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Urban Agriculture in Chicago: Support for and Challenges to Programs Aimed at Addressing Community Development and Inequitable..

Project description

This project uses a mixed approach of interviews and literature research to illustrate the current state of urban agriculture in the city of Chicago, and to determine whether urban agriculture programs can serve as viable solutions to addressing problems of nutritional inequity, unemployment, and community building in different areas in Chicago. By examining 2 policy initiatives and the methods of 2 large land management organizations, along with the results of 3 interviews with people currently involved with different types of urban agriculture projects, I hope to identify which aspects of the urban agriculture setup in is effective, and which need improvement from government and independent organizations alike.

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Urban Agriculture in Chicago: Support for and Challenges to Programs Aimed at Addressing Community Development and Inequitable Access to Nutrition

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Abstract

This project uses a mixed approach of interviews and literature research to illustrate the current state of urban agriculture in the city of Chicago, and to determine whether urban agriculture programs can serve as viable solutions to addressing problems of nutritional inequity, unemployment, and community building in different areas in Chicago. By examining 2 policy initiatives and the methods of 2 large land management organizations, along with the results of 3 interviews with people currently involved with different types of urban agriculture projects, I hope to identify which aspects of the urban agriculture setup in is effective, and which need improvement from government and independent organizations alike.

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Introduction

Inequitable access to good food is one of the major issues facing the city of Chicago, with communities on the north and east sides being served by a wide range of grocery stores (Mariano's, Trader Joe's, Jewel Osco, Whole Foods, Eataly, etc.), restaurants, and food trucks, while residents in south and west side neighborhoods face long journeys to grocery stores that often stock old and very limited selections of produce and other foods. One of the oldest strategies to fight both poverty and hunger has been the use of urban farms and community gardens. In this report I will analyze past urban agriculture initiatives, the current policy and social environment in Chicago, and review information about the perceived community impact of urban agriculture collected from contemporary participants through interviews. This report deals with not-for profit urban farming initiatives, and does not include rooftop gardens, suburban agriculture, or environmentally protected lands.

Nowadays, urban gardens are still a popular choice among people looking to assuage all sorts of societal woes: psychological trauma, lack of job training, lack of quality food, aesthetically dismal neighborhoods, to name a few (Litt et al 2015, Hale et al 2011, Kaplan et al 1998). Urban agricultural efforts can be an excellent way to address some of these concerns: in community gardens, tenants may grow whichever plants they like while performing a relaxing activity in the company of neighbors. Some urban farming projects, such as Angel Organics, offer classes on farm management, starting a garden, starting a farming business, and nutrition. Unfortunately, despite the hopeful attitude many people bring to urban gardening, the practice is still plagued by myriad obstacles. Everything from inexperienced farmers/untested organizers to the incompatibility of farming with urban building codes and the possibility that "a community garden site, with its cacophony of plants, tomato cages, wheelbarrows, and paths-may look…unkempt" (Hou 2009, 4-23). Urban soils also bring their own set of challenges. The lack of a central source for studies on

urban farming also makes it difficult for experts to devise solutions to common problems, or even discern what the common problems are, due to the lack of access to cross-disciplinary research on the topic (Hou 2009, 21). This lack of central organization was an issue I came across in my research and that I address in my recommendations, along with nutritional education and maintaining accessibility to food produced through urban agriculture.

Literature Review

History of Urban Agriculture

Pre-20th Century

In the US, farming on publicly owned lands within cities began in 1892 in Detroit as a possible path to poverty reduction. The initiative was a major success: by allowing land access on the outskirts of the city to low-income families and individuals for farming, the number of people on the "poor roll" was reduced by 60% in the subsequent decade (Lawson 2005, 26). Through the rest of the 1890s, many other cities in the US adopted urban farming programs, with Chicago developing its own in 1897 (Lawson 2005, 27). During this time, urban farming programs usually relied on land and implements donated by wealthier people who owned large amounts of land that they had no immediate use for. These donations kept the initial overhead cost of starting an urban farm low (Lawson 2005, 31). A second factor that aided the spread of urban agriculture was its promotion as an alternative to traditional charity, where organizations would provide goods or services (food, clothing, medical care, etc) directly to populations in need. In the 19th century, such aid was thought to encourage laziness among its recipients (women, children, and the elderly excluded), or "immoral" behavior, such as drinking or gambling. In contrast with direct charity, urban farming access involved significant effort from the recipients, with those putting in the most work reaping the most benefit, adding a moralistic tinge to the practice. Participants would also learn useful

skills associated with agriculture (Lawson 2005, 29). Despite the success of such programs in reducing poverty, permanent agricultural lands were never officially designated in most cases (Lawson 2005, 50).

World War 1

Simultaneous with the rise of charitable programs was the growth of the Women's Suffrage movement and women's associations and social clubs. These groups often included white women of diverse social and economic class, with upper class women usually joining for a boost in social status, while working women stood to reap professional benefits though their membership (Gowdy-Wygant 2013, 21-22). Along with political goals, groups like the International Council of Women would also hold charity events and other programming aimed at the betterment of society. Women's clubs and associations would serve as the inspiration for the imagery of a "women's army," which would later be utilized in wartime to mobilize female citizens' participation in government initiatives (Gowdy-Wygant 2013, 24). Starting in 1914, the US was home to programs such as the American Women's Natural Horticulture and Garden Association, and later the Women's Land Armies, which sent women from urban areas to work as farm hands in rural areas in small to medium groups (Gowdy Wygant 2013, 31-33). These programs allowed members to increase their economic and social standing by participating. The 15,000 women who joined land armies were usually given room and board, and were officially not to be given domestic tasks at the rural farms they worked on (Gowdy-Wygant 2013, 33). Additionally, a new element of agriculture-based nationalism arose during this period (Gowdy-Wygant 2013, 31). "Through gardening, the individual could personally assist America's war effort while ensuring personal comfort" (Lawson 2005, 119).

Social and governmental pressures to increase domestic food production and reduce intake of grains and animal-derived foods continued to grow as the US entered the war in 1917

(Gowdy-Wygant 2013, 44). The Food Administration, created that same year by President Woodrow Wilson, promoted both the consumption of vegetables among American citizens and the utilization of vacant "slacker land" in urban areas for farming (Lawson 2005, 121). Many of these new initiatives were specifically targeted toward women as large numbers of men sailed across the Atlantic to join battles on the front. Existing groups, like the Women's National Farm and Garden Association and the Garden Club of America, shifted their focus from ornamental gardening to farming (Lawson 2005, 124). Wealthier members temporarily donated some of their land for the cause, as had been done when urban farming got its start in Detroit, and the clubs themselves often offered classes and other gardening resources to help members get their start. Children were drafted into the farming effort as well, if not by their mothers then by their schools (Lawson 2005, 125).

In Chicago, gardening efforts were directed by the Chicago War Garden Committee, which was directed by a group of professionals from a wide range of fields and industries (Lawson 2005, 130). This group served two main purposes: to identify land that would be suitable for gardening, and to disseminate information about best practices for establishing and maintaining war gardens. In total, 238,422 people participated in Chicago, with over $3 million worth of crops produced in 1918 alone (Lawson 2005, 134). At the end of the war, however, much of the land donated or repurposed for gardening was reclaimed for its original use, returning gardening to the status of a leisure activity of high-income people and suburbanites (Lawson 2005, 142-143).

World War II

World War II era urban agriculture efforts differed greatly from those of World War I, primarily in terms of scale and intention. Maintaining a temperate and conservative diet was strongly encouraged during World War I, but these restrictions were never made officially

enforceable in any capacity. During World War II, the government restricted the amount of rich foods such as sugar, butter, meat, and household items through the use of ration books, placing a much harder limit on the types of food American families had access to (Lawson 2005, 171). The US made an even larger push during World War II to produce surplus for export to the front, and much cross-country transport capacity was consumed by armaments, leaving little room for food on supply trains (Joy 2011). As had been done previously, governments encouraged individuals, families, and organized groups to establish their own gardens in order to supplement diets with vegetables. These were called Victory Gardens. The main goals of the initiative were to increase the production of fresh vegetables and other produce, store the surplus for times of shortage, to save money (both nationally and individually), increase access to gardening, and improve morale (Lawson 2005, 175).

Though the Victory Garden campaign seems similar to World War I's war garden campaign, many of the extension programs from that era were not revived for World War II. Governments, organizations, and individual funders remembered the money that had been squandered on seeds and equipment improperly used in war gardens, making them wary of continuing the inefficient ways of the past and leading to an overall reduction of funds for Victory Gardens (Lawson 2005, 182). Despite the lesser input of resources from all sources, Chicago's Victory Garden campaign was a success from its 1943 start through the end of the war. The largest Victory Garden in the US was located in the North Park neighborhood, and there were some 172,000 gardens active in Chicago alone, covering over 900 acres of land (Joy 2011). The National Victory Garden Association was based in Chicago, and would disseminate information on growing and maintaining gardens via radio, newspapers, and magazines (Lawson 2005, 185).

The evolution from the World War I efforts to Chicago's Victory Garden movement yielded two new features of urban farming: the involvement of large companies, and an

emphasis on the mental health benefits of gardening. In addition to churches and schools, large companies such as Sears Roebuck, Marshall Fields, and International Harvester made substantial contributions to the Victory Garden effort. The Chicago Sears Roebuck plant provided space and time during the workday for employees to garden, and both Marshall Fields and International Harvester donated seeds and gardening equipment to Victory Gardening efforts (Lawson 2005, 182, and Joy 2011). Official literature used to promote Victory Gardens listed the mental benefits as incentive to start a garden, especially to the parents of young men who had been sent off to war (Lawson 2005, 186).

Furthermore, steps were taken to safeguard gardens, underscoring their recognized value to the community. Legal penalties were officially established for those found vandalizing or stealing from a Victory Garden. In Chicago, these fines could be up to $50, or about $700 in 2018 dollars (Lawson 2005, 193). Some communities developed more constructive methods for dealing with vandals, such as hiring local teenagers to serve as guards for the gardens during off hours. Such measures also helped to build a sense of neighborliness among people of all ages (Lawson 2005, 193).

Urban Renewal and the 70's

In 1971, Chicago's area and sprawl were growing at a rapid rate, with 10,000 acres of the farmland surrounding the city being converted to residential use each year (Platt 1971, 6). At the same time, privately owned areas of open space available within the center of the city began to be developed for other purposes, increasing the demand for leisure use on the remaining green spaces within and immediately outside the city (Platt 1971, 2). Cities became viewed as places to escape and gain respite from, rather than places to live in comfortably (Platt 1971, 2). Around this time, communities in many American cities also faced pressure from new urban renewal programs aimed at revitalizing areas plagued by

unemployment and crime. Under urban renewal plans, large areas of land would be cleared out and rebuilt, leading to the displacement of much of the original community (Lawson 2005, 218). Those who remained did what they could to sustain themselves: "In the spirit of self-help, some urbanites sought a less wasteful and more socially responsible lifestyle through…gardening, recycling, composting, and fought to take control of local conditions" (Lawson 2005, 219). Urban agriculture was largely volunteer based, and took advantage of vacant and unused land as urban agriculture programs have always done. This time, gardening was not always done with permission from the city, and had little to no governmental support. Vandalism of and theft from farms and gardens remained a challenge (Lawson 2005, 220).

Summary

Throughout the 20th century, urban farming and gardening served as part of the solution to both the US's domestic and international predicaments. Sources of funding for gardens have shifted through the eras, from private to public and back to private again, as expectations of what urban agriculture can and should accomplish expanded over time. Do-it-yourself agriculture has continued to grow in the US, building on these past initiatives and expanding through urban, suburban, and rural settings- 35% of US households grew some of their own food in 2012, spending $3.3 billion in the process (Kessler 2013, A327).

Rules and Restrictions on Urban Agriculture

Table 1: Differences between Urban Farms and Community Gardens

	Community Garden	*Urban Farm*
Ownership	public entity, civic organization, community organizations	for-profit or non-profit organization
Property and Plants	tended and maintained by volunteers	tended and maintained by volunteers, employees, or both
Intended Plant Use	plants grown for personal use, charity, or neighborhood beautification	plants grown for sale
Business License	no	yes

Source: ("Urban Farming FAQ)

The city of Chicago hosts an FAQ on their website detailing some of the restrictions, privileges of, and distinctions between community gardens and urban farms. Some of these are displayed in Table 1, above. Due to recent zoning amendments, urban gardens are forbidden in residential and in B1 and B2 business districts, the reasoning being that the commercial operations of urban farms necessarily occur outdoors ("Urban Agriculture FAQ" 2018). Urban farms also require building permits, business licenses, and off street parking commensurate with the number of employees ("Urban Agriculture FAQ" 2018). Urban farms are currently not permitted to accept food or other scraps of organic matter for composting that was produced outside of the farm itself, however they can sell compost produced on the farm ("Urban Agriculture FAQ" 2018). Similarly, community gardens are allowed to produce

compost (from plants grown on-site), accept donations of already-made compost, and purchase compost for use in the garden, but they may not accept waste materials to be composted ("Urban Agriculture FAQ" 2018). Community gardens must also have an area under 25,000 feet, and their accessory buildings (greenhouses, sheds, farm stands) may be up to 575 square feet ("Urban Agriculture FAQ" 2018).

Supportive Setting for Urban Agriculture in Chicago

Support for urban agriculture in Chicago comes in many forms, including financial, organizational, and educational supports. Some are targeted specifically towards either urban farms or community gardens, while others are applicable to both. In this section, I will discuss the major supports underpinning Chicago's urban farms and gardens: the United States Department of Agriculture's (USDA) Conservation Innovation Grants, the city of Chicago Department of Planning and Development Green Healthy Neighborhoods plan, the Chicago Parks District, and the Neighborspace land trust.

Conservation Innovation Grants

In 2016, the city of Chicago received $1 million to fund the "Growing for Chicago" initiative through the USDA's Conservation Innovation Grants (CIGs). These grants are awarded annually to as many projects as funding allows, with the focus for funding shifting slightly each year. In 2016, the Natural Resources Conservation Service was looking to fund projects that would focus on supporting both long-term and new farmers/ranchers, as well as projects aimed at protecting ground and surface water quality ("USDA Commits $20 Million…" 2016). The areas of focus are different in 2018, with attention being given to projects on grazing lands, organic agriculture systems, and soil health ("USDA Seeking Applications…" 2018). The budget for these grants also changes over time: in 2016, roughly $20 million were available for grantees, but in 2018 the figure has dropped to about $10

million ("USDA Seeking Applications…" 2018, "USDA Commits $20 Million…" 2016). The money granted to fund "Growing for Chicago" was to be disbursed in small amounts to provide "'microgrants" and technical assistance to farmers, while also recruiting and training new farmers from neighborhoods where "…there's a dearth of jobs and few healthy food options" (Trotter, "Chicago Awarded $1M…" The Chicago Tribune, 9/8/2016). Development of land along the Englewood rail trail was named as a priority, following the success of a similar project to rejuvenate the 606 rail trail in Logan Square (Trotter, "Chicago Awarded $1M…" The Chicago Tribune, 9/8/2016). As of December 2016, the city was also looking to hire a full-time urban agriculture coordinator, though I was unable to find a person with that job title affiliated with the city of Chicago in 2018 (Trotter, "Five Urban Farming…" The Chicago Tribune, 12/21/2016). The most recent activity on the official Englewood Line blog indicates that the last organizational meeting about the trail's development was held on January 22nd, 2016 ("Ideas abound at…").

Green Healthy Neighborhoods Plan

In 2014, the Chicago Department of Planning and Development's (DPD) Green Healthy Neighborhoods plan was adopted by the Chicago Planning Commission. "Green Healthy Neighborhoods (GHN) is a 10- to 20-year planning strategy to maximize the use of vacant land and other neighborhood resources within Chicago's Englewood, West Englewood, Washington Park and Woodlawn community areas as well as parts of the New City, Fuller Park and Greater Grand Crossing community areas"("Green Healthy Neighborhoods" 2014). The community areas accounted for in the plan contain altogether 800 acres of vacant land that could be put to productive use, including but not limited to housing, retail, green infrastructure, parks, trails, and urban agriculture ("Green Healthy Neighborhoods" 2014).

The GHN area is plagued by a number of issues: high rates of violent crime, population loss, unemployment rates twice as high as the Cook County average, as well as food deserts ("Green Healthy Neighborhoods" 2014). A food desert is qualified as an area where at least 20% of households are at or below the poverty line, and where at least one third of residents live a mile or more from a grocery store/supermarket (Ruppenthal, "New Law Requires…" Chicago Tonight, 9/18/2017). In urban areas, they tend to crop up in neighborhoods where a high proportion of households live in poverty and residents typically are not well-informed about good nutrition (Florida 2018). For Chicago, these tend to be the South and West sides of the city, which are areas that have predominantly Black populations (Ruppenthal, "New Law Requires…" Chicago Tonight, 9/18/2017). Food deserts have been linked to higher rates of health risks like obesity, diabetes, and heart disease, though that isn't the whole story (Chinni and Freedman 2017). People living in food deserts tend to experience higher levels of stress, and they tend to be less well-educated about nutrition and less experienced in cooking meals at home (Florida 2018). These conditions create a sort of iron triangle of malnutrition. According to Dr. Richard Florida's 2018 article on CityLab about food deserts, recent research seems to point to improving education as a more effective way of reducing health disparities due to obesity-related illness among urban populations living in food deserts. Increasing access to grocery stores alone does little to change people's eating and purchasing habits; better education about what constitutes a nutritious diet is also needed (Florida 2018).

To this point, the farms proposed in the GHN plan are required to provide "large-scale food production, job training, and food-related educational activities" ("Green Healthy Neighborhoods" 2014). These requirements address all three sides of the food-desert triangle: increase access to food, increase employability of participants, and increase nutritional knowledge for participants. At present, the city of Chicago is continually updating its zoning

laws and approving new sites for use as urban farms and gardens, including land in neighborhoods located outside the GHN plan. For farms that wish to be permanent, purchasing land from its owner (the city, a private owner, a developer) may be the best way to ensure the permanence of the project. Another method for land acquisition outside the GHN zone is through a mutual agreement with the city or the owner, where the land is made available for farming/gardening with the understanding that if the land is bought, existing operations will have to cease or move elsewhere. One such project is Chicago City Farm, which has made its operations semi-portable to facilitate moving in the event that the land they work on changes hands or is designated for some other use (Rich 2012, 121).

Outside the GHN area, the business entity starting the farm is responsible for managing the overhead and equipment costs, or finding outside funding to cover these costs on its own. Funding overhead costs is one of the largest obstacles in any sort of food-production enterprise of any scale (Franceschini and Tucker 2010, 65). Even individuals looking to establish a small vegetable garden on their personal property may find that supplies can add up to be quite expensive: for example, a shovel, 34 quarts bag of pine mulch, 34 quarts bag of soil, one packet of yellow squash seeds, and a single garden box set costs $188.46, based on products priced on Amazon on 4/18/2018. Adding land ownership or rental costs often makes such projects prohibitively expensive. Within the GHN area, the city of Chicago greatly reduces these costs by testing the soil at approved sites for toxins and installing water and fencing, as well as otherwise preparing the sites for use ("Green Healthy Neighborhoods" 2014).

Chicago Park District

The Chicago Park District currently has 70 community gardens established within public parks in the city ("Community Gardens" 2018). These gardens are primarily

ornamental, though there are also a number of gardens where plants are grown for food. Existing groups are invited to apply for garden space, and once the space is approved, all garden maintenance is the responsibility of the volunteers from that group. The Park district does provide some minimal protection from vandalism/theft, but since the gardens are on public property, access to them cannot be greatly restricted ("Community Gardens" 2018). The Harvest Garden Program is targeted toward educating children aged 6 to 12 about growing and maintaining edible plants on Park District garden plots and is currently offered on 16 plots. Participation in the program is free ("Community Gardens" 2018).

Neighborspace

Neighborspace is a land trust that serves community gardens and parks, and offers a number of resources to members. As a land trust, Neighborspace holds the title for all of the land where member projects reside, and accepts land that is already being used/developed for community gardening purposes: currently there are 115 member gardens listed under the "Gardens" tab of the Neighborspace website. In order to be eligible for membership, gardens must already have 14 people regularly involved, which must include "3 garden leaders, 10 other gardeners and 1 community organization partner" ("Becoming a Neighborspace Garden" 2018). Additionally, the environmental integrity and long-term viability of the project must be assessed and approved by Neighborspace before a garden is accepted ("Becoming a Neighborspace Garden"). Usually the time between application and acceptance of a group takes between four and six months, and the land acquisition process for a group that has been accepted can take up to two years ("Becoming a Neighborspace Garden" 2018).

Once a community garden is accepted by Neighborspace, they have access to a number of resources and materials that may ordinarily be quite expensive. Groups can sign up to have woodchips delivered for free by the Bartlett Tree Experts, borrow gardening tools

from the Neighborspace lending library, as well as gain access to conflict resolution guidelines, free seeds, and free signage. If a garden requires volunteers for a specific project, Neighborspace will facilitate connections between volunteer groups and gardens through their Volunteer Ready Gardens form ("Resources" 2018).

This is not an exhaustive list of the organizations and government initiatives that contribute to the functioning and development of agriculture in Chicago, but is representative of some of the largest sources of support available locally.

Permaculture Development and Planning Philosophy

Community revitalization plans like GHN fit in well with the ideas of "permaculture" development or "agricultural urbanism." These theories follow from much of the work Jane Jacobs and her contemporaries produced in the 20th century, urging planners to consider cities as organic, ever changing, somewhat self-regulating structures. They stress the importance of multi-use neighborhoods and spaces, or areas where multiple aspects of life are placed near each-other. For example, a single city block might have an apartment building, a subway stop, a small office, and a coffee shop meaning that both private and public life can all take place there (Jacobs). Generally, places where food and drink are available become either explicit (restaurants, bars) or incidental (grocery stores, corner shops) places where social life takes place, so the placement of food and food infrastructure can have strong implications for the social "feel" and the perceived strength of community (Jacobs 1961, 152-153).

Urban farms have something of a special role within the general function of a city. They serve as social and educational spaces but are not necessarily essential to the functioning of the city. A city with no urban agriculture could, in theory, function well enough to meet all the citizen's needs, but a city without any supermarkets, restaurants, and other food-centric places likely could not do so: "people in cities need access to healthy food,

but food production has never been a primary function of cities" (Hemenway 2015, 6). However, urban agriculture can improve that function of providing access to healthy food, especially in areas where the businesses normally responsible for filling that role are inadequate or absent in community has been shown to produce multiple benefits, both for individuals and potentially for neighborhoods, depending on the structure of the farm or garden. Litt et al enumerate these "levers" for social improvement in their 2015 paper. Even though the community gardens in Litt's study were not necessarily farms, they still fit with the permaculture urbanism principle that design features should have multiple functions, and that features should reinforce each other's functions (Hemenway 2015, 22). In this example, the community garden may support the function of the coffee shop by providing the social impetus for neighbors to gather together and socialize, which is one of the primary functions of the coffee shop.

Janine de la Salle and Mark Holland's handbook on agricultural urbanism establishes 10 basic principles that food models in urban spaces ought to adhere to, such as increasing access to food, pushing education about food, constructing sustainable infrastructure for both food and agriculture, and creating a rich experience around food (2010, 31-32). Urban farms follow many of these recommendations, those located in the GHN area in particular as they are required to offer educational programming and job training, thus uniting multiple functions in place. de la Salle and Holland also recommend clustering food outlets and integrating food-related land uses, which farm stands and farmers markets accomplish well as they are usually located relatively near the production site of the food they sell(2010, 32-34).

Benefits of Urban Agriculture

Mental health benefits have been linked with gardening since the World War 2 Victory Garden campaign, and these benefits were further solidified by Rachel Kaplan's

1973 paper, “Some Psychological Effects of Gardening” (Litt et al, 2015). Participation in agricultural activities has been shown to have therapeutic emotional effects along with the demonstrated positive impact that gardening activities can have on community building, stress relief, diet, and neighborhood aesthetics (Litt et al, 2015).

Both ecological and man-made parts of a landscape can impact the interactions people have with a place, and both community gardens and urban farms necessarily contain a mixture of both types of elements. Many places can elicit a feeling of attachment and ownership in people, especially if there is a sense of that place being a part of one’s community (Kaplan et al, 1998). In urban areas, both community gardens and urban farms are subject to size restrictions as discussed in the “Rules and Restrictions on Urban Agriculture” section of this report. However, a small place can still be highly valued by the people who interact with it, especially if the place contains something aesthetically pleasing, if there is potential for exploration, or if the place presents an opportunity for people to exercise an element of ownership over it (Kaplan et al, 1998). Community gardens have the potential to fulfill all of those requirements as they generally allow anyone who agrees to follow the rules of the garden to participate in the planting and care of the garden. Kaplan also speaks of how a feeling of enclosure can lend a feeling of privacy and seclusion. Most community gardens are enclosed to some extent, largely to prevent theft and to delineate where the garden begins and ends (“Community Gardens,” “Resources”). The enclosure itself contributes to the feeling of a place being distinct, as well (Kaplan et al, 1998).

Community gardens contribute to the availability of restorative, green spaces that Platt called for in 1971: cities should contain spaces that provide for leisure activity within their limits. Hale et al explore the benefits of community gardens with regards to aesthetics in their 2011 paper, “Connecting food environments and health through the relational nature of aesthetics: Gaining insight through the community gardening experience.” They establish

environmental aesthetics as a combination of "engagement and cognitive interpretations," and name urban gardens as productive landscapes that lower barriers to food access and increase opportunities to practice healthy lifestyle choices (Hale et al, 2011). Twenty per cent of the participants in their study were living below the national poverty line at the time of data collection. The gardeners reported feeling that they were able to escape from the heat, noise, and pressures of the city in their gardens. They also shared stories of community-building behavior, such as sharing advice and surplus food with fellow gardeners. The beauty of the garden was also important, with participants feeling that their community garden contributed positively to the overall appearance of their neighborhood. Also important was that gardening changed the participant's relationship with food: vegetables were no longer "yucky," but were rather the fruits of weeks of work and care, and people stated that they thought the vegetables they grew in their gardens tasted better and seemed fresher than those they might have bought in a grocery store (Hale et al, 2011).

Although the Hale et al study focuses on community gardens, many of the results seem as though they could also be expected from urban farms, especially those farms that run educational programs and host local volunteers. And because urban farms in Chicago are allowed to exceed 25,000 square feet, they can potentially engage more people than community gardens can ("Urban Farming FAQ," Kaplan et al, 1998).

In 2015, Litt et al performed a similar survey study of community gardeners in Colorado. They, too, claim that gardening both promotes social and civic development as well as impacts self-reported health and neighborhood attachment. They suggest community gardens serve as a force for building "collective efficacy," which inspires people to intervene on behalf of the common/community good and is based on mutual trust and shared expectations among community members (Litt et al, 2015). For example, people involved in community gardening also tend to be involved in civic life and other public projects (Litt et

al, 2015). Litt's team determined that the proximity of one's home to green space (not necessarily a community garden), can positively impact perceptions of loneliness and social support. People whose homes were 1 kilometer away reported the strongest positive feelings, and those living 3 kilometers or more away from green space were found to reap no social benefit (Litt et al, 2015).

Urban farms, along with potential aesthetic benefits, also provide supports in terms of economic opportunity and food access. Cities in the US and around the world import foods from thousands of miles away even if a steady source of the same food exists close by. For example, the UK exported more milk than it imported in 1996, which hardly seems efficient ("How far does your food travel…"). This is a global trend. Four times as much food is being shipped between countries as there was 40 years ago, which means that more fossil fuels are being expended in order to ship food, and more food is at risk from contamination and spoilage due to long-distance travel ("Globetrotting Food…"). This far-flung model of sourcing food contributes to the difficulties of small retailers in both urban and rural settings. The high shipping costs mean that larger grocery chains and restaurants can more easily afford conventional food. The losers are poor consumers, both urban and rural ("Globetrotting Food…"). In Chicago this is of special concern, as 22 community areas in the city contained food deserts in 2012, meaning that there was not a single large grocery store or supermarket within 29% of Chicago's 77 community areas (Eadens 2017).

Urban farms present a possible solution to this problem, as many of these businesses sell their produce both at local farm stands and at local farmer's markets, thus reducing the distance that food needs to travel before reaching consumers. For example, the 61st Street Farmer's Market in Chicago features sellers only from Wisconsin, Michigan, and Illinois ("Get Involved" 2018). The Plant Farmers Market exclusively features Chicago farms/vendors such as the Urban Canopy and Star Farm Chicago, and six of the producers

that sell at their market grow their produce on the Plant's property ("Farmer's market" 2018). CUESA compared the average distance that different produce items travel to reach 1) a Chicago distribution center and 2) a California farmer's market, and found a large disparity between the two. For example, apples must travel 1,555 miles to reach the distribution center, but only 117 miles to reach the farmers market. Grapes travel 2,143 miles to the distribution center and 134 miles to the farmers market ("How far does food…" 2018). Urban farms can help to reduce the distance that food must travel from farm to plate by increasing local food production for urban markets. When urban farms are located in food deserts, they can mitigate the harm done by inadequate grocery store access by decreasing the distance that people must travel to access fresh vegetables and selling fresh food at prices uninflated by transport costs ("Globetrotting food…" 2018).

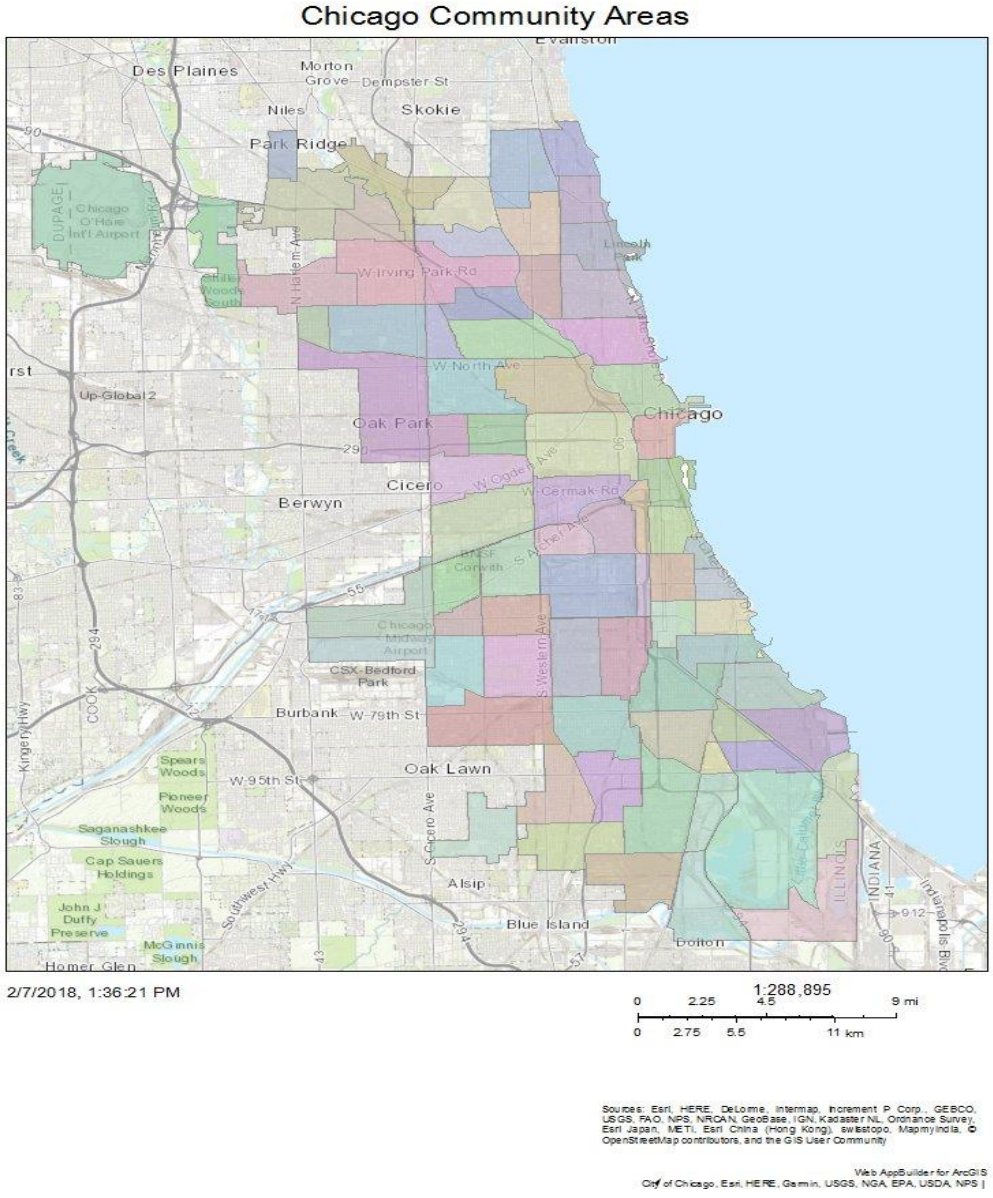
Some urban farms host educational programs, similar to those hosted by some community gardens, as well as internships and job training programs. For example, the Angel Organics Learning Center hosts workshops led by professional farmers. The workshops aim to educate urban and suburban people who are interested in farming, either privately or commercially, on best practices for everything from selecting crops to sales strategies (Franceschini and Tucker, 2010). Windy City Harvest, which is hosted by the Chicago Botanic Gardens, offers an apprenticeship program focused on developing beginner farmers. The program enrolls up to 20 people per year and includes a 14 week paid internship, among other programs ("Windy City Harvest Apprenticeship" 2018).

The link between urban farms and farmer's markets is particularly important in Chicago, as there are currently 53 farm stands and farmers markets that accept Illinois Link, the state food stamp program ("Farmers Markets that Accept…"). This makes these food items, many of which are both local and organic, more accessible to people with low incomes, while also expanding the market for these types of food items. Increasing the

market for food from urban farms means that productive landscapes within the city will receive more financial support.

Chicago Human Geography and Agriculture Distribution

Map 1: Chicago Community Areas



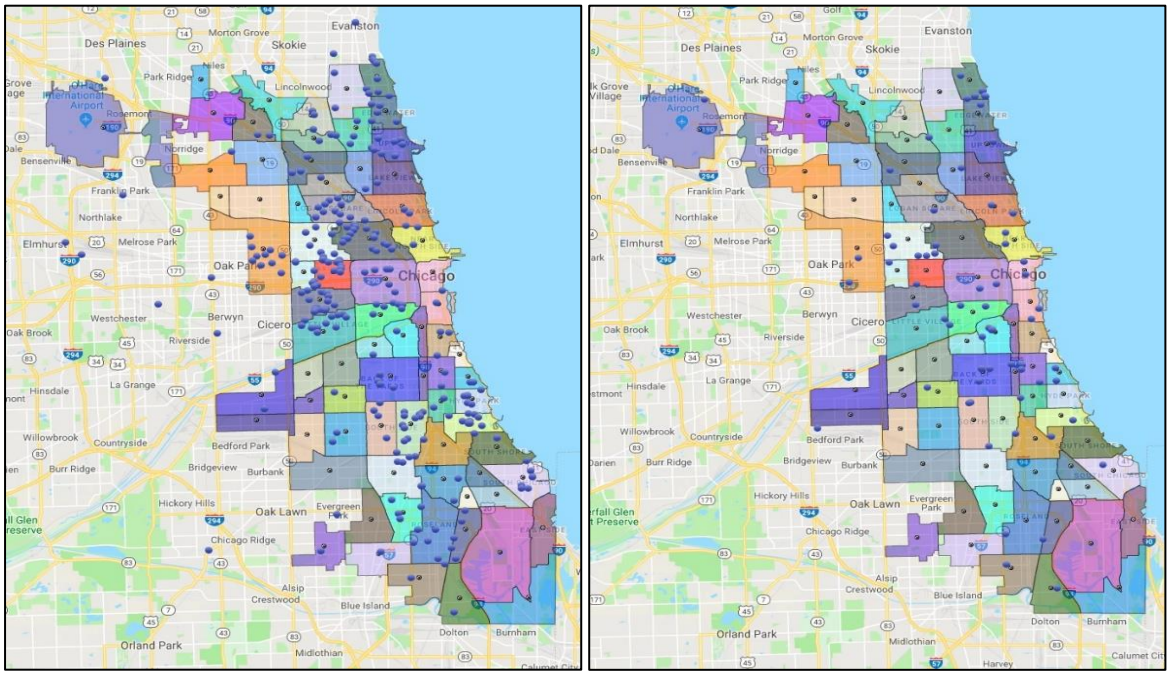
Source: City of Chicago, Esri, HERE, Garmin. “Chicago Community Areas.” 2010.

Description: Each colored segment represents a different community area, and the community areas fill the city limits.

Chicago is split into 77 official community areas, each of which can contain several neighborhoods. For example, the Lakeview community area contains the Lake View East, West Lakeview, North Halsted, and Wrigleyville neighborhoods ("Chicago Neighborhoods" 2018). "(Community area) boundaries do not change over time (as political boundaries do), so that information about the city can be consistently collected and analyzed over long periods of time." ("Chicago Ward, Community Area…" 2018). Map 1 above shows the boundaries of Chicago's community areas.

Map 2: Distribution of Urban Agriculture Projects in Chicago

(A) (B)



Source: Chicago Urban Mapping Project, 2018

Description: These maps show Chicago's community areas outlined and filled in different colors. Each blue dot represents a single urban agriculture site. (A) shows the distribution of community gardens in Chicago, n=253, excluding dots outside the city limits. (B) shows the distribution of urban farms in Chicago (excluding rooftop farms), n=73.

Both community gardens and urban farms are abundant in Chicago, with representation in nearly all of Chicago's 77 community areas. There are 253 community gardens and 73 urban farms within the Chicago city limits (Chicago Urban Agriculture Mapping Project). Across the city, community gardens tend to appear in a more clustered pattern, whereas urban farms are more spaced out from one and other. These distributions can be seen in the Map 2 above. The Far South and Northwest sides have the least urban agriculture representation of either type, and the West side has a great number of community gardens. The low level of urban agriculture representation in the Loop and the Near Northside community areas is not surprising because these areas are highly developed and have little open green space.

Unfortunately, I was unable to find recent map of where food deserts are located in Chicago, though as of September 2017, Illinois is now required to keep track of food deserts within the state (Ruppenthal, "New Law Requires Illinois…" Chicago Tonight).

Agriculture in Urban Soils

Urban agriculture projects that take place in urban soils must often operate according to the use history of their site of operations. Open space in urban areas may have formerly been used for residential, transportation, commercial, industrial, waste management, or other uses. Each of these has a distinct impact on the soil, even many years after its use has changed. A map of 2017 zoning designations in Chicago can be seen in Appendix 1.

Land that was formerly residential potentially has high concentrations of lead, typically from the lead paint used in houses before 1978 ("Reusing Potentially Contaminated…" 2011, 3). Former sites of industrial and commercial buildings are also possible sources of lead contamination, as well as solvents, petroleum wastes, asbestos, polycyclic aromatic hydrocarbons (PAHs), and other heavy metals besides lead, such as

mercury and chromium (Kessler 2013, A328). Roadways and parking lots tend to leave behind petroleum products and lead, while former parks and recreational outdoor areas often have pesticide residues (Kessler 2013, A328).

There are multiple routes for these contaminants to enter human bodies, especially when performing agricultural tasks. Gardeners risk breathing in dust or accidentally ingesting soil as they tend their crops or if they fail to properly wash produce after it has been harvested ("Reusing Potentially Contaminated…" 2011, 5). Fortunately, most fruiting crops (such as tomatoes, squash, apple trees, and berries) do not sequester these soil contaminants in the edible parts of the plant; normally roots contain the majority of absorbed contaminants ("Reusing Potentially Contaminated…" 2011, 5). For this reason, root vegetables should only be grown in soils with low concentrations of contaminants, and it is important to wash thoroughly and/or peel vegetables that are grown in urban soils. Removing soiled gardening clothes before walking home and applying mulch to exposed dirt walkways between beds can also reduce exposure to dust ("Reusing Potentially Contaminated…" 2011, 6).

Fortunately, there are ways to find out what sorts of contaminants are present in soils with agricultural potential, as well as methods to mitigate exposure of both plants and humans to soil contaminants. The EPA's 2011 report on using contaminated soils recommends a two-part Environmental Assessment to determine both what types of contaminants are present and in what concentration ("Reusing Potentially Contaminated…", 4). According to the report, a Phase 1 assessment consists of a review of site use history by a "trained environmental professional" to determine the likelihood of contamination, while Phase 2 consists of soil sampling to determine which contaminants are present in the soil and in what concentrations (4). Upon discovery of soil contaminants, gardeners have a number of risk-mitigating measures at their disposal. Soil tests can be quite expensive, with estimates ranging from $65 to over $250 for a single soil sample, depending on the number of

contaminants tested for. Additionally, it is usually necessary to test more than one section of a site because pollutants usually appear in a patchwork fashion (Kessler 2013, A328).

On a site-wide level, raised garden beds filled with uncontaminated soil may be installed or the contaminated soil can be completely removed and replaced, though the latter option can "cost thousands of dollars, even for a small yard" (Kessler 2013, A331). A cheaper alternative is to cover the existing soil with a barrier of fabric and then re-cover everything with uncontaminated soil (Kessler 2013, A331). City Farm, a semi-mobile urban farm in Chicago, implements a similar method by covering their lot with a 6-inch thick layer of clay (which is impermeable to water) before installing soil on top. If the farm needs to move, the clay can simply be rolled up and relocated (Rich 2012, 122). Adding soil amendments can be adequate in soils with lower concentrations of contaminants, and choosing appropriate amendments can also impart desirable characteristics, such as aeration or increased nutrient levels, to the soil ("Reusing Potentially Contaminated…", 6). Table 2 offers a list of a few soil amendments and their characteristics as described by J.G. Davis and D. Whiting from the Colorado State University Extension. It should be noted that "organic" in this table refers to matter containing carbon, and "inorganic" refers to matter containing no carbon.

Table 2: Soil Amendments

Amendment	*Benefits*	*Drawbacks*
Wood Ash	acidic, contains organic matter	draws nitrogen from soil
Sand (inorganic)	increases soil permeability	low water retention
Pearlite (inorganic)	increases soil permeability	low water retention
Biosolids	contains organic matter	high salinity, potentially high pathogen content
Plant-based compost	low salinity, organic matter	expensive
Manure-based compost	organic matter	high salinity, risk of pathogens and ammonia if not properly produced
Sphagnum Peat	acidic, high water retention	must be imported from Canada

Source: J.G. Davis and D. Whiting, 2013.

Amendments should be applied based on the characteristics a gardener wishes to impart on their soil. For example, sandy soils benefit from the addition of sphagnum peat as it increases water retention. Adding amendments to contaminated soils helps to dilute the concentration of the contaminants, and can even reduce the ability of plants to take up undesirable chemicals. For example, amending lead contaminated soils with compost can reduce lead uptake in plants by up to 30%, and the addition of phosphorous makes soils safer by speeding up the formation of insoluble lead compounds like pyromorphate (Kessler 2013, A330).

All of these factors need to be taken into account in both farms and gardens that operate in urban soils, to protect the health of the farmers, consumers, and people that frequent the area near the agriculture site.

Methods

My goal with this project is to gauge the personal impact of involvement with an urban agriculture program on participants. Through my interviews with individuals involved with multiple aspects of urban farming initiatives, I was able to draw some snapshots of the impact of urban agriculture on quality of life for program participants and program organizers.

I identified urban agriculture projects to include in my study through general internet searches, literature citations, and recommendations from friends, acquaintances, and professors. I was hoping to include urban agriculture projects both from inside and outside the GHN area, which I was ultimately able to do. Next, I gathered contact information from organization's websites and social media platforms to reach out and see if there were any experienced members of the organization who would be willing to speak to me. I reached out to 13 people across 8 organizations, received initial responses from 7 people across 4 organizations, and was able to conduct interviews with 3 people across 3 organizations. In sum, my recruitment success rate was 23%.

In cases where organization or individuals wished to remain anonymous in my report, I created a key to separate identifiers from data, and stored those documents in separate files in UChicago Box. Since some participants wished to remain anonymous but others did not, I simply chose to make all three respondents anonymous in my analysis for the sake of uniformity.

I prepared a set of questions for each interview, but I preferred to allow the conversation to take its course and then extract information relevant to the study. If a participant was unable to meet in person, they were offered the option of conducting the interview via email or over the phone. In practice, I only carried out in-person and phone interviews. I was also invited for one site visit. If a participant had preferred to be interviewed by email, a preset group of questions would have been sent.

The interview questions I posed are as follows:

1) What is your relationship/role within this urban farm/community garden?
2) When did you become involved with (X) farm/garden and in what capacity?
3) Are you a resident of the community that the farm/garden serves?
4) What services or programing does (X) farm/garden provide?
5) When do you think it is easiest for other members/program participants to have access to fresh fruits and vegetables?
6) Which aspects of your life have changed the most as a result of your involvement with the farm? Is that what you expected?

I was able to conduct three in-person interviews and one phone interview over the course of my study, one with the manager of a community garden, who I shall call Participant 1, and two with urban farm employees, who I shall call Participant 2 and Participant 3. The community garden (Participant 1) and one of the urban farms (Participant 2) was located on the South Side, both in areas where the community is predominantly Black, and second urban farm is located on the North Side, in an area where the population is predominantly White. Both Participant 1 and Participant 2's projects are in the region being developed under the Green Healthy Neighborhoods Plan (2014). Unsurprisingly, the participants gave distinctly different answers to nearly all of the questions, as each organization has a distinct purpose.

Results

Participant 1 has been involved with their community garden for over a decade, and is involved with other community agriculture efforts as well. They hold a leadership role within their garden, which has been a part of the Neighborspace land trust for a number of years. Participant 1 has been a resident of the community that their garden serves for 3 decades, and has witnessed firsthand the changes the neighborhood has undergone in that time, as well as changes in garden membership. Participant 1 takes charge of such responsibilities as membership retention, farm maintenance, and sustaining collaborative efforts with other nearby community gardens. The garden they manage does not provide any classes or official lessons for members or community members, preferring instead to allow gardeners to share knowledge amongst themselves in a more organic fashion. Participant 1 did mention that other gardens nearby provided classes on best practices for gardening and composting. The plots themselves are in raised beds to improve the quality of soil that plants are grown in. The care of the garden takes a similar form, with no maintenance tasks being assigned to any particular member, but discounts on the membership fee are offered to those who attend garden work days. Participant 1 stressed that many gardeners feel a sense of accountability for the well-being of the garden and its overall appearance, though there is one particular member who generally takes care of the garden's communal lots. Other lots are for private use, and the membership fee structure is loosely based on the amount of space each person or group uses per year.

As for the food accessibility component, Participant 1 felt that they were able to access fresh fruits and vegetables, and high quality food in general regardless of whether the garden was in production mode, but they felt that other members of the garden were very much reliant on the garden for personal food consumption. They described how an elderly immigrant couple, with help from the rest of their extended family, uses their garden plot to

grow the majority of the produce they consume. Parents often bring their children along to the garden with them, and Participant 1 felt that the garden provided a space where the members could feel respected and share their knowledge of gardening both with their own family members and with other members of the garden.

Participant 2 is an employee of an urban farm, which they have been involved with for a number of years and with which they have held several jobs. Most recently, their responsibilities include training production assistants and teams of program participants, as well as overseeing planting and production of the over 100 crops that the farm grows. Participant 2 is not originally from the same community area where the farm is located, but was initially drawn to the farm by its job training program. According to Participant 2, a main focus of the farm's outreach programs are to empower the people living in the community to feel comfortable growing, preparing, and cooking their own vegetables. Participant 2 spoke about the lack of knowledge in the farm's community about what constitutes healthy eating habits, and referenced the farm's cooking demonstrations as a partial solution. The farm also offers a multi-week job training program for those looking to become involved in food industries. Participant 2 mentioned the value they found, and that others had expressed, in the work of tending plants in the field. They felt that field work and the high-scale production of quality vegetables were a foundational part of the farm's operations.

The urban farm that Participant 2 is a part of has a 10-month growing season, thanks to greenhouses and other farming technologies. This allows employees, customers, volunteers, and program members to have access to organic produce through the farm for the majority of the year, though the peak growing season, during the summer, presents the greatest variety of produce. Participant 2 was happy about the fact that their job allowed them to help the people living in a food desert to take control over their own nutritional needs, and

hopes that urban faming efforts like these will help to reduce the prevalence of lifestyle diseases such as diabetes.

Participant 3 is also an urban farm employee, with a history of various jobs in urban agriculture. They were involved with this particular urban farming project for about a year. Their responsibilities included, seed planning and planting, harvesting, composting, tracking demand, coordinating volunteer groups, and farm maintenance among other duties. Participant 3 made the initial connection with the urban farm through word of mouth, and performed the same function/had the same relationship with the farm for the entirety of their tenure there. They were not a resident of the same neighborhood where the farm was located, and many of the volunteers who came to work on the farm were also from outside the neighborhood. Produce could be acquired from the farm by purchase at their farm stands and farmers markets, and the farm also serves as a supplier to a few nearby restaurants. Participant 3 did not state whether or not they used the urban farm as a primary source of produce. The farm accepted volunteer groups from and offered tours of the farm to Chicago schools, and hosted a diversity of volunteers on a weekly basis. The farm has a CSA, or community supported agriculture program, which allows people to subscribe to receive produce from the farm at regular intervals. Overall, this farm was more focused on the production and sale of their produce, with community activities as a secondary benefit.

Discussion

The information gathered from these three interviews demonstrates both the contrast between the social, nutritional, and educational functions provided by each project. All three sites provide access to foods grown without the use of pesticides, though the two urban farms are able to distribute their food on a much larger scale. The community garden does not distribute food for sale. All three participants mentioned some aspect of education or

knowledge sharing, though Participant 2's farm was the only group with formalized classes and demonstrations. This educational programming covers a wide variety of topics and serves a draw to people outside the immediate community, as evidenced by Participant 2's participation. However, it should be noted that both Participant 3 and the volunteer groups they mentioned were drawn to Participant 3's farm from outside the farm's community area, despite the lack of formal programming at the time. This may simply be a testament to the positive public perception of urban agriculture or the personal benefits of gardening.

Participants 1 and 2 spoke about the skills and increased self-sufficiency that participants of their respective projects gain through learning about how to garden for themselves, while Participant 3 did not make this connection. Participant 3 made it sound as though the majority of the volunteers on the farm were there short-term or only for the day, so the potential that they would learn all of the processes involved in establishing and maintaining a garden is lower. However, it is remarkable that all 3 projects draw participants from neighborhoods outside the immediate community despite differences in outreach structures, or rather the robustness of outreach programs at Participant 2's farm compared to the other two projects. All three Participants said that they believed their project helped people to access fresh, organic produce, but Participants 1 and 2 stressed that people of color and people with low-incomes were being helped. Participant 2 spoke about the importance of the nutritional education measures hosted by their farm. These two points strike me as important when considered in conjunction with Florida's article, "It's Not the Food Deserts: It's the Inequality," which discusses how increasing access to fresh vegetables has proven to be less effective than increasing education about healthy eating and living habits at changing food purchasing habits (2018). Increasing fiber by one gram per 1000 calories purchased can reduce the risk of Type 2 Diabetes by up to 9.5% (Florida 2018).

Interestingly, none of the three participants stated aesthetics as a primary benefit of their urban agriculture project. This is likely because all three respondents were from organizations focused on producing edible plants.

Study Limitations

The largest obstacle I faced in conducting this research was the low response rate among organizations that I wanted to include in this study. A secondary obstacle with community gardens was difficulty with finding an adequate method of contact. A number of community gardens did not have up-to-date websites, or any distinct website for the garden at all. In cases where an organization, such as a church, listed that it also hosted a community garden on its website, I tried to contact the general email address or Facebook page, but this was largely unsuccessful. Urban farms, on the other hand, tend to have more robust web presences, sometimes with an official contact form or the email addresses and phone numbers of multiple employees. However, even urban farms had a low response rate. A few initial connections I made eventually fizzled out due to difficulty in scheduling the interview itself. I believe the low response rate stems largely from two factors. The first is that community gardens often do not have staff, so it may not be any one person's explicit responsibility to respond to inquiries like mine. Second, I made most of my inquiries during the winter months, mostly in late January through the middle of March, a time in Chicago when most outdoor farms and gardens go dormant. I suspect that organizational email addresses are checked less often during this time of inactivity.

A second limitation was the lack of centralized, aggregated information about Chicago urban agriculture. The city of Chicago has rather scant information on the state of urban agriculture on their website, including evaluation reports on official city initiatives. For example, both the Green Healthy Neighborhoods Plan and the "Growing for Chicago"

program (funded by $1 million of federal through the USDA's Conservation Innovation Grants) had neither publicly visible program evaluations/progress reports, nor any report of how funds were allocated. I find this problematic, especially since both projects were purportedly started several years ago, and because the Conservation Innovation Grants are funded with national money (Trotter 2016).

Recommendations and Conclusion

Based on the benefits of urban agriculture touted in the literature, the issues of food accessibility facing many Chicago neighborhoods, and the responses of the interviewees, I have determined that urban agriculture projects are beneficial to both the communities where they reside and people living in other areas of the city. In this section I will offer some recommendations as to how the city of Chicago and the state of Illinois, along with independent organizations and federal agencies can better support urban agriculture in Chicago.

The City of Chicago should publicly release, at regular intervals, reports and allocative documents on the progress of government-funded urban farming projects. As I was conducting research on the progress of both the Green Healthy Neighborhoods plan and the "Growing for Chicago" initiative, I found little to no official documentation from the city about either project. The information I was able to find on the Green Healthy Neighborhoods plan came from the Department of Planning and Development's official write up published after the plan was adopted by the Planning Commission, while information about "Growing for Chicago" came from a few newspaper articles in the Chicago Tribune and the official blog of the Englewood Line trail. The USDA had better documentation on the Conservation Innovation Grants as a whole, but I was unable to find records on how the grants were used once awarded. Keeping track of expenses for urban agriculture projects will keep the city and

the project managers accountable to Chicagoans, while also allowing for mid and post completion evaluations that could boost efficiency.

The Illinois EPA should adopt and enforce its own a standard for acceptable lead levels in agricultural soils, including soils used for urban farming and community gardening. US EPA has recommended a standard of 400 ppm of lead in soils used recreationally, and this standard has been accepted as safe by urban gardeners in many areas (Kessler 2013, A329). However, the states of Massachusetts, California, and Minnesota advise not gardening in soil with lead content over 100ppm, and I recommend that the state of Illinois adopt the same standard in order to keep both farmers/gardeners and consumers safe and free of health issues. Furthermore, I recommend that Neighborspace continue its free soil delivery service to the gardens in its trust, as this eases the cost burden of replacing contaminated soil or installing a raised bed model ("Resources" 2018). The city of Chicago might also consider expanding the soil testing services offered free of charge through GHN to community gardens and non-profit urban farms in all areas of the city. If offering tests for free is too expensive, providing discounted tests may still empower urban agriculture project managers to test their soil more thoroughly and be able to provide safer produce to their consumers.

Third, I recommend that Illinois continue to allow the use of Illinois Link cards at farmer's markets ("Farmers Markets that Accept…" 2018). I also recommend a public information campaign to raise awareness of this functionality and to raise awareness of farmer's market locations in the Chicago. A possible model for this could be a short-term campaign focused on CTA Buses and El trains. Temporary posters could be printed showing the route stops as usual, but stops located near farmers markets or farm stands that take Illinois Link could be demarcated with an icon and the market/stand's hours of operations. Markets and stands that wish to be included on this map could be charged a small fee for inclusion on the map, which would help to offset the cost of designing, printing, and

installing the maps. This could have the added benefit of raising awareness of market locations for people who do not use Illinois Link, as well, and might encourage intra-city tourism as people visit different markets.

Finally, I recommend that the educational programs hosted by some urban agriculture organizations be expanded through partnerships with Chicago Public Schools. This program would likely be most successful as a volunteer-based system, with both schools and urban agricultural organizations signing up to matched with each other. Once matched, the school might have an assembly or have select classes take a trip to the agricultural site. This sort of relationship already exists in some instances, such as the school tours given by Participant 3's farm. If an official framework existed, hosted on the City of Chicago website for example, to facilitate these sorts of connections between agricultural organizations and schools, it might boost the participation of children in initiatives like this and begin to close the gap in food and nutritional education that can later lead to the health problems described by Florida (2018).

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Participant 2. 2018. Interview with Anonymous Participant 2In-Person.

Participant 3. 2018. Interview With Anonymous Participant 3Phone.

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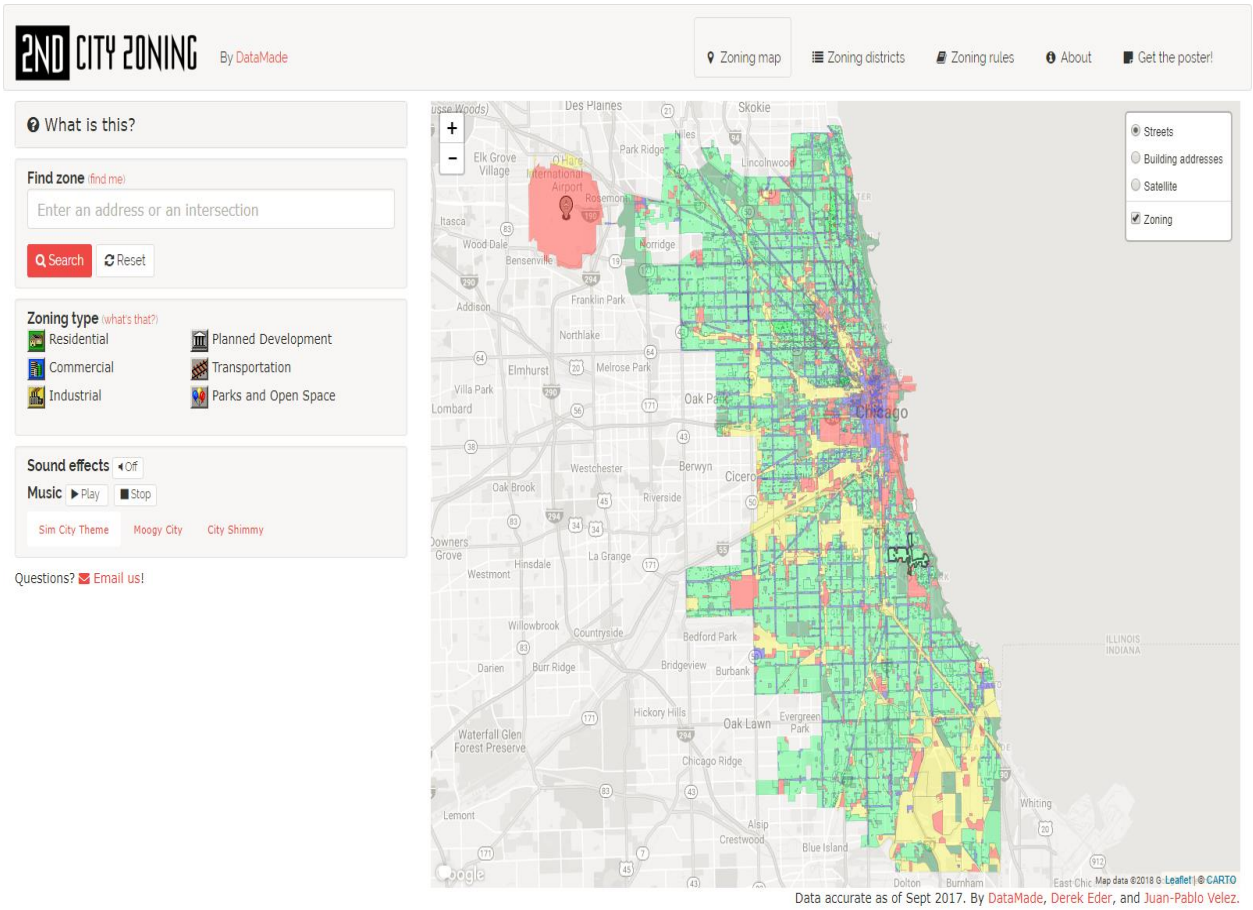
Appendix 1



Zoning map of Chicago made by 2nd City Zoning. Yellow sections represent land currently zoned as industrial. Blue segments represent land currently zoned as commercial.

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Education

The University of Chicago

Bachelors in Biological Sciences and in Public Policy — June 2018

Relevant Coursework: Intermediate GIS, Critical Perspectives of Agrofood Systems, Policy Implementation

Professional Experience

Policy Intern — June-August 2017

The Environmental Law and Policy Center, Chicago, IL

- Extracted vital program characteristics from 17 state plans for community solar; created a comparison document for internal use.
- Produced, as part of a 6-person team, the 2017 Illinois Clean Energy Supply Chain Report for presentation to IL lawmakers. Interviewed over 100 companies; wrote short profiles for 2.
- Documented air quality data in 6 Chicago neighborhoods. Edited training materials for participants.

Research Assistant — August 2016-February 2018

StarX Allergy and Asthma Center, Springfield, NJ

- Analyzed pollen count data from 48 states to create a national database spanning 63 years. Integrated data from paper and digital sources.
- Investigated granularity of pollen counting sites in US. Findings presented at annual conferences for the AAAAI and the ACAAI, abstract published in Journal of Allergy and Clinical Immunology.

Education Intern — June-August 2015

Raritan Headwaters Association, Bedminster, NJ

- Developed and led lessons for the WaterWays education program at the Greater Newark Life Camp, which taught campers aged 7 to 14 about watersheds, water quality, and macroinvertebrates commonly found in New Jersey streams and rivers.
- Supported Nature Day Camp activities (hiking, scavenger hunts, arts and crafts, catching stream macroinvertebrates) for children aged 3 to 10 years old.

Student Fundraiser — July 2017-Present

Ruffalo Noel Levitz, Chicago IL

- Reach out to alumni of all University of Chicago programs; encourage philanthropic giving to institutional funds.
- Support relationship between alumni and the University, inform alumni of class events and reunions.

Professional Service

Co-Director — June 2015-June 2016, September-November 2017

UChicago Climate Action Network, Chicago IL

- Organized politically-active group of 30 students on environmental action at UChicago and Illinois.
- Collaborated with other environmentally active groups in order to collaborate on events and activities such as film screenings, talks, presentations, and canvassing.

Publications|Conferences|Public Outreach

- Conference, American College of Allergy, Asthma and Immunology, Boston; *Effects of Time and Temperature on Pollen Counting in the US*. **J Jones,** P Wagle, L Bielory. 2017.
- Conference, American Academy of Allergy, Asthma, and Immunology, Atlanta; *Pollen Counting Sites in the United States from 1963 to 2016.* L Bielory, **J Jones.** 2017.
- Abstract, Journal of Allergy and Clinical Immunology; *Pollen Counting 1963-2016.* L Bielory, **J Jones**. 2017.
- Featured, "8 Young Environmentalists on why OUR Generation has to Save the Planet." *Teen Vogue.* April 15, 2016.

Skills| Activities|Other Experience

French (Proficient; French 203, 205, Study Abroad in Paris 2016)

Microsoft Office, STATA, ArcGIS (Intermediate GIS)

French and Math Tutor (September 2015 to September 2017)

Rower with UChicago Crew (October 2014 to Present)