviews	To understand the growing practices and motivations for gardening	n= 11 refugee and immigrant gardeners	Emergent thematic analysis
Pile sort of plant pictures	To categorize plants uses (food, medicinal, religious)	n= 7 refugee and immigrant gardeners	Emergent thematic analysis
Drawings and Drawings Interviews	To document the ideal and material garden	n = 5 refugee and immigrant gardener participants n = 5 garden leaders	Indexing and Emergent thematic analysis
Focus group with garden leaders	To further categorize emergent patterns and differences between the refugee and the local gardeners	n = 1 (6 participants) Community garden leaders	Emergent thematic analysis

Table 1. Research Methods Overview

Table 1 (cont'd)

Method	Objective/ Research Question	Who/How	Proposed Analysis
Plant Inventory	A plant inventory	3 refugee and immigrant gardens 3 non-immigrant refugee gardens	Abundance analysis

Recruitment of gardeners was accomplished through: 1) contacting my personal connections and connections in the network of the Garden Project Refugee Liaison, 2) posting flyers in the gardens, 3) including announcements in the Project online newsletter, 4) sending emails to garden leaders to distribute to their garden members, and 5) approaching gardeners while in the garden to attain a convenience sample (Creswell, 2018). The desired sample size of 12 across the three community gardens followed the suggestions of case study researchers to study a few sites and individuals but collect extensive detail about each location and participant (Creswell, 2018). The sample size of 12 seemed feasible, and it followed similar sample size in qualitative research about community gardens.

I recruited participants when they are usually in the garden and scheduled follow up interviews for times they planned to be there. To make the research process convenient and easy for them. I also developed a series of short interviews, rather than one or two longer, more involved interviews, both to provide an opportunity for relationship building over time, as well as to limit the time investment of participants in any one meeting. After six weeks of data collection and recruitment, I was struggling to meet my recruitment goal of 12 participants and had failed to recruit participants from the Hill Garden, one of the three planned sites. To improve recruitment, we conducted snowball sampling by asking committed participants for

recommendations for other gardeners who might be appropriate for the research protocol. Additionally, I sent personalized emails to gardeners rather than group emails to whole-garden lists and changed the recruitment location from Hill Garden to Paradise Garden, another high-enrolling immigrant and refugee garden, which yielded more research participants. To encourage participation and show appreciation for participants' time investment spent, we offered a $10 grocery gift card after each research activity (five total). While I did finally enroll 11 participants in the study, attrition occurred. Only five participants out of the 11 completed all the data collection activities: three interviews, pile sorts and drawings (See Table 2). Of the seven who did not complete the entire study, most dropped out after the interviews and before the pile sort and drawing activities. Therefore, our analysis includes 31 interviews with 11 participants. Data collection continued into Fall 2019.

Participant Code	Country of Origin	Status	Garden Name	Interview 1	Interview 2	Interview 3	Pile Sort	Drawing
1	Malawi	Immigrant	Foster	X	X	X	X	X
2	Malawi	Immigrant	Foster	X	X	X	X	X
3	Kenya	Immigrant	Foster	X	X	X	X	X
4	Malawi	Immigrant	Foster	X				
5	Burma	Refugee	Webster	X	X	X		
6	Bhutan/ Nepal	Refugee	Webster	X	X	X		
7	Bhutan	Immigrant/ Refugee	Webster	X	X	X		
8	Nepal	Refugee	Webster	X	X	X	X	
9	Congo	Refugee	Webster	X	X	X	X	
10	Kenya	Immigrant	Paradise	X	X	X	X	X
11	Haiti	Immigrant/ Refugee	Paradise	X	X	X	X	X

Table 2. About the Participants

Interviews (n=11)

Three face-to-face semi-structured interviews were conducted during the growing season with each of the 11 participants (Bernard and Gravlee, 1998). Interviews were audio recorded for accuracy and transcribed later by a research assistant. Interviews were carried out in English either in the gardens where participants had assigned plots or in other community locations convenient for the participants, such as the Garden Project Resource Center or their workplace offices. Translators were made available for participants by request if they felt more comfortable interviewing in their native language, but all participants chose to interview in English. By spacing out the interviews over three separate engagements in the course of six months, I aimed to reduce research fatigue and build relationships with the research participants. The questions for these interviews were developed with reference to Vogl et al. (2004), Taylor and Lowell (2014, 2016), Strunk and Richardson (2017), Griffin (2017), Harris, Rowe, Minniss and Somerset (2014), and related to gardening history, gardening knowledge, and motivations for engaging in gardening practices. (See Appendix C).

Plant Pile Sorts (n=7)

Pile sorts were also conducted. For this activity, participants were provided a deck of images of plants in the community gardens. I carried out the pile sort activity with an extensive deck of cards with pictures of plants that are known to be grown in the garden, its fruit or vegetable, and its name in the languages of our research participants. I asked them to begin by sorting the picture cards into different piles based on whatever characteristics they considered most useful in segregating the plants into categories. I then followed up with prompt questions ~~i~~n order to understand the logic underlying each category they had created. For example:

Here is a deck of cards of the plants that we found in your plot and around the garden. What I'd like you to do is create categories with these cards, however makes sense to you. What plants go together for you? There is no right answer! I'm only interested in what the plants mean to you. Tell me about the groups that you created. What plants that you grow are missing from this deck?

I took pictures of the decks of cards and also notes of the categories participants created to analyze their decks and decision-making process. See figure below:

Figure 1. Plant Pile Sort example

This method was assumed to help second language speakers express knowledge better than narrative and/or interview approaches. Pile sorts can be helpful to assess culturally defined relationships (Anja Chustanell et al., 2010) and have subsequently proven useful in the accurate cognitive mapping of natural resources and assets like plants and plant uses (Anja Chustanell et al., 2010). Pile sorts can help reveal how people perceive relationships between different items, and consequently provide insights into the knowledge system and practices shared by members of a community of practice (Weller and Romney, 2011). For example, through pile sorts, researchers can identify how community members conceptualize the different medicinal uses of a collection of plants, hence providing insights on the taxonomy of plants and ethnobotanical

knowledge. In our study, pile sorts provided a way to validate the interviews (Creswell, 2018) (See Appendix D).

Drawings (n=5)

Visual representations of phenomena, places, and experiences such as gardening can provide a rich understanding of the refugee and immigrant gardeners' motivations and desire-for an ideal garden. Participants in this study were asked to create a drawing based on the following prompt:

> *Close your eyes and imagine your most perfect garden. The sky's the limit! You have as much space as you want. You have access to as many varieties and whatever quantity of seeds and plants you desire. Garden and financial resources are not an issue.*

Gardeners were given a week to do the drawing and provided with the supplies to do so, though some preferred to do it on the spot. In-person drawings were conducted in 3-7 minutes on average. While the intention was to use the drawings as a low stress option for data collection that relied less on language skills than the more traditional interviews, participant feedback revealed that the exercise was actually somewhat intimidating because they were insecure about their artistic skills. A total of five participants completed the drawings and a short follow-up interview about the content, in which the drawings were used as prompts to talk about desired features for the community garden landscape and participants' vision of the kind of place they wanted their garden plot to be and how they plan to accomplish it. Discussions about the drawings and desires for the garden plot seem to highlight previously unspoken vision and reflections about their reality as immigrants and refugee gardeners (See Appendix E).

Focus Group (n=6)

In Fall 2019, I conducted a focus group with garden leaders from high refugee and immigrant-enrolled gardens. Leaders from nine of the ten primarily refugee and immigrant-enrolled community gardens were invited, and six garden leaders attended. The focus group lasted approximately one hour and forty-five minutes. Only nine were invited because the tenth garden did not have a garden leader. The focus group was audio recorded for accuracy and transcribed later by a research assistant. The facilitator guided the discussion, while a notetaker took manual notes. Snacks were provided and a $20 cash compensation was offered to participants. Participants were asked about their leadership style and the opportunities and challenges of managing cross cultural garden spaces (See Appendix F). They also completed the same drawing activity about their ideal garden provided to interview participants. The focus group provided an opportunity to understand how non-refugee/immigrant gardeners recognized the refugees and immigrants as gardeners and as community members. This follows Jettner's (2017) call for future researchers to consider how garden leaders and organizers promote race and class diversity within their gardens, especially when those gardens are located within low-income and racially diverse neighborhoods.

Plant Inventory (n=6)

A plant inventory was conducted in 6 community gardens. It was conducted between July-October of 2019 and employed 4 different research assistants. Research assistants visited the gardens and identified plants and recorded abundance by cover area of each crop. Unknown plants found in the gardens, their pictures were taken and identified later.

ANALYSIS

The following analysis draws from the interviews. Additionally, excerpts from focus groups, observations, and drawings are represented in the results to strengthen and ground the finding of the analysis. Interviews analysis took place concurrently with data collection and continued after data collection was completed. I wrote analytic memos during the data collection process as a participant observer and while analyzing data to capture insights, connections, and possible analysis considerations (Saldaña, 2013). I memorized as a way to reflect on the coding process, hold my codes accountable and start making sense of the relationships across the codes so I could begin to group them into categories.

First, as a practice exercise I used a deductive coding approach and created a codebook by open-coding one interview guided by the research questions and (Galman, 2018). I did this as some methodologists advise that your choice of coding method(s) and even a provisional list of codes should be determined beforehand (deductive) to harmonize with your study's conceptual framework, paradigm, or research goals (Saldaña, 2013). I then assigned that codebook to other interviews, pile sorts, and drawing debriefs in MAXQDA, a software program designed for computer-assisted qualitative and mixed methods data, text and multimedia analysis. Coding is not just labeling, it is linking: "It leads you from the data to the idea, and from the idea to all the data pertaining to that idea" (Richards & Morse, 2007, p. 137). These codes used language I drew from the literature and grouped data into broad categories of my research such as Knowledge Transfer, Knowledge Adaptation, Traditional Crops, Motivations and Benefits, and Inclusion and Belonging. I chose those codes before I started this process. Overall, I valued the deductive coding process because it helped me connect participant language with these large concepts/theories/frameworks. While a deductive approach does not eliminate participant voices,

it does introduce some ethical challenges for me because I was not using participants' language to describe their own experiences. This research is with immigrants and refugees, who are often considered a marginalized population and voiceless in the governance of their food system. Primarily for that reason, I don't want to overlook or miss the opportunity to communicate their actual words, so my next step was to code interviews with an inductive approach that preserves participants' voice.

I started fresh with the data and coded ten interviews out of the 31 interviews as recommended by Campbell (2018) to start the coding process and create a codebook with 20-30 percent of the. This line by line process required more attention to details to assign In-Vivo codes. In-Vivo Coding is appropriate for virtually all qualitative studies, but particularly for beginning qualitative researchers learning how to code data, and studies that prioritize and honor the participant's voice (Saldaña, 2013). This coding type challenged me to define and separate diverse concepts that were emerging from the data as it was an inductive process. After I assigned those codes, I grouped similar codes under a parent code after I used participant language to describe the code names and groupings, and then provided a narrative description to explain the boundaries of language that would qualify in that code and description to each code. Some of the codes that emerged were: Traditional Crops, Sharing, Back Home, I Love the Most and Gardening Here. Later on, I created criteria for inclusion and exclusion as suggested by McQueen (2013).

The process of qualitative data analysis is full of nuances that require patience, attention to detail, discipline, and commitment to fully represent the voices of your research participants. As a young and beginner qualitative researcher my goals and commitment are to truly communicate my research participants' experiences. The process of qualitative data analysis

encourages me to really embrace and confirm my commitment to a topic that I care about. That is why the analysis presented below is based on an inductive approach utilizing the participants' language. After a detailed constant comparison method approach, where I revisited my codes for accuracy on every coding cycle (Glaser, 1965) on all the interviews I finished a codebook that was reapplied to all the interviews, because coding is a cyclical activity. Rarely is the first cycle of coding data perfectly attempted. That is why I completed six cycles of coding data to filter, highlight, and focus the salient features of the qualitative data record for generating categories, themes, and concepts, grasping meaning, and/or building theory (Saldaña, 2013). When codes are applied and reapplied to qualitative data, codifying, a process that permits data to be "segregated, grouped, regrouped and relinked in order to consolidate meaning and explanation" emerges (Grbich, 2007, p. 21). This process allowed me to better define my codes, and later on I created criteria for inclusion and exclusion as suggested by McQueen 2013 for those codes. By the 3 cycle not news codes emerged and that gave me confidence that my codebook was saturated.

In order to offer some validity and trustworthiness to this protocol, two experienced qualitative researchers review my codes and codebook biweekly to demonstrate researcher accountability (Saldaña, 2013). Exemplary text from these codes in the transcripts was taken and placed into data display tables organized by category (See Appendix G) (Rubin and Rubin, 2012). Reflections and memos about the patterns and trends identified across research participants were created by me to help create these categories.

Four parent codes emerged as the most present and important drivers and mechanisms of refugee and immigrant gardener's engagement in the community gardening network:

(1) Social cohesion facilitated by altruistic activities and community building

(2) The process of replicating and adapting knowledge and being able to learn and teach

(3) Diverse incentives to bring immigrant and refugee gardeners into the community garden network

(4) Place based assets and activities that facilitate inclusion and belonging to a community garden network

I describe the results below and share examples from the interviews, focus group and drawings to illuminate relationships across these four categories.

RESULTS AND DISCUSSION

Using the results from a biocultural mapping, the process of mapping natural and cultural assets such as the diversity of plants and the diversity of human cultures and languages, I put forward 4 major factors that facilitated inclusion for immigrants and refugee gardeners in a community garden network. As natural and cultural assets are intertwined and unique to this case study, these factors are not presented in a hierarchical or linear way. All these factors are nested with each other and collectively yield insights about facilitating the inclusion of immigrants and refugees in community gardens.

Social cohesion facilitated by altruistic activities and sharing

In the interviews, codes emerge like need, donation, and sharing as salient across the coded interviews. Those codes were labeled as altruistic actions as parent code. The opportunity to engage in these altruistic actions is a factor that builds and leads to social cohesion.

Social cohesion refers to the extent of connectedness and solidarity among certain members in a given society. As Manca (2014) explains, social cohesion has two main dimensions: the sense of belonging into a community and the relationships among members within the community itself. As it has been presented before in other community garden research, cultivating a green space with others promotes a sense of "connectedness" and social capital (Hoffman, 2018; Egoz & Demardi, 2017; Harris, Rowe, Minniss & Somerset, 2014). As Hoffman (2018) shows, the shared responsibility between gardeners and communication necessary to grow and care for the plants produces a sense of community "buy in" that ultimately raises their sense of social connection and social capital. In this study many participants identified the ability to donate and share surplus produce from the garden with family, friends, and other community members in need as a mechanism that facilitates their social cohesion to the community.

A participant describes:

> Because we cannot use all of it, like the tomatoes, the plants that we get are just too many. So we donate and we also share food with friends, family members and friends at our church, we donate those and other stuff to the food bank as well

This is an example of how refugee and immigrant growers see participating in a community garden network as an opportunity to practice altruism and help those experiencing food insecurity. At the same time, these altruistic actions strengthen their social connections in the community. Community garden networks and programs offer structured opportunities for growers to donate and share their produce such as "Plan a Row for the Hungry." Produce being shared on the refugee and immigrant growers' social networks is providing informal food assistance and possible food security coping mechanisms to others. These altruistic acts cannot be accounted for because they are informal and there is no traceability. It is important to highlight that immigrant and refugee growers are not often seen as assets in these kinds of food assistance programs, instead as recipients and beneficiaries. Refugees and immigrants have been found to demonstrate not simply as victims of political turmoil but also as agents in overcoming diversity and actors in reshaping social relations and power formations (Hampshire et al. 2008). Often, many communities and organizations fail to recognize these populations as the rich resources for volunteerism and giving back, which they are (Weng and Lee, 2015). Thus, their active, formal and informal participation in produce sharing and donation makes them tangible assets in a community garden network that is rooted in fighting hunger. Their desire and motivation to engage in emergency food relief activities such as donating and sharing food is an explicit way refugee and immigrant growers exercise a community role that strengthens their connection to their host community.

Sharing food and produce continues a strong motivator that attracts people to the garden. According to the concept of commensality, sharing food has properties in its ability to turn self-seeking individuals into a collective group (Belasco, 2012). This belief is also expressed in the latin based words “company” and “companions”: the people with whom one shares bread. I argue that commensality goes beyond bread and food and extends to plants and seeds as an act that builds social cohesion. A participant describes:

> Like over here my community peoples grow their at the same- same kind of plants. Maybe... two, three plants are different, but exactly the same we grow it over here. I do some plant long beans, my sister does the same, long beans... spinach, similarly, but they never asked us about anything else, like you have any seed like that. Sometimes they ask but never ask for the seed.

As reflected in the quote above, we seek the lack of sharing or interest of sharing seeds and produce that might be new or unknown with their local counterparts makes the refugee participant more hesitant and dubious about the community garden network. As I will explain more later on, this is an opportunity to strengthen the relationships between immigrants and refugees and their local counterparts while using seeds, plants and food as intercultural connectors.

All participants identified talking as a way of making connections in the garden as a community bonding activity that facilitates their social cohesion. Code emerges such as talking that was placed under the parent code connection. Connection is desirable when you are trying to build social cohesion.

A gardener declared:

> The community purpose of the community garden is not just to plant plants and be done with it, but also to form some community bonding. So we learn from one another, we share experiences, and it is also a place where we can hang up.

Experiences like this were presented by most gardeners who saw their respective community gardens as places to develop community, make connections, friendships, and spend time with family. Many gardeners expressed how the garden allows them to speak with people who they might not otherwise engage with. Most times these conversations are about gardening, crops, the weather, and just a simple exchange of pleasantries and greetings. The Garden Project community garden network facilitates and promotes the enrolment of people with different social, economic, and ethnic backgrounds. Thus, connecting neighbors and residents that live near the community garden offering them an opportunity for social interactions. Many gardeners expressed having a sense of social isolation before joining the community garden, which changed after joining the garden and having a place to connect with others. This reaffirms the literature that community gardens can serve both as bonding agents to help bring historically diametrically opposed groups together through sharing resources in the maintenance of the gardens and also serve as “bridges” to extended communities where individuals may have limited contact with other residents in geographically more distant regions and neighborhoods (Hoffman, 2018). A participant describes:

> But at least I feel good because even when you're gardening, random people pass, you- you get to learn the environment in- in the garden and in the neighborhood. And then sometimes actually it's so funny that you- you see people every day until you start saying hi like you know them.

As the participants describe their constant visible presence in the garden makes them visible to others and gives the opportunity to interact with members of their neighborhood and community garden. The significance of community is another theme well described in the literature, with gardens being described as locations for the fostering of "neighborly engagement", and connectedness (McVey et al., 2018). Much of the research on community gardens has recognized the capacity of gardens to build community and a sense of belonging among diverse groups through providing safe spaces for shared interests in gardening and associated matters. Community gardens generated a perception of social connectedness amongst urban community members and most participants noted that the gardens were a place to be more connected with the community whereas before they had felt isolated (Kingsley & Townsend, 2006).

The process of replicating and adapting knowledge and being able to learn and teach knowledge

In the interviews salient codes emerge about the replication and adaptation of gardening practices and knowledge such as "back home", "learning", "gardening here," "we garden this way" and "teaching". As all these codes refer to knowledge, I will explore more about that concept next. Traditional ecological knowledge has been defined as "a cumulative body of knowledge, practice and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relation of living beings (including humans) with one another and with their environment" (Berkes, et al. 2000; Reyes-García, et al 2013). Current research widely acknowledges that Traditional Ecological Knowledge (TEK) is dynamic and constantly changing (Berkes, et al. 2000; =Gomez-Baggethun, et al. 2010; Reyes-García, et al. 2013a) While TEK refers to knowledge that is rooted in a single place, it also recognizes that immigrants, refugees and ethnic minorities carry valuable and distinct biocultural knowledge to metropolitan areas (Maffi, 2001). TEK includes all the forms of traditional knowledge of a

group, and plant use knowledge is commonly used as a proxy to measure TEK (Camou-Guerrero, et al. 2008; Dovie, et al. 2008; Giovannini, et al. 2011). New attention is being paid to specific landscape features, such as community gardens, as sites of biodiversity, replication of TEK, and a source of socio-ecological functions like the provision of food and medicine (Hurley & Emery, 2016). Gardening culture-specific food plants represent a continuation of cultural practices and traditional agroecological knowledge associated with the place of origin of immigrants and refugees (Taylor & Lovell, 2016).The growing body of research on urban community gardens has focused on the cultural and social dimensions of urban gardening (Armstrong 2000; Hanna and Oh 2000), while agro-ecological factors such as TEK, biological and biocultural diversity are underrepresented (Saldivar-Tanaka and Krasny 2004; Guitart, Pickering, and Byrne 2012).

Participants described the garden as a place where TEK is reproduced and transmitted. At the same time gardeners said their knowledge is being adapted and expanded because they are learning new ways of food production, knowledge about planting and using new plants.
A gardener describes:

> We used to do a lot of gardening back home. And from there, I learn most of the gardening, but learning didn't stop there, you keep learning, like when I came here. I am still learning. Like for example, like back home we make beds when we put a garden, we put beds there, because you can put the water in the beds, but you have to put the proper lining, the plants properly, fine, so I am still learning.

The gardening space that the Garden Project provides to immigrant and refugee growers is an important space for them to reproduce their traditional knowledge about food production and transmit their ethnobotanical knowledge to their family members and fellow gardeners. That the

garden space provides a place to replicate and adapt knowledge is important for immigrant and refugee growers to preserve their foodways, identity and prevent dietary acculturation, the process by which immigrants and refugees adapt to U.S. diets and lifestyles (Ayala, Baquero and Kingleer, 2008) . Thus, previously gardens have been called places of "cultural resistance" (Muzamar, 2011) where refugee and immigrant gardeners can replicate their traditional growing practice to have access to their foodways.

The process of migration, forces immigrants and refugees to adapt their TEK. For example, an immigrant participant describes:

> After that (losing a crop), we said we have to be careful, so we have to learn, so now we strategically plant crops and start them in winter as well, so that is something that changes over time. I change the plants, sometimes I change. I try to grow some plants, and if they don't grow good, I change them.

Participants describe an experiential learning approach to learn to adapt their knowledge to the new climate and growing conditions of Mid -Michigan. While models exist for immigrants and refugee growers to learn to adapt their TEK to their new landscape like farmers-farmers and culturally sensitive farmers school and training (Carolan, 2016). Other models like the classic "extension model" disregard embedded TEK by immigrants and refugees and presumes a linear approach of knowledge exchange (Carolan, 2016). This reinforces our understanding of knowledge not only as something we think, but also as something we do or practice. Focusing on saving, utilizing and adapting immigrants and refugees TEK helps ensure the preservation of their knowledge, which will in turn help ensure the preservation of genetic, biological and cultural diversity (Carolan, 2016).

Gardens are also a space of cultural and knowledge exchange between people of diverse backgrounds and with different knowledge about food production. Gardeners learn new knowledge related to food production and experience news foods and foodways from their fellow gardeners. A participant describes:

> And the different plants we plant. I know others will look at me and I know the first time we planted amaranth, people were inquiring what is this and we share the nutritional content of that and everything. I feel like I am able to contribute a little bit of knowledge there.

This learning process represents an asset, as knowledge diversity around a common topic such as food production can help community gardens be more resilient towards weather events. Also, sharing knowledge about food production, food preparation and food ways is another way to practice what I will call horticultural diplomacy and cultivate relationships between culturally diverse people. Food as an essential ingredient of human existence, has been used as a medium for projecting influence, communicating one's culture and conveying messages that express friendship or enmity (Luša & Jakešević, 2000). The role of food is becoming increasingly prominent in the public diplomacy practices of various countries, as it can serve as form of cultural exchange, a promotional tool and for mutual understanding (Rockower, 2012). Thus, culinary, gastro or food diplomacy is the use of food and cuisine as instruments to create cross-cultural understanding in the hopes of improving interactions and cooperation by chefs, diplomats, cultural and tourism agents (Cultural Diplomacy Project, 2020). I present the term horticultural diplomacy as a way where gardeners from diverse cultural backgrounds use learning and teaching traditional agro ecological knowledge about plants usage, plants, and growing practices as an instrument to facilitate cross-cultural understanding in the hopes of

improving belonging, inclusion and cooperation in a community garden setting. In a 2015 survey by the American Association of Community Gardens, community garden leaders across the nation identified cross-cultural connections as both a benefit and a challenge of community garden involvement (Drake & Lawson, 2015). In response, advocates have called for the greater acknowledgment of cultural differences and more substantive efforts to incorporate immigrants and refugees' vision for community gardens are managed (Strunk & Richardson, 2017).

Diverse incentives bring immigrant and refugee gardeners to the community garden network

In the community garden literature, benefits, incentives, and motivations are used almost interchangeably to describe the different drivers that lead people and organizations to engage in community gardens. Community gardens are defined by a growing diversity of gardeners and gardening motivations that will sustain the current community gardening movement well into the future (Birky and Strom, 2013). Previous research has focused on how community gardens provide direct personal benefits by creating a space where gardeners thrive physically, psychologically, and socially (Pouslsen et al, 2017). These motivations reflect goals for physical health, nutrition, the social environment, connection with nature, increasing civic engagement, and psychological health (Draper & Freedman, 2010; Sonti & Svendsen, 2018; Veen et al., 2016). There are still significant gaps in our understanding of what immigrants and refugees need and want as they try to integrate into the U.S. food system and culture (Sanou et al, 2014).

In the interviews with 11 immigrants and refugee gardeners identified four broad factors that encourage participation in the gardens of the community garden network: Quality of the food, financial savings, wellbeing, and access to traditional crops.

Traditional Crops

A participant said, “I grow food that I wouldn't find in the store.” This supports literature of why immigrants and refugees choose to engage in community gardening (Cited). It is often perceived that growing traditional crops is the only motivation that brings refugee and immigrant gardeners to community garden spaces. However, as I have explained above there are several other motivations why they do engage in community gardening. It is important to challenge the narrative that traditional crops are the only motivation driven by diverse gardeners as they have diverse motivations.

Quality of the food: Freshness, Taste, Nutrition and Health

Some incentives focus on the qualities of the food cultivated such as freshness, taste, nutrition, and garden produce perceived as healthy. A participant describes, “Because in the community garden if we get fresh food and fresh vegetables in our garden, yeah.” A participant then complements, “It is a vegetable, if we eat more vegetables we become more healthy.” This confirms other literature that community gardeners are motivated for a desire for fresh food that is healthier (Corrigan, 2011). Lack of access to quality fresh and healthy food has been cited as barriers for immigrants and refugees to maintain healthy eating practices (McKey, 2020).

About Production: Chemical Free and Knowing Where You Food Comes From

Other incentives focus on gardening itself as the ability to know where your food comes from and what production methods were utilized in the crops such as chemicals, chemical free or organic practices. “I feel is the best thing for me and I can get my own crops planted and organic and without applying chemicals or nothing I love that.” Another participant compliments, “You get your own food and you know how you grow it.” These motivations are really important to highlight as it is one of the cornerstones of the alternative food movement that has often

neglected to incorporate the motivations of people of color. Although immigrant and refugee growers are engaged in growing practices that could be classified as alternative food practices, they encounter barriers when trying to access alternative farming institutions, spaces, and visibility as players in the alternative food movement (Zenn-Minkoff, 2019). These desires for transparency and trusting food practices is confirmed in other research with immigrants and refugees' food preferences (McKey, 2020).

Financial savings: Money Saving

A participant describes, "And like last year I didn't buy a lot of tomatoes because a lot of them came from the garden, so I saved a lot on groceries." The community garden literature has mixed reviews if money saving is an actual benefit or just a perceived one. The Garden Project community garden network has facilitated and promoted community garden spaces and resources during times of economic hardships (economic recession of the 1980's, the economic recession of 2008) (GP, 2019). In other cities, officials also promoted gardening on vacant land and school grounds during economic crises (Lawson, 2005). It is important to know that due to the low economic inputs the gardeners need to participate in the community garden, the gardeners perceived this activity as money saving. As much of the inputs (seeds, plants, tools) are provided by the Garden Project.

Wellbeing: Leisure and Exercise

Other participants express motivation driven by the physical and psychological benefits of gardening. "Gardening is my leisure time" and "I enjoy the garden because it offers me a form of exercise" also confirm previous literature that gardening directly enhances physical health is an incentive for gardeners to garden in a community garden (Poulsen, 2014). All the incentives that the refugee and immigrant gardeners offered are similar to the ones white anglo gardeners

have offered in similar studies about community garden engagement. Showing that motivations to participate in urban agriculture in a community garden network might not be as different as presumed. A garden leader in the focus group reaffirms that finding common motivations between the immigrants and refugee gardeners helps appreciated and welcomed them in the community garden:

> They're a person. They're my neighbor. You know, and they're i- they're in my neighborhood's, they're in our churches, they're in our schools. And we have to really reach out and acknowledge that this is another human being. And it's not just a number in the garden or whatever. It's- it's another person that's coming there because they want to do... the same things I do. They wanna grow a garden, they wanna feed their family. They wanna interact with their community.

Overall, knowing that in this cross-cultural space people of diverse and different backgrounds have similar incentives helps facilitate belonging and inclusion.

The place based assets and activities that facilitate inclusion and belonging to a community garden network

In the interviews, codes emerged like “garden qualities”, “garden resources”, “I love the most about gardening”, “Garden Project” and “community space” that are related to the community gardens as a space and place. In order to better understand these concepts, I explore placemaking as an overarching theme with all these concepts. Placemaking can be described as a collective effort of different people with the aim of improving the lived space (Styrdom, 2017). As community gardens are often an extension of the lived space of the gardeners it is a natural place to enact placemaking in the community. In a case study of community gardens and placemaking in Germany (Karge, 2018) these detailed principles emerge to enable place making:

(1) community network and vision: relation of different stakeholders in gaining knowledge and developing the place;

(2) function and design: priority of functionality for the people over design objectives;

(3) iterative development: precedence of a step-by-step process of testing and implementation; and

(4) dealing with obstacles: handling of constraints in relation to power and resources.

Similar principles emerge in our research project, but more strongly 1) community network and vision and 4) dealing with obstacles. Perhaps 2) function and priority and 3) iterative development are present but not salient. We explore the salient principles below.

Community network and vision

The community network and their vision for an ideal community garden helps gardeners and garden leaders to develop placemaking (Karge, 2018). Landscape and landscaping vision can be a source of disagreement based on cultural identities, preferences and values (Mazumar, 2011). In their drawings, participants express a desire for more land and time to be even more productive gardeners. This tells us that their vision of placemaking and the resources by their current community garden network (the Garden Project) are not enough; additional community networks that share their vision might be needed. This is where garden leaders and other stakeholders can play a role to leverage network resources and community vision to advance immigrants and refugee gardeners placemaking. For example, a community garden leader told us in the focus group:

> We developed this play area, and then we have... slides. I just- I just got a swing given to me for the adults. So, we got a board, and we have everything there when the older adults are sitting in the shade, you'll find them visiting, or- or playing the game with each other.

> Just because we wanna make sure that everybody who comes to the garden feels welcomed, and they have- a focus area.

If community network resources are used to meet the vision of immigrants and refugee gardeners of the place that the community garden can be it facilitates their inclusion and belonging in the community garden.

Critical planning theorists have called for the greater acknowledgment of cultural differences and more substantive efforts to incorporate marginalized individuals and groups into the planning process for urban green spaces (Fincher & Iveson, 2008). Planners and city officials, often but not exclusively in big cities with large immigrant populations, have adopted policies that seek to incorporate newcomers and other marginalized urban residents (Strunk and Richarson, 2017). These efforts include policies for immigrant- and ethnic- specific service needs, service provision in multiple languages, and the incorporation of community-based organizations in the decision-making processes (Qadeer & Agrawal, 2011). Furthermore, Greater Lansing area planners for green spaces and urban agriculture should consider including immigrants and refugees in planning processes so their vision for city landscapes are represented. At the same time, urban agriculture networks and organizations like the Garden Project should have immigrants and refugees in their strategy planning and vision planning sessions to represent these stakeholders' desires and needs from these networks.

Dealing with obstacles

Urban gardens are important sites because they make visible the struggles over access to land, water, and other key resources in the city (Strunk and Richarson, 2017). Because they tend to be located on vacant lots in declining neighborhoods, urban gardens raise the question of who (and which kinds of cultural practices) belongs in the city and what resources will be made

available to facilitate this belonging (Staeheli, Mitchell, & Gibson, 2002). Research has empirically demonstrated that gardeners develop diverse ways to manage and enact their vision for their urban gardens (Krasny & Tidball, 2015).

In previous literature (Krasny & Tidball, 2015) about community gardening governance four components were identified as the commonly distributed resources in a community garden setting:

- The resource system (land, garden bed)
- The infrastructure (toolshed, greenhouse)
- The resource units (tools, soil, compost)
- Immaterial components (gardening tasks and social time)

This list of resources shows many of the resources already provided by the Garden Project community, hence helping immigrant and refugee gardeners overcome obstacles around access to these necessary resources. The Garden Project also provides common seeds and seedlings to their members and the Immigrant and Refugee Garden Liaison usually helps immigrants and refugees gardeners find seeds and plants that are more unavailable in the Garden Project plant distribution. The materiality and the resources of urban gardens shapes, to a certain extent, what can be grown in the garden, but refugee and immigrant gardeners also transform the landscape and ecology of garden plots through different agricultural practices and seeds to enact their vision (Strunk and Richarson, 2017). By having an Immigrant and Refugee Garden Liaison and extensive resources, the Garden Project is helping the immigrants refugee gardeners enact their vision. A participant describes, “It's because if it's resources they give you... a fair amount. Everybody gets what- it's- it needs to be given that day. If you're making a complaint, they- they- they... administrators take it seriously.” The support that the community gardeners received from

the leaders and the staff of the Garden Project ascertains their placemaking and gardening activities on the garden space. In addition, the Garden Project already provided seeds, seedlings, water access, and compost. It is important to highlight that immigrants and refugee gardeners said they feel heard and part of the community because their requests are heard and acted upon. A participant confirms "Yes, it does. In the sense that it is like a home. Like a second home. I feel so much like home because you get everything from what you are growing and I feel like part of the community." One of the ways this happens is when the garden leader, the Immigrant and Refugee Garden Liaison and other garden staff are able to interact and validate immigrant and refugee gardeners needs and wants to achieve their garden goals. All of these factors contributed to the refugee and immigrant gardeners placemaking and belonging to their community garden and the community garden network.

LIMITATIONS

Biocultural mapping has a tradition of centering indigenous, human rights and marginalized people at the center to understand cultural and biological assets in a palace. My use of biocultural mapping to understand inclusion and belonging of immigrants and refugees, is an innovative and different application of this methodology. Further attempts beyond a small case study will be needed to validate the use of this methodology to understand belonging and inclusion. With extensive ethnobotanical questionnaires and plant pile sorts, this was an effort intensive protocol. On average, it took between 15-25 minutes for plant pile sorts, and during the harvest season it was too taxing for immigrant and refugee gardeners whose priority is to harvest and prepare crops for storage and preservation.

CONCLUSION: Broader impacts for the alternative food systems movement

The most recent literature argues that refugees and immigrants can construct belonging through agricultural and social practices in the garden, this also suggests the possibility for a broader inclusive food system where immigrants and refugees can find belonging (Strunk & Richardson, 2017). Little research has focused on the factors that facilitate their inclusion and belonging in alternative food systems spaces, like urban agriculture and community gardens. This case study in Lansing, Michigan has attempted to highlight what factors facilitate the inclusion and belonging of immigrant and refugee farmers in a community garden network. The results, formed from interviews, focus groups and drawings with eleven immigrant and refugee gardeners and six garden leaders, bring to light that a physical place like a community garden can create the diverse incentives for diverse people to get involved in community gardening. Those incentives draw diverse people to the place and people and the adaptation of practices and knowledge about gardening open the door for social cohesion and belonging activities. As a result, these factors need to coexist and build upon each other to facilitate belonging and inclusion. As we continue to address the gaps for understanding the motivations for immigrants and refugee gardeners to engage in community gardeners, I hope their white local counterparts, gardens leaders, community garden network staff and others in the food systems practice and reinforce these factors to facilitate an inclusive and welcoming community garden. Focusing on the ways and places where we can engage immigrants and refugees helps create a more inclusive food system where immigrants and refugees can find belonging (See Appendix H).

APPENDICES

APPENDIX A: Positionality Statement

I was disappointed that little scholarship in food studies, agricultural production, and environmental conservation existed looking at immigrants like me and overall many of the ethnic minorities of this country. For me, food is essential to understanding other social issues in our society, as a nation and planet: food security, sustainable agriculture, social inequalities, health disparities, racism, and even nationalism.

Throughout my undergraduate experiences as a research assistant and a community organizer, I saw well-minded organizations implement food systems solutions that ignore the literature on food justice and lack cultural competency. Food is still used to dehumanize people of color, refugees, and immigrants in food systems. Food pantries, soup kitchens, emergency food programs, the Supplemental Nutrition Assistance Program, they do not offer a systematic solution to the problems of hunger and food access based on economic and racial disparities. When I decided to pursue a master's degree, I knew I wanted to learn more about our food systems and how it is rooted in racialized inequalities. I knew I couldn't start looking at the whole system without first looking at one part of the system. It could have been farms, distribution centers, or farmers markets, but instead, it was community gardens. I plan to study the biodiversity of Lansing's community gardens where minorities, immigrants, and refugee's garden and how this relates to their foodways and identity in the food system. Institutions that "help" or "serve" people that look like me never want to stop existing. As an immigrant of color, I share some similar experiences in food systems with my research participants.

Nevertheless, our migration pattern and backgrounds are incredibly different. I have often been the only person of color that is an immigrant in a food systems organization where food and agricultural programs are discussed for implementation. I felt the othering, remarks and body language that made me feel like I didn't belong. That othering occurs: When people asked me where I am from? When people spend more time trying to figure out where my accent was from instead of listening to what I have to say; When white men mansplained agricultural concepts to me that I took entire classes on. I have many emotionally taxing and failed attempts to establish my presence and my credibility in my field, my food system, organizations. We live in a society with racial nationalism, that is how people determine your worth. I had to overcome distress on cultural dislocation while facing many insecurities as an English Second Language Speaker. At the same time, I have the privilege of pursuing higher education and having a vast family network for support in my new host country. Thus, I experienced and still do many socio-economic limitations and other prejudices and racial biased to fully engage with society; they are not the same ones of the refugee community.

Here I write a list of commitments I want to carry out as a researcher.

Dear Future Research Participants,

As a brown Afro-Dominican immigrant woman, my research participants will be refugees. I want to make sure I acknowledge my privileges while also reflecting on other power dynamics and differences between my research participants and me.

This is my promise to you:

I am not doing research about you or on you. I am doing research with you. I believe in the cooperative design and implementation of research protocols.

I am not doing this research to serve or save you. I believe in reciprocity as a researcher value that I will practice between me, your organizations and other refugees in our community setting. I will use my skills to create tools that you want and will utilize.

I do this research to advocate for refugee issues. To highly the system and dynamics that may have to disempower you and promote your agency.

I will not refer to you as part of a vulnerable population. Yes, you might have experienced trauma, but you still have agency, resilience, and power.

I will not homogenize your experiences. All refugee's experiences are different.

I do not represent you. I am a channel to elevate and share your voices.

I affirm your belonging to this new community, space.

I recognized our different migration paths. I will minimize or omit the soliciting of memories and experiences.

I will administer protocols with appropriate levels of engagement. You are not inferior or incompetent.

I recognized my privilege as an English Second Language speaker. Being monolingual, having limited English proficiency, being an emergent bilingual and or being an English Second Language speaker won't be a barrier for you to participate.

I acknowledge my literacy skills and graduate education. Your knowledge is not bound to your educational level, you still have embodied and lived knowledge to share.

APPENDIX B: Community Engaged Research Partnership Considerations

Dear Researcher,

Before engaging in community engaged research with a community food systems organization please consider the following steps. This guide was developed in partnership with my community partner, The Greater Lansing Food Bank Garden Project, while conducting a community engaged research with immigrants and refugee gardeners for a master thesis. Together, we identified the following steps that lead to establishing a successful collaboration between our research project and them as a community partner. As a fellow researcher, I hope you follow and positively expand these recommended actions.

First
Describe your positionality and motivations for doing community engaged research with a community food systems organization. Explore the privileges and power dynamics you bring to the research as well as the values your research will uphold and the problem in our food systems you hope your research will address. Example of my positionality statement.

Secondly
Don't go "shopping" for a community partner. Ask your connections and mentors to be the ones that introduce to potential organizations that are willing and interested in community engaged research. Wait for the community food systems organizations to be the one that comes to you asking to do community engaged research.

Establishing the Partnership

1. Mutually decide on the level of engagement between the community food systems organization and you. See the Spectrum of Public Participation (International Association for Public Participation, 2007). I will recommend a collaboration, as defined as they collaborate in decision making of project design, execution, and deliverables.
2. Ask the community food systems organization team about their current needs/wants. What questions would they like answers to? What barriers exist for them to carry out this research or project?
3. Ask the community partner: What products can your research provide to help them answer these questions or address their needs?
4. Identify early on what outcomes/deliverables your research can deliver and determine with your community partner its appropriateness.
5. Set clear steps and timelines that communicate and explain the expectations between you and the GLFB GP team. We recommend you used the abacus of community engagement (Doberneck, 2013) to identify expectations.

6. Identify your point of contact and communication desires. The community food systems organization that becomes your community partner might want one or several people to be the point of contact or updates about the project status.

Navigating the Partnership

1. Communicate often. Have at least a monthly scheduled check-in, and clear communication about project status, next steps, and challenges the project is facing with your community partner.
2. Show Up! If applicable, volunteer at your community partner events. For example, with my community partner I volunteered at their Garden Resource Center, at their Demonstration Garden, at the community gardens service days and Greater Lansing Food Banks events. In addition, I attended and volunteered at external events where my community partner was attending and other community food systems organizations events and activities.
3. Make your Face Known. Do visits before starting recruiting/data collection. Make sure to ask your community partner to introduce to the staff and volunteers you are going to be interacting more often. Let them know about your research and what you are doing before starting, outside recruitment. Create a flyer communicating your intentions or send an email/newsletter announcement. You are a guest in their space.

Evaluating the Partnership

1. Partnerships evolve over time as trust is built, which means that partnership agreements and norms need to be constantly under review (Banks et al, 2009).
2. Seek feedback often. You want to be aware of expectations, capacity or changes that might better inform how you carry out this partnership.
3. Revise deliverables and provide timely and realistic outcomes.

Communicating with Academic and Public Audiences

1. Establishing authorship agreement early on for academic papers and extending invitations for co-authorship and editorial review between the community partners.
2. Discussing how researchers should talk about the research project and the community partners for academic and public audiences such a podcast, newspaper interviews, articles, etc.
3. Sharing with your community partner all academic and public publications and public scholarship.

APPENDIX C: Interview Questions

Introduction

Thank you for agreeing to talk with me as I learn about the experiences and practices of refugee and immigrant gardeners in the Greater Lansing area. My plan is to spend time in the garden every week, and each week I will plan to explore a different question with you. My goal is to keep our conversations short and informal so you can continue gardening. If you have any questions during our conversations, please feel free to ask. o you have any questions now?

Okay, let's get started.

Date	Question	Objective
June	I'm interested in your general gardening practices. What are your gardening practices? • Chemical controls (herbicides, pesticides) • Non Chemical controls (hoeing, rototilling, hand weeding) • Do you use compost? • Do you use mulch? • Soil amendments? • How has the way you garden change since you first started gardening in Lansing? • How has the way you garden change since you first started gardening in this community garden?	Gardening Practices R1

Table 3. Interview Questions

Table 3. Interview Questions (cont'd)

July	• How did you decide what to grow in the garden this year? • How do you decide how much food to grow? • Where do you learn about new gardening techniques? • How did you go about finding the seeds/plants to grow? • If you have gardening questions who do you ask for help? • How do you spend share/spend time with at the community garden? Do you create friendships here? What do you talk about? • What plants do you grow that you share with other people? Or that you grow for other people? • What plants/ produce do other people share with you?	Motivations, Knowledge and Produce Transfer R1 R2 R3

Table 3. Interview Questions (cont'd)

August	• Why did you join the garden? • Why is being part of the garden important for you? • Do you feel included in your garden? What does make you feel that? Do gardening here makes you feel more connected to Lansing? • What are the assets/benefits that you bring to your community garden? • What are the benefits that gardening brings to you, your family, your community? • Do you think the plants that you grow provide any benefits for this community garden?	Motivations, Biodiversity Benefits R1 R2

APPENDIX D: Pile Sort Protocol

Hello, my name is Vanessa. I am a research assistant, working with the Greater Lansing Foodbank Garden Project. Thank you for taking time to speak with me. We are interested in learning what are the plants that the gardeners are growing and more about them, so we are conducting this activity to learn more about your plants and your gardening knowledge.
I will be presenting you with a deck of picture cards of plants to be known that are grown in the community gardens in Lansing. I want you to sort the deck of cards base on the questions I asked you. I will be taking pictures of the piles you create for my records.
Are you ready to start?

- We have been conducting an inventory of plants growing in the gardens. This is a map of your plot. (Showing inventory map and list of the participants plot). Did we miss any plants?
- Here it's a deck of cards of the plants that we found in your plot and around the garden. What I'd like you to do is create categories with these cards, however that makes sense to you. What plants go together for you? There is no right answer! I'm only interested in what the plants mean to you.
    - Tell me about the groups that you create it.
    - What plants that you grow are missing from this deck?
- What plants do you eat?
    - What plants do you use on a daily basis?
    - What plants that you on a daily basis eat are missing from this deck?
    - What plants do you eat for special occasions?
    - What kind of special occasions?
    - Are there other important plants in your diet you don't see here?
- What vegetables do you eat that you don't grow yourself?
    - Why don't you grow _____?
- What plants do you grow for a ceremonial or ritual?
    - What plants for what rituals?
    - How you use them?
    - What plants that you use for rituals are missing from this deck?
- What plants do you grow for a medicinal use?
    - What plants that you use as medicine are missing from this deck?
    - Can you tell me for what maladies you use each plant?
- What plants do you grow that you share with other people? Or that you grow for other people?
    - *For each person with whom the informant shares food/plants:*
    - How do you know _____?
    - What do you give _____?
    - How did you decide to start sharing food/plants with _____?
    - What are the benefits of giving away food/plants?
    - Are there any drawbacks?
    - How does it make you feel?

- What plants/ produce do other people share with you?
    - What plants that other people give you are missing from this deck?
    - Do you trade produce/plants for services?
    - How do you know _____?
    - What do they give _____?
    - What do you do with it?

We've covered all the gardening and plants questions I have for you today.

APPENDIX E: Drawing Protocol

Hello Gardener,
Thanks for being involved with this research project this summer. This will be our last activity together and it is a drawing exercise to reflect on this year's growing season and garden experience.
Here is some drawing paper and drawing materials. Please take them home and draw something according with the prompt written. If you have any questions about the activity feel free to call me at 401-545-2581 or email me at garci430@msu.edu. When we will see each other next? (schedules drawing debrief and next engagement). Great, see you soon.
Close your eyes and imagine your most perfect garden. The sky is the limit! You have as much space as you want. You have access to as many varieties and whatever quantity of seeds and plants you desire. Garden and financial resources are not an issue.

- What does your garden plot look like?
    - How big is it?
    - What shape is it?
    - How will you arrange the plants?
- What will you grow?
    - Kinds of plants
    - Varieties of plants
    - Food, ceremony, medicine, aesthetics
    - For yourself? For sharing?
- How will you grow it?
    - Methods, inputs, tools, resources
- Who will be in the garden with you, or in the plots nearby?

Please draw your most perfect garden!
Do not worry about your garden skills. You can use labels or whatever you need to make your ideas clear. Just express yourself the best you can.

For Drawing Debrief Session:
Thanks for a beautiful drawing! I'd love to talk with you about it.
I brought a pen in case you decide you want to make any changes during our conversation.

- Walk me through your drawing.
    - What did you draw this?
    - How did you make these choices?
    - Which decisions were challenging to make?
    - Which decisions were really easy to make?
    - Is there anything you want to add?
- What prevents you from growing this ideal garden?

- Did making this drawing help you consider changes you might make in your plot next year? Or were you already planning to make some changes based on your experience this last year?

Let's move away from the drawing a bit and talk about your garden more generally.

- What was your favorite thing about gardening this year?
- What did you learn? What went well this year?
- Are you planning on gardening next year?
    - What do you hope for next year?
        - Different weather
        - Access to different plants/seeds?
        - More time?
        - A more productive garden?
        - More food?
        - More sharing?
- Is there anything else you would you change about your plot if you could?
- Is there anything you wish you could change about your garden?
- Is there anything you would change about the Garden Network?
    - Are there resources you wish you had access to?
    - Workshops or information you wish you had access to?
    - Different services?
    - More cross-network interactions?
- Anything else you want to talk about regarding your drawing, your experience in the community gardening network, or the Lansing community?

  Thank you so much for your time and thoughtful engagement this summer!

APPENDIX F: Focus Group Protocol

Eligibility: 5-10 Garden Leaders and other non-refugee gardeners

I. Guidelines (10 minutes)

1. Hello, my name is _____. I am a focus group facilitator, working with the Greater Lansing Foodbank Garden Project. Thank you for taking time to speak with me. Before we begin, I'd like to explain a few things.
2. We are asking you to participate in a research study. Today, we are holding a focus group to hear your feedback about cross cultural communication and integration in the gardens. This data will help the Garden Project and researchers at MSU better understand what the challenges are of managing multicultural gardening spaces.
3. I want everyone to know there are no wrong answers. We asked you to be here to give us your opinions. Your opinions may be different than another participant's, and that is ok. You do not have to agree with each other.
4. You may have noticed the microphones in the room. We are audiotaping the discussion. I want to give you my full attention and not have to take a lot of notes. Also, because we are taping, it is important that you try to speak one at a time. I may occasionally interrupt the discussion when two or more people are talking at once in order to be sure everyone gets a chance to talk and that responses are accurately recorded.
5. Your identity and anything you personally say here will remain confidential. By confidential I mean your names, addresses, and phone numbers will not be given to anyone. The tapes of this discussion are kept in locked file cabinets that are only accessible by research staff. (More on the Consent Form).
6. Please turn off your cell phones. The group will last only 90 minutes. Should you need to go to the restroom during the discussion, please feel free to leave, but we'd appreciate it if you would go one at a time.
7. Feel free to say what is on your mind. If you have something negative to say, it is all right. Remember, there are no right or wrong answers. We are here to learn from you.

II. Introductions (10 minutes)

Now, first let's spend a little time getting to know one another. Let's go around the table and introduce ourselves. Please tell us your: first name, where do you garden, your position in the garden management team and since we will be talking about food, what your favorite fruit or vegetable to grow is.

III. Questions (50 minutes)

Great. We are going to begin our discussion by learning a bit more about your gardens and your involvement on then.

- How many gardeners participate at your gardens?
- How long have your gardens been around?
- How long have you been at your gardens?
- Why do you choose to garden?
- What brought you to community gardening in the first place? Is the still the reason you continue to garden now?

Now, I want to discuss more about what you do and participate in the gardens.

- What do you do to make your garden more welcoming?
- How do you encourage people to stay involved in the garden?
- What are the challenges of being a garden leader?
- How do you communicate garden rules/expectations with others?
    - What successes have you had to communicate cross culturally?
    - What are the challenges that you experience to communicate cross culturally?
- How do you show appreciation for everyone's role in the community garden?
- How do you appreciated everyone plots and produce being grown?
    - What are the benefits of having so much plant/produce diversity in the gardens brought upon by refugee gardeners?
    - How do you describe unknown vegetables/fruits in the garden?
    - Do you ever receive unknown plants/produce in the garden?
        - What do you with them?
        - Tell me more about the exchange?
        - Who gives them to you?
- How do you build cross cultural relationships in the garden?
    - How does that work?
    - How does that make you feel?
- If you have all resources available to you, how will you manage the garden differently?

IV. Close (5 minutes)

Thank you from sharing your experiences. Is there anything that we missed? In other words, is there something else that you would like us to know about your experience with The Garden Project?

We've covered all that I wanted to discuss with you today. Thanks so much for your time. Here is my contact information if you wish to stay in touch and see the products that came out of the work that we did together. Thank you again!

APPENDIX H: Best Practices in the Community Garden for Immigrants and Refugee Gardeners

These are some recommendations provided by Immigrants and Refugees Gardeners (IRG) and experienced garden leaders in cross cultural spaces to facilitate an inclusive and welcoming community garden. These can be followed by fellow gardeners, garden leaders and/or garden network staff.

Be Social

Greet everyone when they arrived at the garden

Use diverse communications strategies (welcoming package, email, text, pictures, infographics)

Find ambassadors to communicate and remind people of expectations.

Focus on building relationships, not just being a leader or boss.

Be flexible about deadlines and expectations.

Promote a “Let's do this, together” approach to get communal tasks done.

Share produce with fellow gardeners.

Thank everybody for their participation and membership.

Expand your Knowledge

Appreciate others gardens and growing skills.

Ask questions about unknown plants and different growing techniques.

Host a potluck! Ask about use, ways to cook and eat an unknown plant.

Host a seed swag! Ask for the seeds and ask to be mentored on growing a new plant.

Find Common Motivation

Find at least one common motivation of why a fellow IRG is gardening.

Congratulate people for how much time they spend at the garden.

Congratulate everyone on their harvest.

Create Place

Developed spaces that people want (a play area, picnic area, shaded area).

Act upon it. Facilitate the resources and address the needs/wants of IRG.

Have “office hours” or a designated spot where people can find you to talk.

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