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## **Food Justice and Urban Agriculture: Using City Spaces to Foster Equity**

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Food Justice and Urban Agriculture: Using City Spaces to Foster Equity

by

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A capstone submitted in partial fulfillment of the degree requirements of Master of Arts  
in Education: Environmental Studies and Natural Sciences.

Hamline University

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The lifelong education is fulfilling beyond measure.

–Sean Sherman, *The Sioux Chef*

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## CHAPTER ONE

### Introduction

#### Overview

The purpose of this project is to examine the role that local urban agriculture and farming plays in contributing to food justice and fostering resident engagement and education in city communities, and to analyze the driving forces behind urban agricultural projects. In many city neighborhoods, community gardens create space for individuals to tend small plots of land to grow whatever they choose. However, within the city, there are larger-scale operations that utilize urban spaces in creative and innovative ways to grow and distribute food throughout the community. These operations employ a variety of technical and philosophical approaches to address food insecurity and environmental issues in the communities they serve. While community gardens offer opportunities for residents to get together and enjoy gardening as a hobby, urban farms are organizations that operate at a more industrial scale, working to optimize vacant spaces within the city to produce food on a larger scale and with a further reach. London, et al. (2020) purported that urban agriculture projects are motivated by one of three primary drivers of community development: social justice, community health, or market growth and development. This research seeks to identify the primary drivers of two urban agriculture projects, while seeking to identify other driving forces that are not yet identified. Also, it explores how these projects address and attempt to mitigate social

inequities surrounding access to food, as well as how they foster education and engagement among the communities they serve.

As density within our cities increases and interest grows in obtaining food from local sources, individuals and groups have found ways to utilize small spaces to produce large amounts of food. Combatting urban “food deserts”, or areas of the city where it is difficult for residents to obtain fresh produce, is a major concern of many neighborhood and residents’ associations (Hu et al., 2013). My goal is to learn about urban farming in and around the Twin Cities metro area and to understand the impact that urban agriculture is currently having on our city communities. Through my research, I am seeking to identify the driving forces behind two urban agriculture (UA) projects based in a medium-sized city in the upper midwest. Specifically, I am viewing these drivers through a lens proposed by London et al. (2020) describing UA projects as primarily market-driven, health-driven, or social justice-driven. Additionally, I assess and analyze the data to find other drivers that are not yet identified in the literature. As I explore the drivers behind two projects, I also seek to understand how urban agriculture has the potential to address the problem of inequality and injustice in access to quality foods. Additionally, I am sharing what I have learned about how urban agriculture can promote community development through engagement and education.

My intention is to convey the participants’ visions of a future in which city spaces are used to produce healthy food in a sustainable manner and promote engagement and environmental education among residents of the city. Through this research, I

highlight how the driving forces behind two projects impact the communities being served, promote social justice, and foster engagement and access to informal learning.

### **Educational Values**

I grew up in what may be called the “third-tier” suburbs, thirty miles outside of medium-sized city, beyond the standard cookie-cutter developments that surround the city. My home was in a small neighborhood surrounded by woods and fields. While it could not be described as “rural,” green space was never lacking. Almost every home had a large yard and ample space for gardens. A small field used to grow wheat and barley separated us from the nearest gas station, and we often played softball in empty lots or climbed enormous trees with sprawling branches that not so long before had occupied pastures. For most families, gardening was considered a hobby, and even a way for neighbors to outdo each other with ornamentals and pumpkin patches. It did not occur to me that such space is a privilege and a commodity. When I grew up and moved to the city, I learned that space is a limited commodity.

Living in the city also taught me about the necessity of community engagement and the interconnectedness of environmental engagement and learning. In contrast to the somewhat isolated and individualistic experience of growing up in a spacious suburban area, the density of city living necessitates adapting to shared spaces and requires interdependency among residents. While the convenience of proximate resources and access to entertainment are benefits to urban life, these same aspects can create competition for resources and space. Despite the obvious challenges created by dense

urban living, these spaces are ripe with opportunities for learning about and from the people we share spaces with. Through my urban living journey, I have come to believe that community learning through shared challenges and the development of solutions are essential to our survival and our ability to thrive and grow in city spaces.

In my own life, I have been engaged in formal education for more than twenty years. My studies have ranged from theater and dance to veterinary technology, to physical and natural sciences, and finally to environmental education. Each of my areas of study has opened me up to new topics and ideas that I would not have uncovered on my own. Studying theater and dance helped me to see how physical activity can foster engagement, and even increase spatial awareness. Years later, I found that I was using my knowledge of movement to understand math and physics. My love for animals led me to become a veterinary technician, which gave me the confidence working in a lab that I needed to pursue more difficult science classes in college, something I would not have done prior to that experience. I was able to combine these new skills to pursue a Bachelor of Science degree. Experiencing how different subjects relate to one another and come together to create holistic knowledge has led me to believe that education is not limited to formal settings, but occurs throughout our lives through individual experiences and interaction and engagement in our communities. Although I have spent much time in the classroom, my educational values have shifted to believe that learning takes place every day, in unexpected settings. Experiential learning creates lasting memories, and helps us to make connections between theory and application.

During my studies, I worked as a peer tutor specializing in math and science, which unlocked my passion for teaching, and my understanding of teaching as a part of learning. I also became certified as a Minnesota Master Naturalist through the University of Minnesota Extension Service. Working as a naturalist community educator helped me develop a new way of thinking about teaching and learning as two sides of the same coin. Through this program, I have had excellent opportunities to work as a volunteer naturalist and engage with the public in informal and formal education settings. I have seen firsthand how nature captures the attention and curiosity of people, and how learning can take place anywhere. Education flows in both directions, so that teachers become learners and learners become teachers. When I decided to pursue a graduate degree in environmental education, the first thing I did was return to my beloved community college and shore up an associate degree in chemistry. I returned with fresh eyes and insights into the interrelatedness of a community and education as both formal and informal practices that not only happen concurrently, and that both types of learning are essential to the success of the other.

Throughout my life, I have repeatedly returned to the idea of lifelong learning, particularly learning through non-formal means, such as experiential and service learning. As an AmeriCorps member, I worked as a volunteer facilitator at Twin Cities Habitat for Humanity. There, I learned basic construction skills, and I used what I learned to guide and supervise volunteers as we built houses from the ground up. Again, I experienced a passion and skill for teaching, and further solidified my understanding that learning can occur in any environment. I also made the connection between learning, confidence, and

tool use. Putting tools into the hands of volunteers empowered them in ways that explanations alone could not. I recall one particular incident, in which I was brandishing a power drill, and a woman exclaimed, “Oh! My husband has that drill...he won’t let me touch it.” I knew immediately that my job was to help this woman gain confidence using the drill. I formed an expanded respect for and understanding of the process of learning through action and service. My emphasis on getting tools in hands extends to scientific and educational equipment. I firmly believe that education and community empowerment can be developed by building confidence through real-life experiences.

My winding educational journey has taken me down many paths, and my conclusion is that learning does not stop. Nor does learning exist only in designated places and times. Learning occurs everywhere, and the key is engagement. To me, there is no endpoint or ultimate goal. All education is inherently valuable. It is common to hear people say things like, “When am I going to use algebra in real life?” or, “I have never once needed to use chemistry in my adult life.” Statements like these circumvent what I believe is the inherent purpose of education. I firmly believe that education begets more of itself and makes us better citizens and humans.

There is one final thing I would like to share that I have gleaned from a life of learning, and that is that learning, albeit sometimes fun, is uncomfortable. It is uncomfortable to try to use a tool for the first time. It is uncomfortable to try to wrap our brains around a new concept in math. Learning history can be uncomfortable. A late mentor of mine, John Heinrichs, once described this to me as “the learning edge.” Staring down the barrel of new information on understanding can feel like standing on the edge

of a precipice. It is disconcerting, and at times, even scary. However, if we always stay in our comfort zone, and never venture to peak over the edge, then we are not learning.

Learning through service and experience helps us use the discomfort of unfamiliarity in ways that produce tangible and meaningful results. In this research, I am investigating ways that learning and education can happen far outside of formal classroom settings, into community-centered environments, where learning through service, experience, and sensory awareness can help us to better understand and steward our natural and social ecosystems.

### **Professional and Practical Rationale**

At first glance, the inner parts of Minneapolis appear to be a concrete jungle, with buildings jammed together and stacked high. A bit further outside of the downtown area, single-family homes may be surrounded by some green space, but city lot lines mean that most houses have postage stamp-sized yards. However, it did not take long for me to start to find pockets of vibrancy among the concrete and asphalt.

The first signs of culture I started to find were pieces of art crammed into the tiniest of spaces. From colorful murals on the sides of buildings to renegade graffiti in alleys, to sculptures made of trash and found objects outside of collectivist punk houses, the city is alive with art. It became apparent to me that humans are adaptable creatures, and that it is in our nature to create beauty and life in the spaces we occupy, no matter how dense. It was not long before I also began to notice that groups of people were creating gardens within this density. I saw empty lots filled with raised beds housing tomato and pepper plants. Along the trenched railroad lines, DOT land was being used to

grow seemingly vast amounts of vegetables. People were growing food in any space they could utilize, including gardens on patios decks. I was coming into the understanding that when space is scarce, there will always be people using creativity and ingenuity to use small spaces efficiently to produce food.

Another concern in urban areas is a lack of access to fresh produce. These areas are often referred to as “food deserts” (Hu et al., 2013). The term “deserts” can be misleading, because food is available throughout the city at small bodegas and corner stores. The pressing concern is access to fresh, nutritious and affordable food. Corner stores largely focus their profit on tobacco sales, and because of their small scale, foods are often overpriced to compensate for the lack of purchasing power each store has. These stores also sell mainly processed and durable foods, such as canned goods, frozen meals, and junk food snacks (Clendenning et al., 2016). While there is not a true lack of access to food in these deserts, there is very limited availability of fresh produce or other nutritious foods. It takes considerable effort for a person who does not own a vehicle to use public transportation to travel to and from larger grocery stores where higher quality foods are available. The problem is compounded when small children are involved.

This became especially apparent when the pandemic hit, and individuals had to weigh the risks of using public transportation to travel to central locations that may be crowded. The unrest in Minneapolis in the spring of 2020 resulted in many grocery stores being temporarily shuttered due to looting. These events showed us how fragile our food systems really are, and how susceptible they are to breaking down due to unforeseen events.

Urban farms have the potential to localize and stabilize the distribution of high-quality produce in urban areas, creating more opportunities for residents and families to improve health and nutrition, as well as simply having higher quality food experiences (Napawan, 2015). These farms may also play a role in community education, both environmental and nutritional. When we can see and even participate in growing our own foods, we become more in tune with the ecological systems and processes that make food real. Growing our food locally in our communities can help reduce reliance on centralized chain grocery stores, thus bringing food stability and empowerment to residents. As an added bonus, local agriculture reduces the fossil fuel consumption that happens as a result of distributing food across vast areas via air, rail, and road.

By undertaking this research, I hope to unify and exemplify my personal values regarding education. The most fundamental component of my relationship with learning is that education is a continual, life-long process. Learning is not and cannot be restricted to certain spaces, such as classrooms or laboratories, but takes place in various settings throughout our lives. It need not occur in a formal setting, although I believe that strong formal foundational learning provides us with the tools necessary to become active learners and teachers, and, ultimately, the masters of our own learning journey. Education should not be pigeon-holed, nor should we be restricted to following certain “tracks” of learning, as is often encouraged by institutions. I do not believe that creativity interferes with our ability to think logically, nor do I believe that concrete understandings of science and math preclude engagement in the arts.

## **Summary**

The goal of this research is to learn about urban farming in the Twin Cities metro area, and to share with my readers how these organizations operate to build community health, education, and engagement. I identify the driving forces behind two projects, using the model put forth by London, et al, (2020) and try to expand on this model to include other drivers that might not be recognized yet. Using case studies, I describe how these farms are funded, organized, and operated. I explain the goals of each organization I highlight as they relate to serving and augmenting the surrounding communities. Through interviews and on-site observation, I hope to take my readers on a journey to understand the experiences of the people who benefit from and operate these farms, and describe the challenges and triumphs that come from working in this emergent and exciting field.

I have developed several lines of inquiry that I will be investigating in my research. First, I am seeking to identify the driving forces behind urban agricultural endeavors. Second, I am exploring how these projects actually impact the communities they intend to serve. Finally, I will be identifying some of the ways that these organizations harness this community engagement to promote environmental, market, and food education. Each question addresses the role that urban farms play in their local communities, and the processes of establishment from conception to inception.

The first part of my literature review is an overview of research about the connections between food and environmental education. I briefly discuss the history of UA, and how the emerging wave of interest is fostering a connection between environmental education and an interest in food justice. While the study of agriculture has long been a part of education in rural farming communities, we see a current trend in the interest of growing

food in cities as part of school curricula. Some scholars are urging educators to look beyond food as merely a part of nutrition education, but also as an important part of other subjects, such as ecology, social studies, and economics. Food consumption is a fundamental part of human existence, and for many people it represents connections with culture, place, and identity. Food studies have great potential to ground environmental studies and connect learners to their surroundings in both formal and informal educational settings.

I also examine food justice and nutritional access in urban areas, and the historical context of nutritional inequality in urban societies. It is essential that we develop a definition and understanding of what is meant by the term *food justice* and how it is used in the literature. This includes descriptions of the consequences of food inequality, and the hopes for fostering equity and access. I will share some examples of current attempts to remediate existing inequalities in access to quality fresh foods.

The final part of my literature review focuses on current theories that describe motivations behind UA projects and organizations, such as local profit, community health, and social justice. Each UA organization employs a unique perspective on their role in the community, but their goals and hopes for the communities they represent may overlap. I also highlight literature that focuses on how urban agriculture projects can have impacts beyond the realm of food, such as community organizing and civic engagement. Finally, I examine some of the current approaches used by urban farmers, and some of the solutions they employ to adapt to the challenges unique to city environments.

The remaining three chapters of this document will cover the methods I used to gather and analyze data, the results of my research, and overall conclusions about the results I obtained, their potential implications, and my thoughts for expanding on existing research as well as what I have learned.

## CHAPTER TWO

### Review of Literature

#### Introduction

Understanding the role of UA in the struggle to obtain food justice requires an examination of the juxtaposition of education, civic engagement, and the challenges of growing food in and around cities. My research, including the following review of existing literature, seeks to identify driving forces behind UA projects, to describe the impacts these projects have on the communities they serve, and understand how community engagement can foster learning related to our food systems, environmental and food justice, and food sovereignty. In this review of the literature, I begin with an exploration of theories of food education within the context of environmental education. Food studies have traditionally been viewed in the context of nutrition and health education. However, recent trends in education are moving towards interdisciplinary studies that focus on human's connections to the earth and our environment. Food is inherently part of our cultural and individual identities, and efforts should be made to avoid instructing learners about the "correct" way to eat, instead focusing on cultural and socio-economic factors that contribute to our dietary choices and options. Opportunities for connecting food to environmental education abound in formal classroom settings, as well as informally amidst the community. Food education and understanding the cultural context of dietary choices play a significant role in understanding how UA contributes to bringing about food justice.

In the second part of this review, I examine definitions of food justice and how it can be actualized in cities. This includes a brief look at the history and development of modern agribusiness, and the current state of our food production and distribution systems. I look critically at some common misperceptions about consumer choice and individual responsibility. I also write about the concept of food sovereignty, which goes beyond justice and equity to include community autonomy in food production and distribution.

Finally, I discuss the current state of urban agriculture, including the impetus of the current trend, theories behind modes of UA, and the barriers and challenges of urban farming. This review of current literature will lay the groundwork for understanding how urban agriculture can contribute to food justice and security in our cities.

### **Environmental Education and Food Education**

Community and urban gardening have existed in cities since the end of the 19<sup>th</sup> century, with popular resurgences during the world wars and again the environmental movement of the 1970's (Poulsen et al., 2014). In the last twenty years, we have seen a third wave of urban agriculture, largely in response to urban decay and food deserts, as well as a perceived failure of market-driven housing development and the exclusion of disenfranchised communities from urban development through gentrification (Cumbers et al., 2018; Poulsen et al., 2014). In this section, I examine how emerging forms of urban agriculture contribute to actualizing food justice and sovereignty in and around cities. I explore the literature on the relationships between food, agriculture, and environmental education, as well as the current popular movement toward urban gardening and

agriculture in education and its driving forces. Themes examined include environmental improvement and education, urban access to high-quality fresh foods, nutritional education, cultural perceptions of dietary choices, and community health and engagement.

Urban agriculture today takes on a variety of forms, including school gardens, urban farms, hydroponics, backyard chickens, and, by far the most common, community gardens (Poulsen et al., 2014). Community gardens serve multiple roles in the communities they serve: increasing availability of fresh produce, city greening and beautification, ecosystem restoration, improvements in community nutrition and health, environmental education, and increasing community cohesiveness (Jackson, 2017; White et al., 2018). There is some criticism that urban farms and gardens may work counter to these goals, by augmenting outside perception of neighborhoods and laying the groundwork for inequitable development that leads to gentrification (Cumbers et al., 2018). In our current rapidly changing urban environments, UA and community farms and gardens will continue to evolve alongside our cities. Increased access to technology, as well as education and interest mean that urban agriculture will persist as a way of improving community health, cohesiveness, and engagement.

### ***Food Studies Beyond Nutrition Education***

Utilizing food studies as a learning tool has great potential to expand and ground the field of environmental education in both formal classroom and informal community settings. UA relates largely to informal educational settings, and has the potential to help community members engage with fostering food justice. Because food consumption is a

human need, it is something with which every individual has a lifelong relationship.

Eating is a part of our everyday lives and is essential to our individual survival. Food is a touchstone that intersects culture, health, and our environment. Additionally, eating is a sensory-enhancing, grounding, and, ideally, rejoicing experience that fosters community and connectedness.

Historically, discussions of food in education have largely centered around nutrition and health, with a much smaller focus on food education as a part of environmental literacy (Moscoe & Hanes, 2019). This disproportionate focus on food as nutrition and health education has limited the amount of curricular time and energy that is devoted to connecting food with biology, biodiversity, and ecology (Eldsen-Clifton & Futter-Puati, 2015). Graham et al. (2005) agreed that school gardens are excellent tools for teaching about nutrition, but that the usefulness of gardening education can extend beyond health and nutrition to include environmental education and social awareness. Wallace (2016) described an academic trend or even renaissance they refer to as the “material turn” (p. 147). This “material turn” encompasses changes across academic disciplines, in which educators are turning their focus from the theoretical to the physical and social, choosing to emphasize humans’ connections to and effects on the physical world (Wallace, 2016). At the core of this thinking is that nothing exists in a vacuum, an idea that dovetails with connecting food to environmental education and social justice.

### ***Food Studies and Identity***

Food consumption is inherently linked to our personal and cultural identity (Stapleton, 2015). Our relationships with food also have links to sustainability, politics,

and social justice through the concept of the commons, or community resources that are accessible to all (Cadieux, 2016). Stapleton (2015, p. 13) cautioned educators about the consequences of relying too heavily on food pedagogies that focus mainly on individual choices or moralize food consumption. This limited view of food pedagogy can result in learners and community members feeling that their personal choices or cultural identities are under attack and that the burden of sustainability lies only on their shoulders as individual consumers. Instead, Stapleton argued that food and eating should be situated in a larger context of society, food systems and industry (p. 16). In an exploration of moral ecologies, Cadieux (2016) described how popular interest in the juxtaposition between food, culture and society has increased and fomented through social media and the internet. Food blogs and discussions are burgeoning in public digital spaces, making room for uncomfortable discussions such as the role of colonialism in our current food culture (Cadieux, 2016, p. 140). Cadieux proposed that this accessibility to discourse surrounding food and food culture can temper feelings of disengagement and apathy regarding food and sustainability.

### ***Food Studies Inside and Outside of the Classroom***

There is a thriving movement to integrate agricultural and sustainability knowledge into urban settings. Crosley (2014) argued that in order to address the needs of a changing and increasingly urbanized society, environmental education programs must increase their focus on the complexities of urban settings, including food justice. Crosley (2014) purported that too much emphasis has been placed on environmental education in wilderness settings, largely ignoring the realities of a global shift towards

urbanization and its consequences for sustainability. Crosley (2014) wrote: "...wilderness experiences can actually diminish the impact of an environmental education program by reinforcing the idea that nature is not a part of every learner's life experience" (p. 48). This demonstrates a simplified dichotomy of urban and wild, or humans and nature. These emerging ideas about food and environmental education are necessary to address a changing global demographic in which most of the world's population lives in or near cities (Opitz et al., 2016). Delia and Krasny (2017) argued that urban settings are ideal for developing youth assets and harnessing social capital using place-based learning. They believed that sustainability and stewardship education, such as community gardening in urban areas, can promote "resilience at the individual, community, and socio-ecological system levels." (p. 2340).

Views about the structure of science curriculum are often constrained to traditional lecture and lab formats, limiting the locations of learning to the classroom and the lab (Balschweid et al., 2014). The growing popularity of place-based education expands the idea of location to include the surrounding community and outdoor spaces. Place-based learning focuses on local and regional settings to promote learners' awareness of the natural environment as part of their everyday lives and develop an understanding of human impacts on the area (Flanagan et al., 2019). These connections can be integrated into classroom curriculum in schools and colleges but are also increasingly common in informal community outreach education (Swan et al., 2015). Food pedagogies can encompass teaching and learning in a variety of forms and locations, including formal and informal settings (Swan et al., 2015). Gardening and

agricultural education can offer learners and educators opportunities to go beyond classrooms and laboratories and into the field. Wallace (2016) emphasized the benefits of using hands-on experiences, such as manual labor, to help educators bridge the gap between academic learning and the natural world.

Food education has enormous potential to engage community members in learning about and protecting the environment through both informal and formal educational settings. Enhancing understanding of sustainability and stewardship in urban environments can help to harness the vast resources of social capital in cities. Youth leadership and development is one of the greatest assets of urban communities. Engagement and education of younger community members lay the groundwork for continuous growth and development of food sovereignty and sustainability in our increasingly urbanized society. I am using the lens proposed by Londen et al. (2020) to evaluate the motivations behind each participating organization in terms of drivers based on community profit and market development, community health improvement or social justice.

### **Food Justice**

Food insecurity is increasing as a concern in both rural and urban areas. In order to understand the role that urban agriculture can play in bringing food justice and equity to communities, it is necessary to examine the current structure of our food systems and barriers to access in cities. The following sections are intended to highlight the ways that UA endeavors are currently working to empower community members to work towards food justice and/or sovereignty.

### ***The Current State of Agriculture and Food Production***

Our food production systems are currently controlled by a near-monopoly of a handful of mega-corporations. Corporations control almost every aspect of food production and distribution, including agriculture, production, distribution, and marketing (Draus, Roddy, & McDuffie, 2014). The centralization has resulted in an abundance of processed foods that are low in nutritional value. Levkoe (2006) described the present state of food production with the statement, “Farm products are broken down and recombined into complex industrial foods different from anything that could be prepared in a kitchen. These foods are then patented and sold to us in packages by corporations” (p. 90). Consequently, much of the food available to us is pre-processed or prepared, as opposed to fresh ingredients. This is especially true in urban areas, where so-called food deserts, or areas where there is little to no access to fresh foods, have emerged (Clendenning, 2015, p. 166). There is increasing interest in urban agriculture as part of the solution to this inequality of access. In this section, I investigate the meaning of food justice and food sovereignty, and community engagement, education, and empowerment through urban farming.

### ***Defining Food Justice***

“Food justice” is a broad term that encompasses activism across the spectrum of food production and consumption (Levkoe, 2006, p. 89). While food justice is a global movement that is not limited to urban areas, I am focusing my review on food justice in cities, where access to quality nutrition varies wildly depending on location and socioeconomic status. Over half of the global population lives in urban areas, and urban

poverty is increasing (Cadieux & Slocum, 2015). The expansion of our cities has resulted in “spatial wealth concentrations” (Clendenning et al., 2016, p. 166) that lead to increases in rent and other living costs, and limited access to employment and social welfare, both of which directly contribute to poor health and food insecurity (Clendenning et al., 2016). While there is no true shortage of food, a lack of access to quality nutrition in urban areas is the result of the corporatization of food production and distribution (Clendenning et al., 2016). At the root of food justice movements is the idea of food insecurity, which for many, precludes all other concerns. The discourse on food insecurity is dominated by two perspectives: 1) there is not enough food to feed the global population, or 2) there is enormous inequality in access to nutritious foods.

Increasing production has been the central concern of the new Green Revolution since the 1960s, and it is easy to see why agribusiness and food conglomerates favor the idea of increasing production rather than overhauling established food distribution systems (Cadieux & Slocum, 2015). Corporate agriculture and food production systems have grown to the extent that 80% of grocery items purchased by customers are distributed by a handful of mega-companies (Lakhani, Uteuova, & Chang, 2021). These monopolies limit consumer choice and access, control pricing, and diminish the power of small farmers and agricultural workers (Clendenning et al., 2015, p. 167). As consumers, we try to make responsible purchasing decisions, but the reality is that the monopoly of agribusinesses means that we have very few options (Lakhani, Uteova, & Chang, 2021). The illusion of choice is given to us in the form of different brands, most of which are operating under the same handful of mega-corporations. Additionally, the vertical

expansion of agribusiness means that large corporations have control over production, distribution, and marketing, ultimately controlling prices (Lakhani, Uteova, & Chang, 2021). While food justice often focuses on themes of eating locally, food sovereignty seeks to create systemic change that goes far beyond the hyper-local (Cadieux & Slocum, 2015; Stapleton, 2015).

### ***Food Sovereignty and Community Autonomy***

As researchers trying to understand the needs of urban communities that are underserved by our current food systems, it is essential that we strive to give voice and promote autonomy in these communities. Long-term solutions to food injustice and inequity must be addressed through empowerment of communities, and thoughtful care must be taken to avoid the exploitation of participants in the name of academic research (Travaline & Hunold, 2010). Outside organizations, and even community-based projects, can fail in the long-term if self-sufficiency is not the primary focus of the work (Mello, 2018). Food justice and food sovereignty must be seen as more than reactive responses to poverty. Poverty itself is not the cause of food insecurity, and researchers and educators must work to avoid placing too much responsibility on the nutritional choices of individual consumers (Stapleton, 2015). While individual choices play a significant role in the overall health of the community, we cannot ignore the roles that corporate food systems play in the production and distribution of food, as well as in degradation of the environment (Levkoe, 2006).

It is apparent that food sovereignty, beyond reactive attempts to create short-term food justice, must be the goal of urban agriculture. Urban agriculture endeavors benefit

by engaging local leadership and promoting engagement of communities in the production and distribution of food (Clendenning et al., 2015). As food is an absolutely universal and fundamental need of all humans, it is not just access, but community control and autonomy of nutritional resources that are key to the long-term health and sustainability of urban neighborhoods (Clendenning et al., 2015). Food justice projects directly serve to bring practical and concrete necessities to urban residents, but can also be foundational to engagement and leadership in further social justice goals (Levkoe, 2006). As cities will continue to expand, greater portions of the population will live in urban areas. Urban agriculture can function as a way for city residents to wrest control of food production systems from agribusiness conglomerates, and placing that control in the hands of the community (London et al., 2020, p. 207). It is a daunting task to stand up to monopolies, and it can only be accomplished through long-term solutions that go beyond access, developing local means of food production and distribution. In the next section, I examine the current state of urban agricultural endeavors, and how they are addressing the long-term goals of food justice and food sovereignty in city communities.

### **Urban Agriculture**

As mentioned earlier, agriculture has been in cities since the Industrial Revolution, and at least three popular waves have led to its periodic resurgence (Poulsen et al., 2014). In recent decades, a third wave of popular UA, largely in response to inequitable urban development that marginalizes communities of color and low-income households (Cumbers et al., 2018; Paulsen et al., 2014). In today's cities, UA is apparent in individual residences, community gardens, and urban farms that operate at a larger

scale (Opitz et al., 2016). These operations provide myriad services to city neighborhoods and communities serve multiple roles: increasing nutritional access, promoting food and environmental education, and fostering agency and advocacy for food justice (Jackson, 2017; White et al., 2018).

In this section, I briefly explore the current popular movement and its driving forces. Themes I examine include urban access to land, community health, city greening and beautification, interest in environmental improvement, and motivations for the creation of urban agriculture projects. Each of these themes will help in understanding the role that UA can play in moving us towards food justice through community engagement.

### ***Beyond Food***

At first glance, the premise of urban agricultural projects is simply to grow food. However, the motivations and outcomes of these undertakings extend far beyond food, extending into the realms of community education, citizen engagement, and social justice (Tornaghi, 2017). Urban agriculture can be loosely defined as activities that encompass food production, cultivation, processing, and distribution of food in and around cities (Philips, 2013, p. 45). (Agriculture in areas peripheral to city centers is referred to as *peri-urban*). A current trend in popular food movements is bringing food production back from the periphery of cities into urban areas (Philips, 2013, p. 6). This trend may be to address rises in food prices, concerns about fossil fuel use in transporting food, as well as a general desire to expand publicly accessible urban green spaces (Philips, 2013). Philips (2013) succinctly described the ideals of urban agriculture: “An economically viable urban food system would result from an ecological and biological based city-planning

model that would focus on health,(human and city), community, support and connectivity, and ecosystems, (natural and manmade).” (p. 5).

Draus et al. (2015) delineated how urban agriculture can add value to a community in at least four basic ways: First, it can convert vacant lots and poorly-utilized spaces “from a deficit to an asset” (p. 2524). Secondly, UA increases access to fresh foods in urban food deserts, contributing directly to the health and well-being of local residents (Draus, 2014, p. 2524). Third, UA projects can be formulated to create employment opportunities that contribute to the local economy through the production of food commodities (p. 2524). Finally, Draus et al. (2015) proposed that urban agriculture has the potential to promote social cohesion and justice (p. 2524). Travaline and Hunold (2010) made a similar assertion about “ecological citizenship,” which embodies the traditional conservative value of citizenship as active participation in public affairs (p. 581).

In order for UA to achieve these ideals, the public must be included in local policy-making. Draus et al. (2014) argued that such projects should be based on a strategy of social inclusiveness, engaging current community members, as opposed to focusing on goals such as ousting undesirable community members, or preventing the encroachment of higher-income populations (p. 2529). While projects such as community gardens offer individual allotments or plots that benefit the individuals who manage them, Napawan (2015) suggested that communally operated urban farms are a better means of optimizing limited space and maximizing food production. This echoes Travaline and Hunold’s (2010) assertion that effective and sustainable agricultural

projects must be formed and actuated by residents and participants, exemplifying a “bottom-up” model, as opposed to the more common “top-down” approach used in agribusiness ( Napawan, 2015). This approach synergizes the capacity of the community members, instead of viewing participants as simply individual consumers.

### ***The Roots of the Current Urban Agriculture Wave***

London et al. (2020) employed the apt metaphor of “taproots” to describe three major motivations behind urban agricultural projects: Justice-rooted, health-rooted, and market-rooted (p. 205). While these categories are distinct, it is important to note that there is overlap, and the goals of each may work to support the others.

Justice-rooted projects seek to address and remediate the “*racial capitalism*” that is embedded in our food systems (p. 206). London et al. (2020) described “*racial capitalism*” as the acknowledgement that capitalism is historically and currently been based on racist ideals, and that racism has enabled capitalism’s rise in Europe and North America via chattel slavery and colonialism (p. 206). Justice-rooted urban agriculture seeks to change a system that continues to disadvantage farmers of color, as well as appropriating, exploiting, and polluting low-income city communities. This means fundamentally overhauling food production and consumption to address inequalities in our current food system (London et al., 2020, p. 207). The goal is to promote food sovereignty, bring agency and control over production to local residents. This goal has connections to both health and labor issues, which contribute to larger social justice goals. In a sense, justice-rooted urban agriculture seeks to decolonize our current food systems (London et al., 2020, p. 207).

According to London et al. (2020), health-rooted projects are on the goals of improving community health and well-being, through empowering people to have agency over their own diets. While these types of endeavors may not directly address structural racism and inequality, London et al. (2020) are fundamentally critical of the social and ecological degradation created by industrialized agriculture. A major criticism of this approach is that it tends to exemplify class privilege, and may be perceived as telling poor people what they should eat. As is common in less-radical approaches, individual behavior is emphasized over structural change (London et al., 2020).

Market-rooted UA projects function within the dominant capitalist system, but use it to attempt to drive local assets and development (London et al., 2020). London; et al.(2020), asserted that market-rooted projects affect the communities they serve in three major ways. They use market forces to attempt to build assets for marginalized and disadvantaged communities. This can contribute to labor exploitation for the sake of profit, detracting from local development and autonomy (London, et al., 2020, p. 208).

### ***Urban Agriculture in Practice***

Philips (2013) reminded us that food systems are complex and extensive cycles that include growing and production, harvesting and processing, nutrient cycling, marketing and distribution, education and policy, and, of course, eating (p. 46). Ideas and activities associated with urban agriculture may include composting, cooking and eating education, environmental restoration, and distribution among marginalized residents, such as seniors (Cohen & Reynolds, 2014, p. 105). Other associated concerns include

neighborhood safety, and the daunting task of policy advocacy (Cohen & Reynolds, 2014).

While many UA projects are simple community gardens that operate off volunteers and donations, new forms are emerging that operate at larger scales. In order to operate at a large scale, stakeholders have to consider site characteristics, land tenure, and labor and management arrangements (Cohen & Reynolds, 2014, p. 103). Because of the intense competition for space in cities, land prices are very high. This means that the best use of land is that which generates the most revenue (Cohen & Reynolds, 2014). Philips (2013) described another major barrier to larger operations: zoning regulations. Some cities have outdated laws and policies that discourage growing food in urban areas (Peters, 2020). However, in some major cities such as Detroit, Seattle, and San Francisco, advocates and policy-makers are making headway to rewrite policies to promote burgeoning UA movements (Philips, 2013, p. 6). In order to deal with the inherent challenge of space, urban farms employ a number of methods to optimize limited space. Some urban farms are lucky enough to have access to large, contiguous plots of land, while it is more common to see operations dispersed over multiple lots and spaces. Other emerging technologies include rooftop gardens, greenhouses, container gardening, and the extremely space-efficient method of vertical hydroponics (Cohen & Reynolds, 2014).

Urban farms require specific and targeted resources in order to function. Material resource needs include seeds, soil, land, and access to water. City soils tend to be high in contaminants and low in nutrients, therefore, soil addition and augmentation is often

required (Cohen & Reynolds, 2014, p. 103). Non-material resources also need to be procured: funding, political support, and technical assistance. Obtaining these resources is a fundamental concern to urban farmers looking to initiate or sustain operations (Cohen & Reynolds, 2014).

UA offers far more to city communities than just providing quality foods. The integration of agriculture into urban communities contributes to education, community engagement, and the fight for social justice (Cohen & Reynolds, 2015, p. 106). In today's urban landscape, agricultural projects are generally motivated by a desire to obtain social justice and equity, health concerns, or the intention of infusing capital and entrepreneurship into struggling communities (London et al., 2020). Projects may embody more than one of these goals, and these concepts can work in harmony to promote shared development goals (London et al., 2020). Urban farming requires both material and nonmaterial inputs from the community, which can be challenging in neighborhoods that are already struggling. A variety of approaches and designs create fodder for the continued development and emergence of agriculture in city life. This research is to identify how these approaches can contribute to creating food justice and equity in our cities, and can offer insight into who these agricultural projects employ market-based, health-based, or social-justice based approaches.

## **Conclusion**

As the human population increases and becomes more urbanized, it is inevitable that the challenges of creating equitable access to nutritious food will grow. Urban agriculture is a tool that can be used to foster food justice and sovereignty in marginalized

communities. UA can enhance community coherence through education, advocacy, and engagement. The driving forces behind UA projects are based on different theories of social justice and employ different methods addressing inequalities in access to quality food. The overarching goal of all urban agriculture is to empower communities and enhance available resources.

In chapter three, I describe how I conducted case studies of three urban agricultural projects in and around the Twin Cities metropolitan area. Through interviews, observations, and participant-observation, and as reviewing archival documents in the form of local newspaper articles, I examined how different projects approach food justice, how they operate to promote equity and access, and their views on their role and responsibilities within the communities they serve. I also highlight how these organizations view their futures in rapidly evolving urban environments. This research is intended to give voice to participants, leaders, and beneficiaries of each of these projects, and to put their works in the context of social justice theories of urban living.

## CHAPTER THREE

### Methods

#### Introduction

Urban agriculture has an important role to play in increasing access to quality and nutritious food in cities and has the potential to foster community education and engagement beyond the realm of food. Further research is necessary to understand how current forms of urban agriculture contribute to food justice and sovereignty in our communities. The research described in this paper is intended to determine how UA projects approach these goals: through market-based, health-based, or social justice-based strategies. Beyond identifying drivers, I work to understand and convey how these projects impact the communities they serve, and in doing so, create opportunities for learning. This research is intended to illuminate how different approaches to UA and food justice can empower, engage, and educate the communities they serve.

This research involved conducting case studies of three UA projects to evaluate how they serve and interact with their communities, and the role they play in supporting food justice and civic engagement. Essential components of the case studies included the goals and values of each organization, structure and funding, labor arrangements, and outcomes within the community. Examining these characteristics gives the reader and researcher insight into which strategies are most effective in promoting food justice, equity, and sovereignty in urban communities.

## **Methodology**

My approach to this research was two comparative case studies, focusing on the approaches and methods that urban agriculture projects are employing to engage with and meet the needs of the communities they serve. Case studies are used in a variety of fields and are useful in collecting data specific to a location over a period of time (Yin, 2014). The case study method is appropriate for open-ended learning, which will allow me to develop an in-depth understanding of the organizations (Creswell & Creswell, 2018). My intention is to accurately and earnestly portray the views and experiences of human participants, as well as the ethos and goals of participating organizations. This approach involved in-person meetings, interviews using an online platform, and written communication, as well as observation, participant-observation, and archival research.

## **Setting**

This study involved two urban agricultural projects in and around the Twin Cities metropolitan area. In this paper, I refer to these organizations as Lowertown Farm and Intersections Food Forest. As many, if not most, UA organizations spread their operations across multiple sites as a response to fierce competition for space in cities, two of the case studies involved multiple locations, and each was described accordingly. Two of the organizations I worked with employ traditional farming methods adapted to an urban setting, meaning that they use multiple vacant sites around the city to grow produce. These organizations are also working to incorporate more technologically adaptive techniques into their production, such as container gardening, hydroponics, vertical farming, or greenhouses. The third participating organization was located in a residential

neighborhood in south Minneapolis and is working to create a permaculture-based “food forest” that will include perennials such as hardy herbs and fruit trees. Access and distribution methods vary between organizations and are a part of my research into food justice and community engagement. The diversity of settings is a result of the need to optimize space and other resources that are scarce within densely populated urban areas.

### **Participants**

Participants in this study were staff or volunteers in charge of on-the-ground operations, administrators or planners who oversee operations and secure funding, and members of the community who utilize the services and products provided by the organizations. Beneficiaries included individuals receiving produce directly, organizations who deliver meals to homebound or disabled community members, and restaurants that incorporate produce into their menus. I conducted interviews with participants to learn about their operations and logistics, motivations and intentions for the community, and the outcomes of these efforts.

Demographic information about individual participants varied depending on the location, organizational structure, and goals of the organizations. It was my intention that participants accurately reflected the demographics of the communities the organizations serve racially, ethnically, and socioeconomically, although, as I observed, this was not always possible.

### **IRB Approval and Informed Consent**

I obtained permission from each organization, as well as written consent from each individual participant or contributor. This involved accurately describing the nature

and intention of my research, the expectations of both researcher and participants, and guarantees of confidentiality, including the privacy and anonymity of participants.

### **Data Collection Methods**

I chose to use the case study method because I believe that is the best research option for obtaining an holistic understanding of the operations of the organizations (Creswell & Creswell, 2018), and how they facilitate food justice and/or sovereignty and community involvement. Case studies are a useful and appropriate way to explore a complex question in a real setting (Acton & Evans, 2021). I hope to have portrayed a nuanced description of each participating organization and their contributions to fostering food justice and community engagement. Please note that pseudonyms are used for both individuals and organizations.

### ***Observation***

My data collection employed a top-down approach, beginning with independent visits to the sites to gain initial understanding of the physical structure and layout of each location. I will be observing and documenting the size, layout, and structure of each operation, as well as the crops being grown, and any additional structures or other augmentations being used to optimize growing space. (See Appendix I for a chart of observations). Beyond the structure and formatting of each project, it is essential to learn about how and to whom each organization distributes their products. How do these organizations approach getting their product to individuals or groups within the communities they serve? Intersections Forest occupies a single location in a south Minneapolis neighborhood. It is located in an empty lot among residential homes and

divided rental properties. I made a primary visit of approximately one hour at each site before beginning participant-observation and interviews. These initial visits were intended to provide me with a view of the projects prior to engaging in participant-observation and conducting interviews. These periods of observation provided me with social and environmental context for each site, such as the surrounding location, demographics, and ecological information. The intention was to foster external validity of my data by making observations of each project through my own eyes before engaging with participants.

### ***Participant-Observation***

An essential part of my data collection was participant-observation, which I accomplished through volunteering to work at each site. Following the initial observation period, I participated in volunteer activities at each site. Each volunteer event I attended was open to the public and lasted about two hours on weekday evenings or weekend days. The participant-observation method of data collection gave me the opportunity to make field observations, while also connecting with staff, volunteers, and community members that utilize the products and/or services provided by the organizations. followed by interviews with staff or volunteers. An additional benefit to my participation was demonstrating an investment of time and energy into the project, and, hopefully, functioned as an expression of my gratitude for their willingness to contribute to my research. The purpose of participant-observation was to gain an insider's understanding of the workings of each organization and how their values affect day-to-day operations and project outcomes. A major challenge to the participant-observation method of data

collection is maintaining objectivity and avoiding bias or even advocacy during the research process (Yin, 2014). While it is impossible to remain entirely objective using the participant-observation method, I believe that it led to stronger and more authentic connections between myself and the participants, thus making my research more informed and enabling me to accurately present the views and experiences of participants. (Please see Appendix A for a table of observations collected).

Visits to UA projects and participant-observer activities took place in the fall of 2021 and spring of 2022. In the Midwest, the growing season generally begins with preparations and indoor seed-starting in March and April. Planting occurs during May and June, while summer is the main time for harvesting and maintenance. Late-season crops are harvested into October, and winter preparations happen during early fall. My goal was to gain a complete picture of the seasonal operations of UA projects by visiting and participating during both early and late season activities.

### ***Interviews***

Interviews are an essential and informative tool in conducting case studies and are often structured as facilitated conversation, rather than a series of structured questions (Yin, 2014). I interviewed the project manager, and one volunteer benefactor from each site. With permission from the participants interviews were recorded to ensure accuracy and authenticity in their representation. (See Appendix B for a list of structured interview questions for project managers).

Interviews were conducted during the winter down season, so as not to take time away from participants during the busiest times of the year, namely March through

October. I interviewed two people from each participating site such as administrators or planners, staff members or volunteer workers, and community members who benefit from the products or services of the organization. Interviews were conducted in-person or via a digital platform.

Interviews were approximately 45 to 60 minutes in length. The specific substance of each interview varied based on the setting and the participant, but all interviews will surround the central themes of food justice and community engagement (see Appendix A for a structured list of interview questions). A less-obvious topic of particular interest when interviewing administrators or planning was sources of funding. Understanding the financial structure of the organizations is essential to understanding overall operations, and helped me to develop insight into the motivations and goals of the organizations.

### ***Archival Records***

The final portion of my data collection was to ask each organization to share past media coverage they have received. Participants are eager to share articles that feature their projects, as most groups are happy to receive positive coverage and attention. This data is understandably skewed towards positive coverage, as organizations would be hesitant to share any negative media attention they have received. In addition, I performed internet database searches as well as searches of local publications to find articles related to each organization. Collecting and reading media coverage of each project allowed me to corroborate my observations, while gaining the perspective of other researchers and observers. It also gave me the opportunity to understand other

outsiders' takes on the contributions of urban agriculture to food justice in the Twin Cities.

Interviews and archival research were done during the winter months. I asked participating organizations to share media coverage and articles they featured in from local newspapers and publications. The purpose of this was to gain outside perspectives on the organizations and their role in the communities they serve.

### **Results and Analysis**

Results and analysis are presented as narrative descriptions of each organization, its operational structure, and its benefits to the community. I attempted to categorize each organization according to London et al.'s (2020) three taproots of urban agriculture: market-driven, health-driven, or justice-driven. I hypothesized that each UA project would demonstrate some aspects of all three drivers, but would predominantly favor one of the three. Since each type of driver has specific consequences and long-term effects, I used my knowledge and experience to explain how each organization contributes to the larger goals of food justice and community engagement.

The goal of analysis and presentation was to accurately describe the goals, operational structure, and community outcomes of each project. Using the case study method enabled me to present a holistic overview of how urban agriculture contributes to the goals of food justice and citizen engagement in the Twin Cities metropolitan area.

### **Conclusion**

My research is presented in the form of three comparative case studies of urban agriculture, focusing on the role that UA projects and organizations play in supporting

food justice and promoting civic engagement in the communities they serve. Data collection methods consisted of interviews, observation, participant-observation, and archival research. Participants included administrators, workers, and beneficiaries of each participating organization. Interviews of participants were conducted in-person or via digital meeting, according to the preferences of participants. Care was taken to ensure that participants have a clear understanding of the scope and intention of the study, and all attempts to maintain anonymity and privacy were employed. I also visited each site to make personal observations and notes and will be participating in at least one volunteer event as a participant-observer at each location.

## CHAPTER FOUR

### Results

#### Introduction

Throughout my research, I sought to determine if London et al.'s (2020) model of driving force could be applied to the organizations I worked with, and if I could identify any other driving factors besides those proposed. I approached my investigation using the lens that the driving forces behind urban agriculture projects can be described as oriented towards health, social justice, or market development. I further sought to understand how these projects impacted the communities they serve, and how community education fits into their design and execution.

This research focuses on two urban agriculture projects located in a major metropolitan area of a mid-sized city in the upper midwest. One of the sites is a fully-operational farm located on park land in a busy and diverse neighborhood. The other is a so-called "food forest" that employs permaculture and perennial native plants and trees on a single lot in an urban residential neighborhood. Through visits, volunteering, interviews, and searching archival documents, a profile of each project was developed. The results of this research focus on describing the origins and operations of each project, identifying the driving forces behind them, and exploring how each organization goes beyond mere food production to engage and educate the communities they serve.

In this section, I introduce readers to the two participating organizations and describe their philosophies and operational structure. I then discuss driving forces, and explain how the organizations are engaging with their communities and providing informal education. (For a summary of observations, see Appendix B).

### ***Lowertown Farm***

Lowertown Farm is a five and half acre farm on over eight acres of adjoining park or public lands that provides produce and green space to the surrounding neighborhoods. Unlike many urban agriculture projects that use multiple spaces throughout the city to optimize limited space, Lowertown Farm encompasses a large, singular location that also functions as a public park. A walking tour of the grounds reveals an inviting and open space, with benches strategically placed for enjoying the hilltop views. The farm is many things to the community: a green space for visitors, a functioning farm, a space for learning and reflection, and a venue for community gatherings and celebrations. In a personal interview, farm manager Aaron described how the farm evolved from a casual neighborhood garden club in the 1990's to the fully operational urban farm it is today. After some abandoned buildings were removed from the area in 2009, community and garden club members mobilized to convert the space into a park and farm, with the intention of expanding green space and fostering productive stewardship. Organizers worked hard to engage with the community and promote enthusiasm for the emerging project. After gaining political support, organizers set out to obtain grants and partner with a land trust to overhaul the space. Three years were spent planning and designing the new space, as well as working on legal issues. Concrete and other waste was removed

from the area, and soil remediation was begun. The first official growing season at Lowertown Farm was in 2016.

Lowertown Farm is managed by a board of directors, and employs three to four seasonal workers and five permanent employees. The farm also supports small and backyard growers through outreach and education. This involves market development and seeks to help entrepreneurs bring produce and value-added products to local markets.

Aaron and other members of the staff explained how the farm pays its bills. Lowertown Farm is funded primarily through grants and corporate donations, as well as private donations. Private donations are not solicited but are accepted. The farm also recoups some of its costs through sales at farmer's markets and farm stands. Additionally, they sell produce to restaurants interested in using locally grown produce in their menus.

The farm grows a variety of perennial crops including apples, pears, plums, and apricots. They also provide Aronia berries, also known as chokecherries to a popular and emerging Indigenous food restaurant nearby. They grow perennial herbs such as chives, onions, mint, and comfrey, as well as asparagus. Peppers and tomatoes have been a major crop since the farm was established, and the focus is on preserving culturally significant varieties, such as the Moyamensing tomato. Aaron explained the significance of this varietal: Moyamensing tomato was developed in the mid 1800's in the kitchen garden at Moyamensing Prison in Philadelphia. The Moyamensing Prison was known for housing abolitionists and labor activists. Lowertown Farm uses the traditional "Three Sisters" method of growing corn, beans, and squash in the same spot. Additionally, the farm

grows many traditional market vegetables such as carrots, radishes, sweet potatoes, and squash.

### ***Intersections Food Forest***

Intersections Food Forest is a much more subtle operation than Lowertown Farm. It occupies a single corner lot in an urban residential neighborhood. At first glance, it could be mistaken for an overgrown abandoned lot. A closer look reveals order and organization. Hand-painted signs invite visitors to enter and explore. Even an untrained eye will immediately notice that this is not a random assortment of the kinds of trees and shrubs found growing wild in disturbed areas. There is an intentionality to the placement and selection of trees and shrubs. Thick grapevines dangle temptingly from a wooden pergola. Recognizable shrubs such as raspberries and currants brush against the knees of visitors. And in the canopy, fruit trees like apples, cherries, and plums attract humans and wildlife alike.

I interviewed the project manager, Robert, about the origins of the project, and where it stands today. Intersections evolved from a small flower garden in an empty lot into an established, perennial “food forest” over the course of thirty years. The flower garden was initially established in 1993 to fill a persistently vacant lot on a corner plot in an urban residential neighborhood. While the city park board holds the deed to the land, the forest is currently operated and administered by the local neighborhood association. It occupies a standard city lot, approximately 40 x 150 feet.

In May of 2014, the neighborhood association received a grant to overhaul the existing informal flower garden, and redesign it as a community garden. With help from

the university's extension service, the new garden was designed to require minimal maintenance once established, by planting primarily regionally appropriate perennial plants that provide a variety of produce, as well as contribute to the health of the ecosystem. The soil was replaced to a depth of six feet, and design and structural elements were added to facilitate water distribution. The decision was collectively made by residents and the neighborhood association to make the project accessible to anyone, with no restrictions on who can take produce from the garden. It is completely volunteer-run, with the exception of one park board employee who oversees community garden projects throughout the city.

Intersections Food Forest provides a variety of types of produce for community members. This includes 21 fruit trees, such as cherry, apple, pear, juneberry, and plum. Other perennial crops grown are elderberries, raspberries, currants, and some native herbs. The forest is open to anyone for the taking, and beneficiaries are encouraged to help out with management during the summer season. According to the project coordinator, Robert, the main goals of the food forest are to “feed people, and rope ‘em into volunteering.” Almost all of the produce is taken and used by community members, and Robert considers this to be a marker of success.

I first spent an hour taking a self-guided tour of the forest, and returned later to help with weeding and talk with other visitors and volunteers. Neighborhood residents were happy to speak with and share their experiences and impressions of the project, and the impact it is having on their community. I spent time interviewing the project manager and looking at some of the mock-ups and plans for the initial installation and ongoing

development plans. Finally, I reviewed some local media coverage, which is how I initially learned about the project.

### **Farm Focus, Structure, and Organization**

In this section, I will describe the origins and operations of these two projects. Much of this information was obtained from direct interviews with project managers. I also visited each site on my own, and participated in volunteer days, learning through service, and discussing experiences with other volunteers. Project managers also directed me to articles and features from local media organizations that have highlighted the projects in recent years.

#### ***Lowertown Farm***

In its mission statement, Lowertown Farm emphasizes community involvement and green space. The farm is intended to “...serve as a model for a multicultural community, and a catalyst for economic development...” (Lowertown Farm, Mission Statement). They describe their community as “...rooted in social equity, justice and interconnectedness.” The farm serves a highly diverse community that is made up of working class and lower-income residents.. Because of this, the farm has made addressing food and environmental justice a primary part of its mission.

Lowertown Farm is a 501c3 nonprofit organization, meaning that they are a tax-exempt educational and charitable organization that is prohibited from lobbying. The farm staff is made up of 5 permanent employees, which includes the executive director, the farm manager, a community outreach specialist, and a chef-in-residence, as well as three to four seasonal farm workers. Aaron explained that there is an intentional focus on

hiring directly from the surrounding community whenever possible. Lowertown Farm is set on eight acres of public park, and about five and half of those acres are used for growing food and produce. The farm prides itself on being an urban demonstration farm, and values community involvement and educational outreach.

The farm manager at Lowertown Farm described to me the many outlets and pathways to the distribution of their produce, as well as some value-added products such as canned goods or sauces. In the growing season of 2017, the farm produced approximately 10,600 pound of produce that was distributed to food shelves and distribution centers, sold through CSA shares or farmer's market, donated to other organizations, or sold to local restaurants. Additionally, Lowertown Farm has its own neighborhood farmstand on location, and engages with the community through outdoor gatherings and pizza night, using produce from the farm and a brick oven to bring people together and feed them. Other community events include cooking and foraging classes.

According to Aaron, Lowertown Farm relies heavily on community volunteers, as is common with many non-profit organizations and/or UA projects. Volunteer nights bring together regular volunteer laborers to participate in farm chores, labor, and projects. Food shares allow 15 local residents to volunteer in exchange for produce to the equivalent of fifteen dollars per hour.

### ***Intersections Food Forest***

Robert, the project manager, who lives in a home just across the street from the forest, has been involved with the project since its inception. He was happy to share the story of the project's evolution. Intersections Food Forest evolved from a

neighborhood-operated flower garden used to improve an unsightly asphalt lot in the 1990's, to a perennial forest of fruit trees and shrubs, as well as native herbs and flowers. With help from the park board and the neighborhood association, the lot was transformed beginning in 2014. Funding was provided by the neighborhood association, city taxes, and an endowment fund left by a local school teacher. Additionally, the project receives support from a city-wide neighborhood improvement initiative.

Robert described the process of planning, designing, and implementing the vision for the project. With the help of the local university extension service, the lot was redesigned to optimize growing conditions and water utilization. All of the remaining asphalt, as well as an additional six feet of soil was removed and replaced across the lot. The property's elevation was doubled and the backside beveled to create a runoff water catch basin and wildflower rain garden. Although the property is technically owned by the city park board, it is managed by the neighborhood association. Organizers were told that they could not plant trees, because boulevard trees are owned by the county, and despite an overall goal of increasing the overall number of trees, the county did not want trees planted without their approval. However, project organizers decided to go rogue, and planted 23 fruit trees on the property, including a number of varieties developed by the local university. After a few years, the park board appointed a community garden coordinator to help local garden organizations optimize their resources, and the trees were granted legitimacy.

Intersections Food Forest takes a very different approach to distribution than Lowertown Farm. The Food Forest is managed and maintained almost entirely by

volunteer labor. Robert sees himself as an ambassador of the forest, greeting visitors and informing them about what is going on the site, and, of course, recruiting volunteers. A novel and interesting approach to the distribution of produce is what sets Intersections apart from other UA projects. The forest is completely open and free to the public. Almost all produce is harvested and used by neighbors and community members. By transitioning to a permaculture model with open access, Intersections has effectively minimized the amount of funding and labor needed to maintain the project.

This low-key approach has been extremely successful. I spoke to two different neighbors who were visiting the forest, and both raved about the project. One person described how younger children love the opportunity to pick and eat the fruit. According to Robert, almost all of the produce is consumed each year, with the exception of a few apples, which are then usually turned into baked goods or apple butter. When asked about working with local food shelves and distribution centers, Robert replied that there is not really any produce leftover after community members take what they can use, with the exception of apples, which he works hard to find homes for. He stated, “You know what natural apples look like,” implying that it is not appropriate to give substandard produce to people experiencing poverty. This is an interesting and solvent point about the ways we think of food justice.

### **Driving Forces**

I used London et al.’s (2020) model of driving forces as a template for understanding the motivations and intentions of these two UA projects. London et al. (2020) proposed that UA projects are motivated primarily by one of three driving forces:

health, market, or social justice. I worked to understand how each of these forces is incorporated into the mission of the projects I worked with, and identify other driving forces that may not have been predicted by London et al (2020).

I hypothesized that it would be difficult to identify a single primary motivator for each project; instead, the drivers of these operations would be a combination of these factors, and that one or more other driving forces may be identified through my research.

It was indeed difficult to characterize a primary motivator for each of these cases. These two projects exist in very different communities, thus, the residents they serve have different needs. Additionally, the projects have different sources of funding, and I learned that these sources have an influence on the goals and objectives of the project. The amount and type of land utilized also affects the approach to production and distribution. I found that both UA projects incorporated at least some element of each of their drivers into their missions and operations, although to different extents related to the above factors.

Finally, I anticipated that a fourth driver was emerging, which I classify as community education and engagement. The level of formality that this driver is employed varies between the two projects, but it is quite clear that the folks behind both projects place great value on engaging with the community, bringing people together through food, and promoting learning about environmental science, food, and food justice.

### ***Lowertown Farm***

In Lowertown Farms' strategic framework statement, it is explicitly stated the goals of the organization include contributing to healthy food systems and filling gaps in

food production and distribution. It also stated their intention to be a community destination for learning, reflection, and celebration. Stated values also include multicultural community, social justice, and market development. This strategic framework included all three of the components of London et al.'s (2020) model of driving forces behind UA, as well as a fourth driver, which I believe to be strengthening community ties through education and engagement. Both Lowertown Farm and Intersections Food Forest have a historical trajectory in which the projects evolved from simple community gardens into larger-scale operations that cater to the needs of the communities they serve. In the case of Lowertown Farm, the farm's growth and development has expanded to include distributing produce to local residents through a variety of pathways, and creating both formal and informal settings for community education.

Throughout my interviews and conversations, members of the Lowertown Farm community returned to the topic of community education. I interviewed the project manager at each site, as well as one volunteer worker associated with each project. When asked about the role of community education, interviewees were enthusiastic and happy to explain the ways that community members were engaging and learning through their participation. One interviewee told me that the cooking classes at Lowertown Farm had really helped her to find ways to use the produce she received in exchange for volunteering. Both interviews included a specific question about community education, but the topic came up in other parts of our discussions, such as youth volunteering and the overall philosophy behind the project. Education was mentioned at least two times

outside of the direct question, indicating that education is an essential part of the farm. The emphasis on engagement and education is apparent in the many ways that the farm goes beyond simply producing food to include outreach programs and welcoming educational, civic, and faith-based organizations to volunteer with the farm.

Lowertown Farm's impacts include initiatives to support local growers, gardeners, and people making value-added products in the surrounding neighborhoods. Their backyard growers initiative helps small-scale producers with funding, education, and bringing their products to market. They also host community gatherings such as farm pizza nights or cooking classes. Cooking and foraging classes are led by the chef-in-residence. These classes are intended to empower residents and beneficiaries to learn about food, environment, sustainability, and health. These educational initiatives are rooted in the principles of stewardship and creating a sustainable community.

According to their website, Lowertown Farm also partners with school districts to bring K-12 students into the farm and park for service learning. Students help out with farm labor, while learning about things like invasive species, forestry, and, of course, growing food. Activities include carving pumpkins with younger children, or identifying and removing invasive species such as European Buckthorn with older groups. All of the staff members I spoke to emphasized that it is essential to get students from urban schools outdoors and interacting with the environment. In this way, Lowertown Farm creates opportunities for students to outdoor learning and connect with the land and nature. Green space is a rare and hot commodity in urban areas. The neighborhoods

served are generally lower-income, and green space is lacking, so Lowertown Farm serves both to provide green space and access to fresh, nutritious food for its residents.

The farm is open to the public, and it is apparent that the community appreciates and uses the green space. Benches are scattered throughout the grounds, encouraging relaxation and reflection. Informational signs are scattered throughout the farm, explaining to visitors what is being grown and other information about the history and operation of the farm.

Aaron described how the farm is funded and maintained. Lowertown Farm is funded primarily through grants, as well as some individual donors. The farm does not actively solicit private donations, but they are accepted. They also receive corporate donations from seed companies and food co-ops. Market events and sales help to recapture costs, but do not turn a profit. Some cost is also recaptured by renting space out for events like weddings. One of the challenges of operating as a non-profit is that the organization is somewhat beholden to the standards of their donors. This can contribute to the mission and driving forces of the organization. For example, Lowertown Farm has worked with the Trust for Public Land. This means that the farm must be open to the public, create green space, and contribute to sustainability. In this case, these goals align with the farm's intentions, but it is important to note that reliance on donations and grants means meeting the qualifying criteria of the benefactors.

It became apparent to me through conducting interviews, reading articles, and visiting the farm's website, that market development is also a driving force at Lowertown Farm. This includes programs that support start-up operations such as other small urban

farms or craftspeople looking to bring value-added products to market. Lowertown Farm works to help to connect producers with resources for marketing, packaging, and distributing their products. The focus on local producers and market development means that in addition to providing food and green space to the community, the farm also functions as an incubator for other urban agricultural projects. This collaborative approach to community building and market development is counter to traditional views about competition in the marketplace. Lowertown Farms work to develop the locally-produced food market; the view is not that other food production start-ups are potential competitors, but that a strong and growing market helps all producers.

I conclude that the two strongest driving forces at Lowertown Farms are local market development, and community engagement and education. London et al. (2020) identified market development as one of three main drivers behind UA projects. My research and work at the farm has brought me to the conclusion that community education, both formal and informal, may be a major driving force behind the urban agriculture movement.

### ***Intersections Food Forest***

Intersections Food Forest operates in a more casual manner, with less focus on marketing and distribution than is seen at the larger Lowertown Farm. Intersections circumvents the entire concept of marketing by making the products available to anyone and everyone. By eliminating concerns about finance, and operating as a volunteer-managed project, Intersections is able to focus its available resources on community health, engagement, access, and education.

Robert, the forest coordinator, emphasized the environmental considerations of the project. No fertilizers or pesticides are used. Robert and his colleagues view the forest as a complete ecosystem, choosing plants that are native and work well together. He encourages his volunteers to avoid over-weeding in order to allow herbaceous “volunteer” plants to protect and anchor the soil to reduce erosion. Ground cover also provides habitat for animals and insects, and Robert sees this as a part of responsible stewardship. This approach results in a “wild” feeling inside the forest. Some maintenance such as pruning, and some weeding, are necessary to optimize production, and create an inviting space for visitors. The forest project evolved from a neighborhood flower garden that was planted to improve an unsightly empty lot, and aesthetics still remain a priority. However, the forest provides visitors with the rich experience of being immersed in a luscious green space, surrounded by edible plants.

The driving forces behind Intersections Food Forest seem to be: creating green space in the neighborhood, engaging and educating residents and visitors, improving environmental quality, and providing an equal-access opportunity for visitors to access fresh, locally grown produce with no strings attached. These relate to London et al.’s driving forces of community health and social justice. There is an emphasis on offering fresh produce to anyone in the community. This also addresses some of the issues surrounding inequalities regarding access to fresh produce in urban neighborhoods. Although the impact of this project is limited by its size and scope, the concept of creating open food forests throughout the city could help to address so-called food deserts and increase access to nutritious foods.

Although the forest consists of low-maintenance perennials, and is entirely volunteer-operated, some funding is necessary for upkeep, including rent. Robert reports that the vast majority of funding for the project comes from a city-run initiative for neighborhood revitalization. While there are some guidelines that must be adhered to in order to receive this funding, the mandate is fairly open. According to their website, the Neighborhood Revitalization Program is on a mission to provide support and funding to neighborhood projects that promote civic engagement and beautification of the city. Intersections easily qualifies for this funding, and they have plenty of leeway to use the funds as they please. The novel, open-access approach to distribution has gained the attention of universities and researchers, and it serves as a model for open-access to perennial gardens around the nation and beyond, as is apparent by local media coverage.

### **Community Engagement and Education**

Education and engagement are a central part of the mission of both of the organizations. So much so, that I propose they constitute a fourth driving force of UA projects. The branches of UA extend far beyond the mere production and distribution of locally grown produce to include promoting community development and cohesion. The opportunities for non-formal community education include cooking classes, informational presentations, and celebratory events. The act of volunteering is itself an educational opportunity, as volunteers interact with and learn from farm staff. Newsletters and local media coverage serve to inform community members about the farm and associated opportunities. In some cases, these organizations directly engage with K-12

schools. Intersections Food Forest has even drawn the attention of universities and researchers, according to Robert.

### ***Lowertown Farm***

At Lowertown Farm, the main component of education is classes taught by the chef-in-residence. These classes are open to the public, and help participants learn about gardening, farming, cooking and foraging. The chef teaches participants how to cook with produce from the farm, including some items that many people are unfamiliar with, such as collard greens or okra. The chef holds pizza parties where participants can use ingredients grown at the farm to create their own pizza and bake in the on-site brick oven. The sensory and celebratory act of breaking bread together promotes friendship and camaraderie among residents, while demonstrating how to use fresh produce through hands-on activities.

Lowertown Farm also works with the Office of Early Learning at the local public school district to create programs for students. These programs are developed to be age-appropriate and to give city kids a chance to enjoy the outdoors while engaging in hands-on learning. This may include bringing in high school students for volunteer days, educational tours for middle schoolers, and crafting and snacking with younger students. Annually, Lowertown Farm hosts a “getting ready for kindergarten” event, which involves a variety of activities that promote growth and development, and helps kids to prepare for a structured learning environment. Activities may include a variety of crafts, such as pumpkin carving, games to teach cooperation skills, and farm-related snacks.

Because Lowertown Farm is located in a public park, informative signs are located throughout the farm. These signs allow visitors to engage in self-guided tours while learning about the farm, its history and mission, and the foods that are grown there. Lowertown Farm is planning to expand the number of these signs in the coming years.

### ***Intersections Food Forest***

The coordinator of Intersections Food Forest sees the project as a way to promote and teach the value of stewardship in the community. By encouraging people to take advantage of the free produce, Robert hopes that visitors will be inspired to think about the origins of the foods they eat, and their place in the ecosystem. He emphasizes that he thinks it is especially important to encourage elementary age children to enjoy the fruits, and to show their friends. His hope is that kids who visit the forest will become accustomed to the idea of growing and eating fresh foods, and will think of this as a normal activity. While there is no volunteering requirement to utilize the produce, residents are encouraged to join in to help maintain the community space. Project organizers told me that they hope that by working to steward the forest, volunteers will develop pride and ownership of the space, and consider the relationships between the food we eat and ecosystems. The forest provides an interactive green space that allows visitors to enjoy the fruit, while participating in the project and learning about stewardship and ecology.

Intersections Food Forest has caught the attention of researchers and graduate students. Robert has fielded questions and welcomed researchers to the project site since its inception. Researchers are interested in learning about permaculture and food

production, as well as the role that open source projects play in community development and cohesion. Robert has worked with the state Department of Natural Resources to help out with research tracking invasive pests such as the Japanese beetle, a distinctly emerald scarab beetle that feeds on roses, grapes, and other plants. The information obtained from trapping at Intersections contributed to the understanding of the corridor these insects use to travel and spread.

Other educational and engagement programs include the Step Up program, which gives local teenagers the opportunity to do summer work in community development while being paid a fair wage. Robert also works with a local elementary school program, in which fourth graders visit and help out with the forest in the fall and spring, and subsequently teach third graders about the forest and how they will be engaging with it the following year.

It is clear that Robert and Intersections seek to use the forest for more than just green space and free produce, but also as a tool to engage and inspire community members to think about food as a part of the larger ecosystem, and become stewards of the land.

## **Conclusion**

Intersections Food Forest and Lowertown Farm take very different approaches to production and distribution. Lowertown Farm uses an approach that is market-driven; seeking to recapture operating costs through sales, encourage food shares for volunteers, and bring smaller producers into the market. Intersections employs a more casual approach centered on community access to nutritious, fresh foods. By making their

produce open and available to anyone and focusing on perennial food crops, Intersections has been able to maintain their project on a very small budget. While both of these organizations are in some way striving to correct inequities and social injustice, they demonstrate how different approaches can be used in different settings to address these goals.

Community education and engagement are the emergent driving force behind both of these projects. This was demonstrated by the frequent mention of education by interviewees, but it also is seen through actions. At Lowertown Farm, a large emphasis is placed on community engagement and interaction, which creates learning opportunities through direct means such as classes and school programs, as well as indirect or incidental opportunities through informative signage, volunteer opportunities, or direct interaction between staff or volunteers and visitors. Intersections Food Forest takes a more casual approach to education, encouraging residents and visitors to take and eat the produce. Also notable is Intersections' contributions to research conducted by educational institutions or government agencies.

The reach of both of these projects is limited, due to their nature, locations, and available funds. While no single urban agriculture project can solve the intractable problems surrounding food insecurity and food justice, this research is intended to show what can be accomplished, and hopefully promote and encourage the expansion and frequency of such projects. When food is produced and distributed locally through community means, the people can have more control and power over their health, well-being, and the environment.

## CHAPTER FIVE

### Conclusion

#### Introduction

Through these case studies, I sought to identify the drivers and motivations behind each project, and the impacts they have on the communities they serve. Additionally, I want to understand how these organizations engage and educate community members. This research has shown how organizations are motivated by a variety of factors, and how they continue to change and evolve in response to the outcomes and the needs of their communities. Impacts vary depending on the size, funding, and goals of the project. It is clear that engagement and education merge as volunteers and other participants are brought together to create, learn, and harvest the fruits of their labor.

Driving forces are identified through the goals and mission statements of the organization, as well as the attitude and outlook of participants and beneficiaries. Community engagement and education take on multiple forms, some more structured than others. The outcome, however, is learning through experience and service.

Urban agriculture has great potential to fill in gaps in our food systems, address the problem of urban food deserts, and promote community health and well-being. Ideally, it can help develop food security and autonomy by engaging and educating community members about health, agriculture, and local markets.

In the following chapter, I summarize my major findings and discuss how these findings compare to previous research in the field. I also discuss the implications of my findings in terms of policy and planning, and share some ideas about further research.

### **Major Findings**

My research focused on identifying driving factors behind both of the organizations I worked with, and exploring how the projects impact the surrounding communities through education and engagement. I identified what I believe are the primary drivers at each organization, and I concluded that community education is itself an emerging driving force. I also came to understand that UA projects will use different approaches based on the needs of the communities they serve. Finally, I developed a new understanding of how sources of funding can affect the operations, structure, and scope of a project.

The driving forces behind these two organizations differ according to the needs of the communities they serve and their approaches to funding and operations. In both cases, there is an intention of increasing access to fresh and local foods in city neighborhoods. This relates to both social justice and community health. Intersections Food Forest uses an “open-door” approach to distribution, allowing and encouraging anyone who visits to enjoy the produce. The scale of production at Lowertown Farm is much larger, resulting in a more complex approach to distribution, as well as a farther reach and greater impact on the community. In both cases, community health is emphasized not only through the provision of fresh foods, but also the creation of green space, encouraging outdoor activity and interaction with nature.

At Lowertown Farm, market development is also a strong driving force. While the organization itself is not-for-profit, part of its mission is to help smaller-scale producers bring their products to market. Market and economic development also includes employing local residents at liveable wages and offering workshare opportunities.

Beyond the scope of London et al.'s (2020) model, which delineates the drivers of UA as driven by health, market, or social justice goals, both organizations demonstrated intentions of community engagement and education. This emergent driver is seen through both formal and informal opportunities for community members to participate in the projects. At Intersections, learning is encouraged by inviting community members to enter the forest, do caretaking at their leisure, and enjoy the fruits of the garden. This type of learning is a somewhat passive approach, allowing for self-directed and experiential engagement. At Lowertown Farm, there is a more structured approach to education, including classes, programs, and community events. Lowertown Farm also provides for the more passive type of learning through signage, and simply by being a public park open to anyone who wants to see what is being grown and how it is being done.

Involving community members seems to be a critical component of the goals and operations of both Lowertown Farm and Intersections Food Forest. Both organizations rely heavily on the work of community volunteers to perform the labor necessary to produce and distribute food. Volunteers help keep overhead costs down and promote feelings of pride and ownership. Volunteers also provide connections to other parts of the community, and can help organizations to network and find ways to meet the needs of community members. In the case of Lowertown Farm, volunteers have the opportunity to

participate in a workshare, which compensates them with the equivalent of \$15 per hour of fresh produce.

Both organizations also work to educate community members about food, health, and the processes involved with growing our food. At Lowertown Farm, a more structured approach to community education is employed, through onsite classes. At Intersections Food Forest, organizers educate through direct contact with visitors and volunteers. Both organizations have been highlighted in local media publications, expanding their reach.

Community education and outreach were very prevalent themes throughout my research. During interviews, project managers and volunteers frequently brought up these ideas. The occurrence and level of focus on community education and engagement has led me to identify them as comprising a fourth driving force behind UA projects. Beyond the three drivers purported by London et al. (2020)—health, social justice, and market development—community engagement and education appears to be equally important to project organizers and volunteers.

### **Revisiting the Literature**

Much of the literature I reviewed focuses on long-term solutions to food inequities. Travaline and Hunold (2010) discussed how long-term solutions to food inequity can only be addressed by engaging and empowering disenfranchised communities. While food shelves, community meals, and government food aid programs can fill in the gaps, I believe that food through community cohesion and autonomy are essential in order for us to move towards food justice, equity, and sovereignty.

Cadieux (2016) emphasized how food education relates to environmental stewardship and sustainability. Throughout my research, I have seen how both organizations use food to help people connect with nature and value green spaces. When communities can gain control over food production and distribution will we see equity in not only access to quality foods but localized community jurisdiction over production and environmental sustainability.

Draus (2014) identified four ways that UA projects can benefit communities, and both Intersections Food Forest and Lowertown Farm demonstrate how these benefits manifest. By transforming under-utilized spaces to grow food and provide green space, the projects are adding value to communities. Residents gain increased access to fresh foods, and, in the case of Lowertown Farm, jobs are created for local residents. Perhaps the most significant way that these projects benefit their communities is by bringing people together, thereby enhancing community cohesion and empowerment.

London et al. (2020) discussed the driving forces behind UA projects and organizations as falling into one of three categories: community health, market development, or social justice. I have come to believe that beyond these three drivers, UA organizations are motivated to educate and engage community members, thereby increasing the power of said communities to gain choice and control over their environment and health.

### **Implications**

Through my research, I have come to believe that development and expansion of UA have the potential to become a major contributor to the goals of food equity, security,

and local autonomy in our cities. These projects may range from small-scale, open-access food production, as we have seen with Intersections Food Forest, to larger-scale, funded urban farms such as Lowertown Farm. There is ample opportunity for communities to organize and transform under-utilized urban spaces to grow healthy, fresh food for nearby residents. In order for this to happen, a greater emphasis must be placed on local control of neighborhoods, and our governing bodies must prioritize reforming our neighborhoods to sustainably meet the nutritional and environmental needs of residents.

Large-scale industrial agriculture and food production is not serving our urban communities. The existence of food deserts is only one symptom of the greater problem. Centralized food production puts consumers at the mercy of large corporations and increasingly unpredictable growing seasons, as we realize the global effects of climate change. Urban agriculture alone will not solve the enormous risks to our food system that are emerging, but it does have great potential to empower communities to protect against volatility in our climate and our economy.

### **Future Research**

Urban agriculture is only a part of the solution to food injustice and insecurity. However, with more funding, these projects have the potential to expand their reach and productivity. The growing season in the midwest is relatively short, and some organizations are working to convert abandoned warehouses and other unused spaces into indoor farms. This approach could help increase the types and amounts of crops produced. However, projects like these come with a high overhead cost, including renovating old buildings to meet the needs of the organization and the standards of the

overseeing bodies, as well as continually high operating costs. Projects of this magnitude will require large amounts of capital from both private and public sources.

There is another observation that I would like to see addressed in future research. The vast majority of staff and volunteers that I met while gathering data were white and middle class. This is not an accurate representation of the communities the projects intend to serve. I believe it is essential that those engaged with these projects accurately represent the surrounding communities, and engage with all members of the community.

An area of interest that I would like to bring into this research is the emerging and exciting Indigenous Food Revitalization movement that is gaining popularity across North America. Organizations such as the North American Traditional Food Systems (NATIFS) work with farms, restaurants, and community and tribal groups to promote health and reconnection to culture through education and agriculture. Many of what are commonly considered staple foods, such as white flour and white sugar, are not a part of traditional indigenous cuisine in North America, and their introduction has had dire consequences for the health and culture of Indigenous people, as well as the environment. Lowertown Farm, for example, sells one-hundred percent of their Aronia berry crop to a local high-end restaurant that serves food made of exclusively native and decolonized ingredients.

### **Limitations and Setbacks**

Our research never goes exactly as planned. Unforeseen setbacks and hurdles can change the trajectory of our inquiries. New information may lead us to revise or expand

upon our initial research questions. In conducting this research, I encountered two major setbacks that affected my approach.

First, we were blindsided by a pandemic. COVID-19 rapidly swept across the globe, resulting in shutdowns, postponements, and rethinking how we approach communications. People who were able began working from home, while students had to adapt to online learning. For me and my research, this meant that many urban farms suspended or scaled back their operations for the 2020 season, resulting in layoffs and postponements of programs such as internships or community engagement. My interviews with farm managers were conducted online, while my participant-observation had to follow the course of the communities' viral load and the protocols of individual organizations.

The second major hurdle I encountered scaled back my research by a third. My original intent was to work with three different organizations, covering a more complete swath of types of UA organizations. I had hoped to compare a small, grass-roots project such as Intersections, a medium-sized, independent urban farm, in this case Lowertown, and a large, agri corporation-backed philanthropic farm. Ultimately, my contact at the corporate-sponsored project had to back out for personal reasons, and I was not able to find a replacement. I found out quickly that working with two organizations was plenty, however, I would have liked to have gained some insights into the drivers and impacts of projects with greater sources of funding, and perhaps different overall goals.

## **Conclusion**

There is no single solution to the problems of food injustice and inequity in urban areas. Many groups and organizations are working to address the problem through myriad avenues. Food shelves and free meal services address the immediate needs of those suffering from food injustice, while other organizations use an approach of reclamation and redistribution. Urban agriculture has the potential to address not only food injustice, but it can also provide green spaces that are rare in the city, contribute to environmental justice, help develop local markets, and strengthen communities through engagement and education.

This research has helped me to begin to understand, and hopefully convey to readers, the inseparability of education and engagement in community building. I have also come to believe that community engagement, education, and empowerment are not only essential to a democratic society, but that these principles are essential for our society to progress toward social, environmental, and food justice. I hope to bring this new understanding forward as I continue working with UA projects as a volunteer and as an environmental and food educator. The insights I have gained help me to see more clearly how projects will be shaped by the needs of the community, the goals of the organization, and the sources of funding.

The two organizations profiled in this research are only a sliver of the myriad approaches to urban agriculture. I look forward to a future of increased local autonomy, equity, and sovereignty as we work to adapt our cities to the changing social, economic, and environmental climates.

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## **Appendix A**

### **Structured Interview Questions**

1. What is the mission or goal of the farm?
2. When was the farm established, and by whom?
3. How does the operation procure the land they use?
4. What is grown on the farm?
5. Do you feel that the farm fosters physical health in the community?. Please elaborate on this?
6. Do you feel that the farm promotes social justice in the community?
7. Does the organization create profit and/or jobs in the local community?
8. How is the farm funded, and how does its funding change from year to year?
9. Who are the recipients of the farm's product's? How did/does the organization decide which people or organizations will have access to their products?
10. Who is the labor force at the farm? Is there a work-share program?
11. How has the farm's mission and operations changed to meet the needs of the communities it serves?

12. Do you feel that the driving motivations behind this organization can be framed in terms of community health improvement, community profits and economic resilience, or social justice?
13. How do you feel that your organization is providing education and engagement opportunities within the community?

## Appendix B

### Participant-Observation Data Checklist

<b>Data Factor</b>	<b>Intersections Food Forest</b>	<b>Lowertown Farm</b>
Size of Project	40' x 150' (1 city lot)	5.5 acres for growing food, approximately 8 acres total
Location Description	Corner lot in a middle-class residential neighborhood	Large single cite on a hill centered in a multicultural neighborhood with lower incomes
Products	Perennial fruits and herbs, including cherries, apples, plums, grapes. elderberries, currants, chives, and sorrel	Emphasis on culturally significant tomatoes and peppers, in addition to standard market produce such as carrots, beans, squash, cabbage, and herbs. Also, seeds and seedlings to share with community members and other UA projects
Agriculture Types	Low-maintenance permaculture	Annual planting with crop rotation. Intentions to develop more orchard and perennial-type crops
Structures on Site	Bench, pergola	Administrative building, storage shed, hoop house, pizza oven, benches, and a few art pieces.
Number of Staff and Volunteers on Site	2 (including researcher)	8, including researcher and farm manager
Other Observations (Signs, Decor, "Vibe")	Simple, hand-painted signs featuring the name of the	Extensive signage, including identifying

	project, various other hand painted planters and pavers with encouragements	plants, projects, ways for the community to help, history of the site
<p><b>Question for participant-observation only:</b></p> <p>Evaluation of other participants: Number, Demographics, Age, Group Affility, Locality, as well as activities being completed</p>	<p>Participants: 4: 1 woman, over 40, 1 man over 65 (manager), 1 younger white man 20's, self. All neighborhood residents, excluding me. Trimming, clearing paths, hauling brush, picking up trash.</p>	<p>Participants: 12. 10 white, 2 males of Hispanic origin. Ages ranged from mid-twenties to sixties. All community residents, but from a more broad surrounding area. Harvested sunflower seeds, harvested squash, prepared hoop houses for winter, did some minor repairs to a storage building to discourage rodents from habitating there.</p>