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# **Food Insecurity and Spatial Inequality in Philadelphia's Lower-Income Neighborhoods: Analyzing the Role of Community Gardens**



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## EXECUTIVE SUMMARY

As a member of the Pennsylvania Green Growth Partnership (PAGGP), the Center for Sustainable Communities at Temple University (CSC) has conducted a study in Philadelphia's lower-income neighborhoods with the following two primary objectives:

- Analyze the issues of community food insecurity and hunger in the City of Philadelphia
- Analyze the contribution of community gardens, urban farms, and Community Based Organizations (CBOs)/ Community Development Corporations (CDCs) in providing fresh food access and alleviating food insecurity and hunger

The study first looked at the issues of hunger and spatial inequality (in terms of accessing fresh food) in many Philadelphia neighborhoods. A Geographic Information Systems (GIS) based spatial analysis was conducted to find neighborhoods that face the issues of food insecurity. The analysis included data on the following categories: food cupboards, community gardens, urban farms, supermarkets, farmers markets, grocery stores, convenience stores, and data collected by the Southeastern Pennsylvania Household Health Survey. This analysis showcased the co-occurrence of poverty, hunger, land vacancy, absence of supermarkets and grocery stores, and informal means to fresh food access at the neighborhood scale. Such co-occurrences were mostly concentrated generally in the North, West, and South sections of Philadelphia.

Secondly, the study paid particular attention to the role that urban agriculture programs have in reducing inequality found in the aforementioned neighborhoods. A city-wide survey was conducted to better understand the impact of urban agriculture at the neighborhood scale. Analysis of the data included the following: (i) understanding the models of urban agriculture, (ii) identifying the primary garden participants and recipients of locally produced food, (iii) analyzing how local food is distributed in disadvantaged neighborhoods, and (iv) understanding how community agriculture projects were evolved and engaged in their neighborhoods. Major findings from this analysis are listed below.

- Three primary models of urban agriculture exist in Philadelphia: the traditional community gardens, the entrepreneurial urban farms, and urban agriculture supported by CBOs or CDCs.
- Three different modes are used to distribute food throughout the city: informal distribution, sales, and donation.
- Community gardens are located in all of the 12 Planning Analysis Zones of the City, but mostly concentrated in neighborhoods experiencing the greatest level of food insecurity.
- Community gardens draw a large portion of their participants from their surrounding neighborhoods.

The report concludes with a discussion based on ten follow-up interviews with garden organizers. The topics discussed were based on either further dialogue about the initial survey results, or issues raised by the interviewees. The topics included the following:

- Agreement/disagreement with the statement, as included in the survey: *“Philadelphia’s community gardens help providing fresh food access and alleviating food insecurity and hunger in lower-income neighborhoods.”*
- Economic contribution of urban agriculture
- Accessibility to urban agriculture

A number of garden organizers expressed that one of their most important impacts in Philadelphia’s underserved neighborhoods was achieved by creating knowledge of local produce for a generation unfamiliar with the production of food. Gardens are also creating indirect economic opportunities for their neighborhoods through hands on training in a professional setting. A variety of transferable skills are assisting teens to find gainful employment through various garden programs.



Planting at Broad and Norris

*Photo: Temple Community Garden Facebook Page*

## INTRODUCTION

As a member of the Pennsylvania Green Growth Partnership (PAGGP), the Center for Sustainable Communities at Temple University (CSC) has conducted a study analyzing the issues of community food insecurity and the role of community gardens in the City of Philadelphia. The PAGGP was founded in 2006 by the Green Building Alliance in Pittsburgh and the Engineering and Design Institute at Philadelphia University. The funding was provided by the Pennsylvania Department of Community and Economic Development. The PAGGP Research Network was created for the academic and non-profit community to collaborate, share information, and learn about each other's work. Since 2006, the CSC, which is a partner of the PAGGP Research Network, has been awarded three grants to conduct research studies. This report is based on the third and final study that was completed during 2010-2011 academic year.

Food insecurity, hunger, and spatial inequality exist in many lower-income urban neighborhoods. In addition, the historic land use changes have had important impacts on urban natural systems and the foodshed. Increasing productivity of the foodshed can be achieved without further adverse impacts to the urban and regional ecosystem. Many old industrial U.S. cities are trying to address food insecurity issues by providing better access to healthy food and emergency hunger relief to their most vulnerable residents. These residents live in neighborhoods that are poor and blighted by vacant lands. However, community gardens and urban farms, which have been primarily developed in such vacant properties, are important agents of urban food systems and unique examples of overall urban sustainability and community development. Within this context, we explored and analyzed the importance of community gardens in addressing the issues of food insecurity, social justice, community organizing, and land management practices in many lower-income neighborhoods of the City of Philadelphia. In particular, we evaluated the role and influence of community engagement in reducing spatial inequality in these neighborhoods through various programs that are supported by non-profit organizations.

This is a descriptive study where we have used surveys, interviews, and Geographic Information Systems (GIS) based spatial and network analyses as primary methodologies. Our research agenda included the following tasks:

- Analyze the issues of food insecurity and spatial inequality that exist in many lower-income neighborhoods;
- Explore the role of urban agriculture, including community gardens and urban farms;
- Understand the nature and influence of community engagement through the operations and programs of CBOs/CDCs; and
- Develop questions for future research.

## HUNGER AND FOOD INSECURITY

### Background

Poverty is the root of hunger. People under poverty occasionally or regularly face hunger and undernourishment, have poor diets, and thus suffer physical health consequences. Defining or measuring food insecurity and hunger is a challenging task. According to The Philadelphia Grow project, “Hunger is the involuntary decrease in the quality and quantity of food eaten because of economic hardship. It is related to undernourishment and other health problems.”<sup>1</sup> In order to understand the issues of hunger and food insecurity in old industrial cities such as Philadelphia, we need to study the changes in population and land use patterns over the years. Based on U.S. census data, Figure 1 presents a comparative analysis of population changes in Philadelphia and the Delaware Valley Metro region from 1900 to 2010. Like other similar cities, the City of Philadelphia has been losing population since the 1950s. At the same time, suburban counties have gained population. As we see, only in the recent census data has the City experienced some population increase. Unfortunately, even though the city was losing population for a number of decades, its agricultural land areas were diminishing.

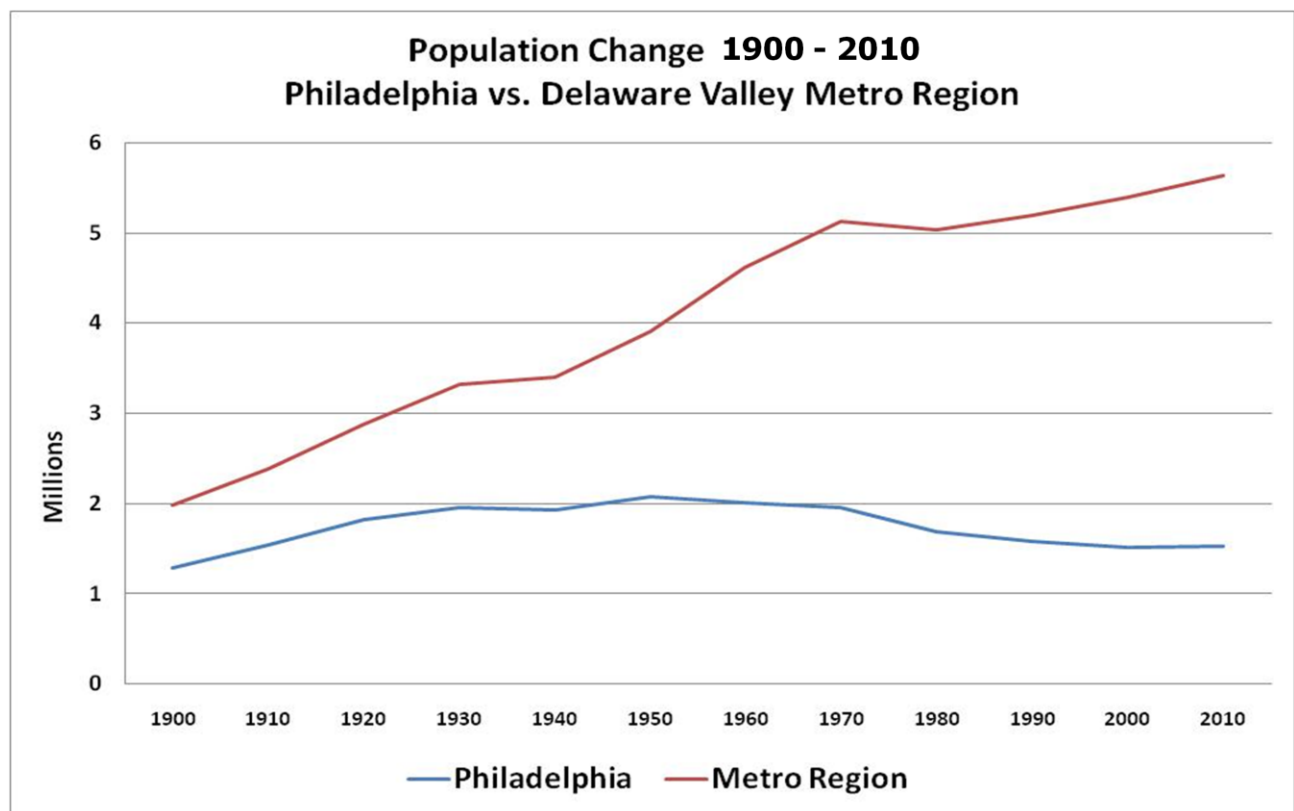


Figure 1: Population change in Philadelphia and the metro region 1900 – 2010

<sup>1</sup> The Philadelphia Grow project web site, 2011.



Figure 2 shows selected land uses of Philadelphia County using DVRPC land use data of 1990, 1995, 2000, and 2005. As we see in this figure, residential, wooded, and agricultural land uses have decreased, but parking areas have increased. More importantly, the city has seen significant increase in vacant land use.

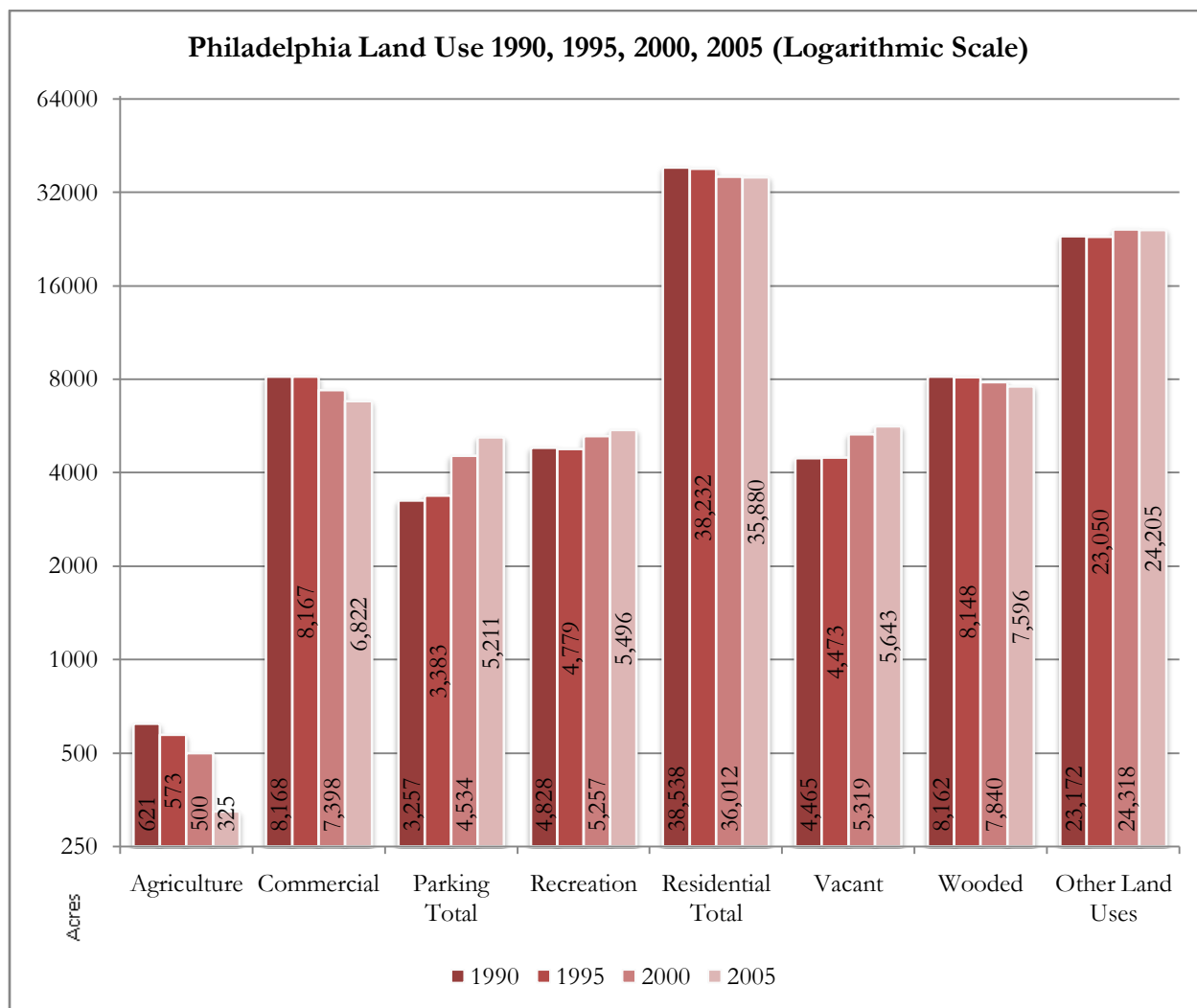


Figure 2: Land use change in Philadelphia County, 1990 – 2010

Figures 3a and 3b show a comparison of vacant land parcels in Philadelphia in 1999 and 2010 (data aggregated at the census tract level). According to these maps, Philadelphia's vacant land parcels have increased by approximately 50% within the last 11 years. A 2010 study published by the Redevelopment Authority (RDA)<sup>2</sup> reports the vacant land adds up to 3,555 acres that are valued at nearly \$2 billion and accounts for a citywide \$8,000 loss in property value per household (all estimated values). This study also estimated that 78% of vacant land parcels are privately owned. In addition, maintaining all the vacant land costs the city \$20 million each year.

<sup>2</sup> Econsult Corporation et al. (2010). *Vacant Land Management in Philadelphia: The Cost of the Current System and the Benefits of the Reform*. Prepared for the Redevelopment Authority of the City of Philadelphia.

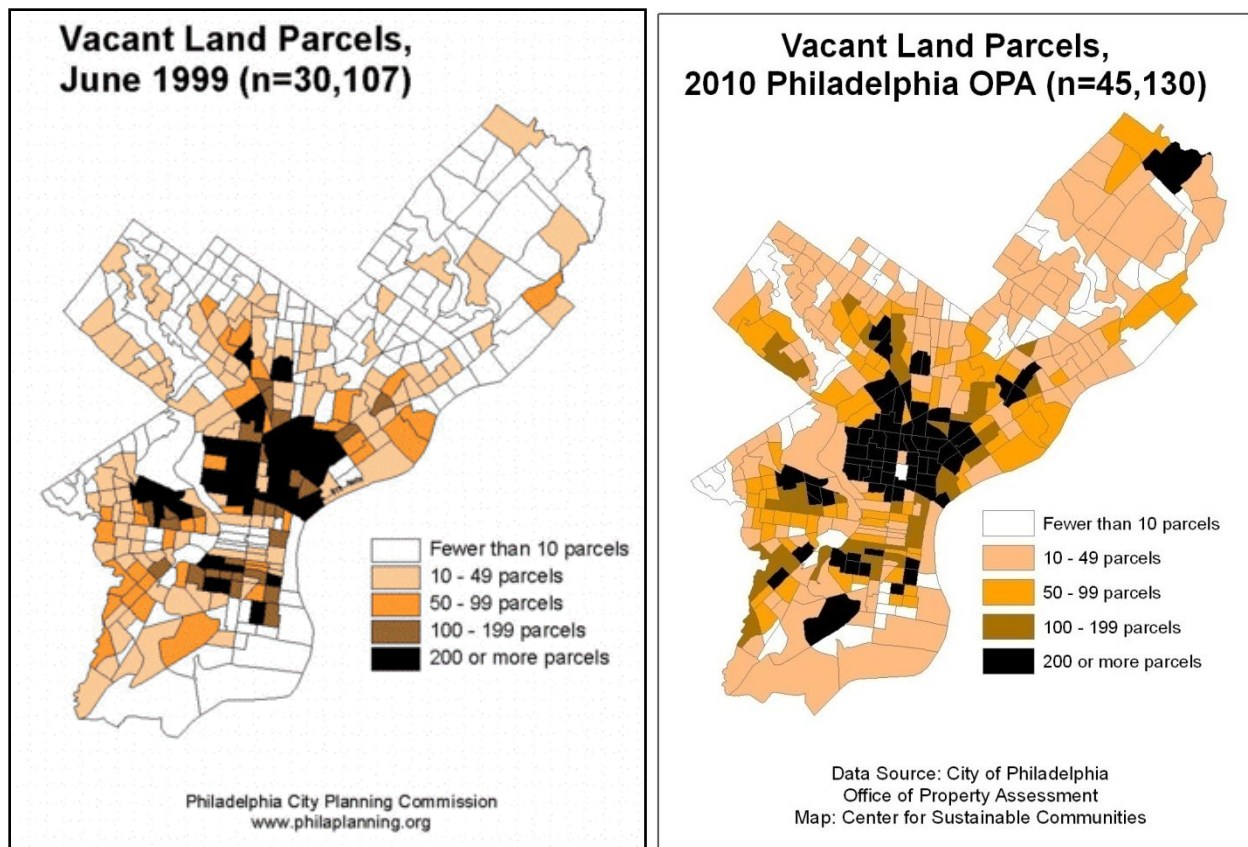


Figure 3a and 3b: Philadelphia vacant land parcels in 1999 and 2010

Source of 3a: Philadelphia City Planning Commission web site (<http://www.philaplanning.org/data/vacprop.html>)

The majority of vacant land parcels in the city are concentrated in North, West, and South Philadelphia (loosely defined). According to U.S. census data, these areas also have significant poverty concentration. We present American Community Survey data (2005-2009) in figure 4a. This map is showing population up to 200 percent of poverty at census tract level. Darker color of the tracts represents denser poverty concentrations. As poverty leads to food insecurity and hunger, these areas also experience the most hunger. Figure 4b shows the spatial pattern of residents who called Philabundance Hotline asking for emergency food assistance during 2009-2010<sup>3</sup>. It is important to note that these areas – primarily North, West, and South Philadelphia – have higher rates of vacant land parcels, higher concentration of poverty, and higher evidence of hunger. According to U.S. census data, these areas also have higher concentration of minority population. The leading anti-hunger nonprofit Food Research Action Center (FRAC) has analyzed data from a 2011 survey, created for the Gallup-Healthways Well-Being Index. Approximately 18% of respondents throughout the country said yes to this survey question: "Have there been times in the past 12 months when you did not have enough money to buy food that you or your family needed?" Based on this survey Pennsylvania's first congressional district, which includes

<sup>3</sup> Meenar, Mahbubur. Forthcoming. Feeding the Hungry: Food Insecurity in Lower Income Communities. In *Local Food Geographies: Concepts, Spatial Context, and the Local Practices*, eds. Reid, N. et al. Surrey, England: Ashgate Publishing Ltd.

Philadelphia's Kensington neighborhood, parts of North and South Philadelphia, and the City of Chester, was named the second hungriest district in the entire nation<sup>4</sup>.

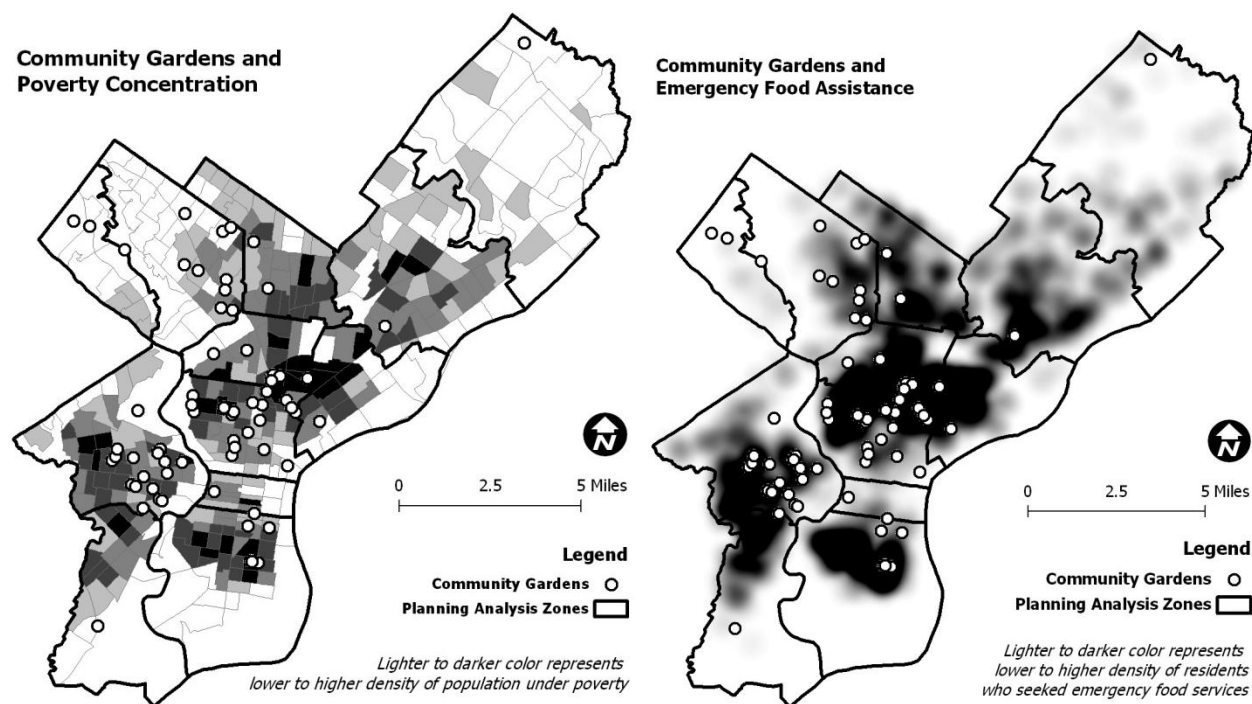


Figure 4a: Poverty map (at and below 200 percent)

Figure 4b: Spatial pattern of locations of the callers to Philabundance Hotline asking for emergency food assistance during 2009-2010

Note: Only the community gardens and urban farms that participated in our survey are displayed in these maps.

## Community Food Insecurity

In order to analyze community food insecurity in Philadelphia, we started with this question: What is the state of healthy and fresh food access in these lower-income neighborhoods? We analyzed fresh food accessibility in the city based on various types of food outlets. We also looked at a number of other studies that have analyzed this issue. One such study is The Reinvestment Fund's (TRF) supermarket study<sup>5</sup> of *low access areas*. This national study has identified areas underserved by full-service supermarkets and experienced significant grocery retail leakage. In the *low access areas*, according to this study, residents have to travel longer distances to supermarkets compared to the average distance of higher-income areas with similar population density and car ownership rate. In addition to population data, the TRF study also used residential land area, car ownership, Bureau of Labor Statistics Consumer Expenditure Survey (2009), and supermarket locations (2009) from Trade Dimensions. The results are presented through online interactive maps published on the web site *The Policy Map*. As seen in these maps, many lower-

<sup>4</sup> Philly.com web site, 2011

<sup>5</sup> Details available at the TRF web site (<http://www.trfund.com>) and The Policy Map web site (<http://www.policymap.com>)

income neighborhoods in Philadelphia contain these *low access areas*. We collected data of supermarkets and other types of food retail from TRF's Policy Map website and obtained Healthy Corner Store<sup>6</sup> data from The Food Trust (TFT). Figure 5 shows supermarkets, grocery stores, healthy corner stores, and other outlets that sell fresh foods in Philadelphia.

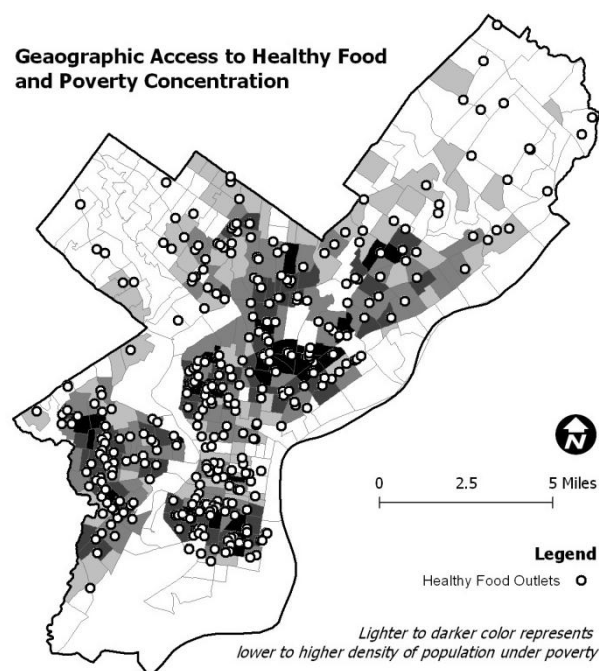


Figure 5: Locations of supermarkets, grocery stores, healthy corner stores, and other outlets that sell healthy and fresh food

In addition, we created two more maps showing other types of community food outlets that may offer healthy food choices to the residents. We collected the following data layers from various sources: farmers markets (Peleg Kremer, University of Delaware), community gardens and farms (Pennsylvania Horticulture Society, CSC), and food cupboards (Greater Philadelphia Coalition Against Hunger, Philabundance). Figure 6 shows community gardens, farms, and farmers markets in Philadelphia, and Figure 7a shows food cupboards that distribute produce donated by various community gardens and farms. Thirty three cupboards receive donations of fresh, local produce that are grown in 44 community gardens through the City Harvest program<sup>7</sup>. In a regular growing season, this program reaches out to 1,000 lower-income families. It distributed above 64,000 lbs of produce during 2006-2009 growing seasons. Besides, the *Fresh for All* program (Philabundance) distributes fresh produce in some parts of

<sup>6</sup> In partnership with five North Philadelphia communities, the TFT developed the Healthy Corner Store Initiative pilot program to increase the availability of healthy foods in corner stores and to educate young people about healthy snacking. With a partnership with Philadelphia Department of Public Health, the TFT is now expanding this network to 1,000 stores throughout the city. <http://www.thefoodtrust.org>

<sup>7</sup> City Harvest is a partnership of Pennsylvania Horticulture Society, the Philadelphia Prison System, SHARE, the Health Promotion Council of Southeastern Pennsylvania, Weavers Way Co-op and Farm, and 42 community gardens. <http://www.pennsylvaniahorticulturalsociety.org/phlgreen/city-harvest.html>

the city. We have also created an origin-destination matrix using ArcGIS Network Analyst extension to see the network pattern from urban farms or gardens to food cupboards. As expected, the networks have a strong geographic influence, as most origin and destination points are geographically close (Figure 7b).

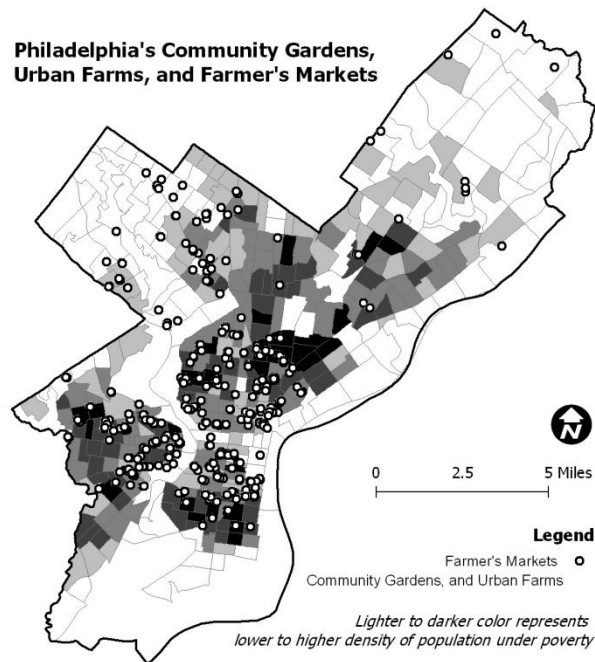


Figure 6: Locations of Philadelphia's community gardens, farms, and farmers markets

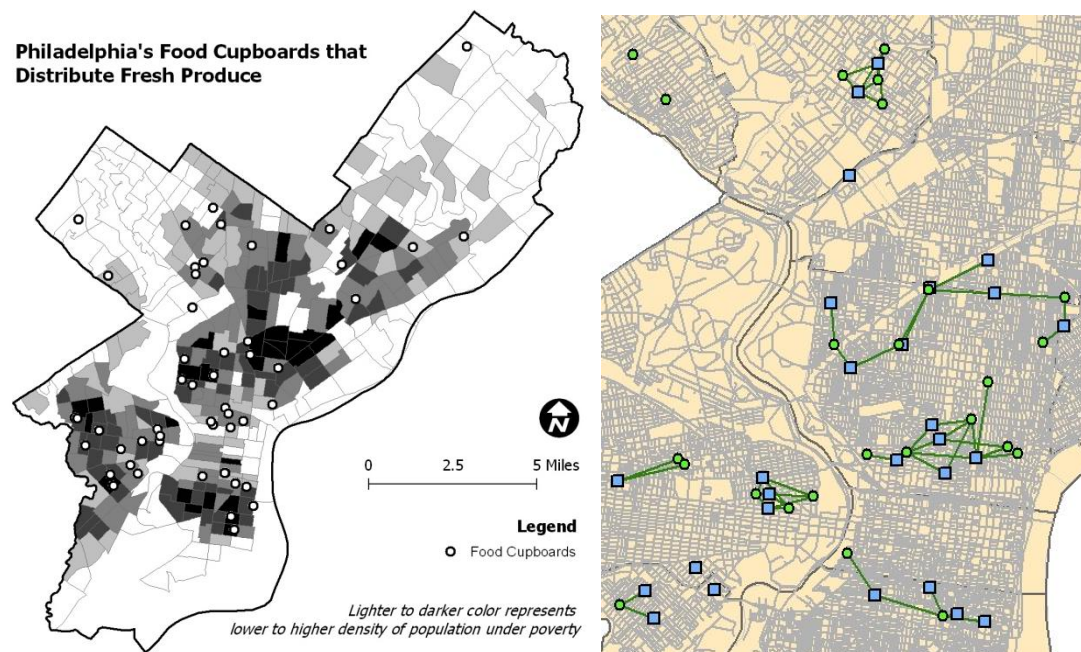


Figure 7a: Philadelphia's food cupboards that distribute fresh produce donated by various community gardens and farms

Figure 7b: A screen shot of an origin-destination network analysis – from community gardens/ urban farms (circles) to food cupboards (squares)



The state of community food security is more than having physical or geographic access to healthy food choice. Having physical access to a fresh food outlet does not ensure affordability, ethnic preference, variety, and quality of foods. Food insecurity is a state of a person or a household, it is a feeling. According to the Centre for Studies in Food Security, there are five components of food security, known as the Five A's<sup>8</sup>: (1) Availability: sufficient food for all people at all times; (2) Accessibility: physical and economic access to food, including access to information; (3) Adequacy: access to food that is nutritious, safe, and sustainable; (4) Acceptability: access to culturally acceptable food production and distribution that do not create conflict with people's dignity or human rights; and (5) Agency: policies and processes that help achieve food security.

Minimum or no access to fresh food outlets within a walking distance may become a critical issue in poor neighborhoods where car ownership is also low. Figures 5 through 7 show that many parts of these neighborhoods have physical access to one or more types of food outlets or at least they have such access through Philadelphia's extensive public transport network (not shown in the maps). However, it does not guarantee that lower-income residents would want to buy or have affordability to buy local, fresh produce. From our field surveys we heard various types of comments regarding quality and affordability. In many small convenience stores healthy food options are limited and foods are not always fresh. Additionally, many fresh food outlets such as farmers markets, urban farms, or Community Supported Agriculture (CSA) programs do not accept Electronic Benefits Transfer (EBT) cards<sup>9</sup> and target higher income residents. Furthermore, availability of healthy foods in food cupboards is not always guaranteed and many people in need do not necessarily ask for food assistance from cupboards.

Gardens attempt to alleviate problems of fresh food access, but experience limitations in fully addressing the concerns. Most community gardens are seasonal and cannot offer fresh produce year round. Besides, hundreds of community gardens have died over the last two decades for a myriad of reasons, including discontinued or decreased financial support, and real estate development pressure. Gardens also take a tremendous amount of time and capital to create and sustain. Additional struggles consist of organizing neighbors and volunteers, securing funding and tools, and securing land from the city. One gardener trying to start a community garden expressed frustration about working with the city to gain access to vacant property, "It's exhausting, it's a full time job insuring any legal permission to do this kind of project because no one really knows what's going on." These factors make gardens seem much less accessible for neighborhoods with little capital mobility.

In addition to the external difficulties many gardens face, there are also limitations faced by community members. Many residents do not have easy access to existing community gardens. Most of them are member-only gardens with long waiting lists, and it takes a tremendous amount of time commitment to

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<sup>8</sup> Centre for Studies in Food Security web site, 2010.

<sup>9</sup> The EBT card is the identification card for the SNAP/Food Stamp Program.

create and sustain a valuable garden. This can be difficult for lower-income residents who have two or three jobs, sometimes outside of their neighborhoods, and rarely have time to cook food let alone grow it. Gardens are also facing a generational and cultural gap among young kids and old immigrants who migrated from the southern states with agricultural knowledge. Education is another crucial factor. Regardless of the neighborhood racial composition, knowledge limitations around fresh food may inhibit low-income participation in community agriculture projects.

Following these discussions, we understand that a community food insecurity map should include more than just poverty and food access variables. In order to create a community food insecurity map of Philadelphia, we analyzed the data from the Southern Pennsylvania Household Health Survey 2010, published by Public Health Management Corporation's (PHMC) Community Health Data Base (CHDB). Approximately 10,000 households in Philadelphia and four neighboring counties were randomly contacted by phone and asked questions about health screenings and personal health behaviors. This is one of the largest regional health surveys that provides a unique, in-depth view into the health and well-being of the region's residents. Our food insecurity map is based on 25 questions (variables) from this survey, including the following: access to healthy food, health condition (diabetes, obesity), poverty, hunger, education, employment status, food consumption habit, nature of community involvement, government assistance status, and use of the Internet. A complete list of all these variables or survey questions is provided in Appendix A. As seen in Figures 8a and 8b, Philadelphia's lower-income neighborhoods have the most food insecure population.

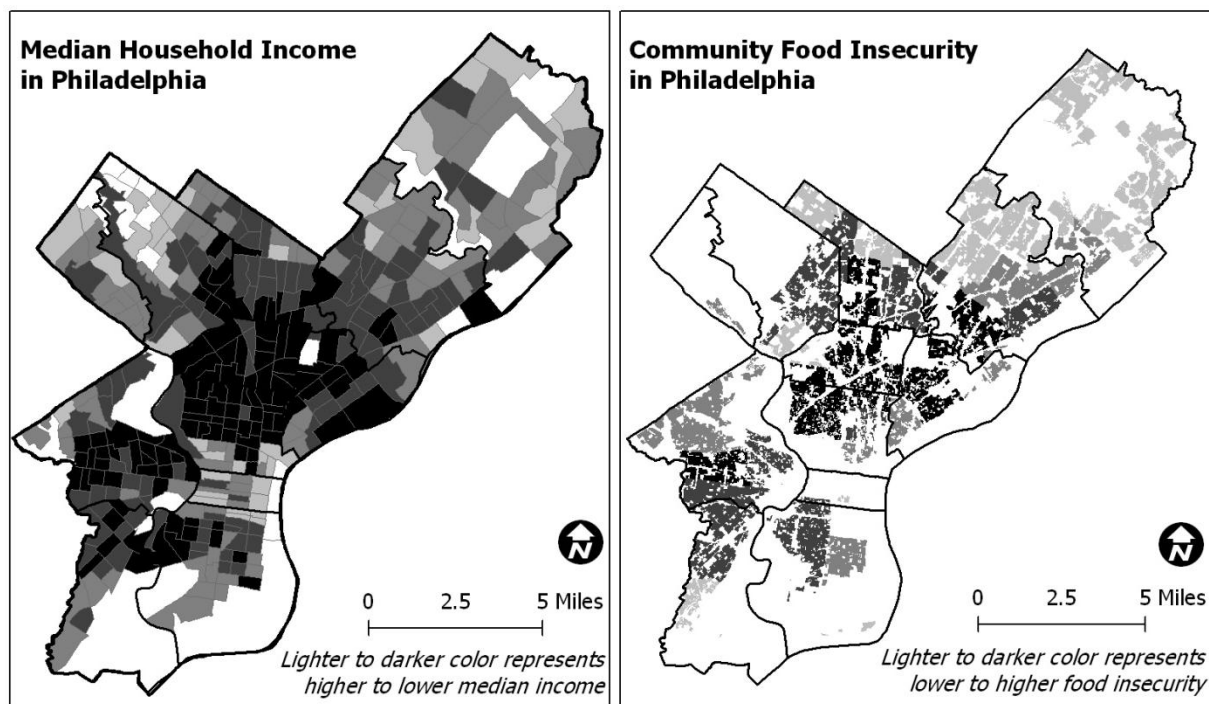


Figure 8a and 8b: A comparison of median household income and the state of community food insecurity in Philadelphia neighborhoods.



Urban Tree Connection, April 2011  
*Photo: Mahbubur Meenar*



Urban Tree Connection, June 2011  
*Photo: Brad Larrison*



Southwark Queen Village Garden, April 2011  
*Photo: Mahbubur Meenar*



Walnut Hill Farm, April 2011  
*Photo: Mahbubur Meenar*



Preston's Paradise, Tire Garden, April 2011  
*Photo: Mahbubur Meenar*



Fairhill Community Garden, June 2011  
*Photo: Jean Warrington*



## SURVEY OF COMMUNITY GARDENS (& FARMS)

As the second part of this study, we examined the impact of urban agriculture in the city by focusing on the type of work community gardens do, how they distribute food, and who they impact. Philadelphia's local food landscape is immense and the Philadelphia region is celebrated on a national scale for its urban food initiatives. Within the city various programs exist, from grassroots agriculture on vacant parcels to large scale farming programs that distribute food throughout the city. Due to the variety of programs available throughout various neighborhoods of Philadelphia, the impact of urban agriculture varies. In recent times, not too many studies have measured the outcome of community gardens throughout the city. A 2008-2009 study estimated that Philadelphia's community and squatter gardens produced \$4.9 million worth of vegetables during summer – more food than all of the city's farmers markets and urban farms combined sold in that year<sup>10</sup>.

In February 2011, the CSC ran a survey of Philadelphia's community gardens and farms to gain a better picture of the city's urban agriculture efforts and their contribution to community food security. Our survey consisted of 36 questions divided into two sections. Section A had questions about the gardens while Section B asked questions about the neighborhoods and the gardens' engagement in their neighborhoods. The online survey was open for two weeks, from February 21 to March 7, 2011. The PHS and Philadelphia Orchard Project helped us distribute the survey link to their network of about 120 organizations/individuals throughout the city. We received 46 responses (38% response rate) from individuals and non-profit or grassroots organizations (including CBOs/ CDCs) who manage a total of 81 community gardens and urban farms throughout Philadelphia. Out of those 46, we conducted seven in person follow-up interviews and three phone interviews. There was at least one response from each of Philadelphia's 12 Planning Analysis Zones. We received fewer responses from full-scale for-profit urban farms, as our survey was primarily targeted toward community gardens who may also sell produce. We did however invite a few urban farms to participate in the survey; all of which have community programs related to hunger and food insecurity.

### The Gardens

Our survey received at least one response from each Planning Analysis Zone of the City of Philadelphia. Figure 9 shows the location of the community gardens and urban farms, and their respective neighborhoods. This figure also shows the percentage of minority concentration throughout the city. The gardens are divided into three categories based on how they described their primary mission, the name of the garden (i.e. if the phrase "community garden" appeared in their gardens name), and their

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<sup>10</sup> Vitiello and Nairn. 2009. Community Gardening in Philadelphia: 2008 Harvest Report. Penn Planning and Urban Studies, University of Pennsylvania.

tax status as an organization.<sup>11</sup> The three categories are: CBOs/CDCs, community gardens, and urban farms. Table 1 shows the number of respondents in each category and Table 2 shows the total number of respondents in each Planning Analysis Zone. Of the 81 gardens presented in this study, the size of each garden varies tremendously. Thirty of them are smaller than 2,000 sq. ft., sixteen are between 2,000 and 10,000 sq. ft., and the rest are larger than 10,000 sq. ft. Table 3 shows the number of gardens in each category based on square feet.

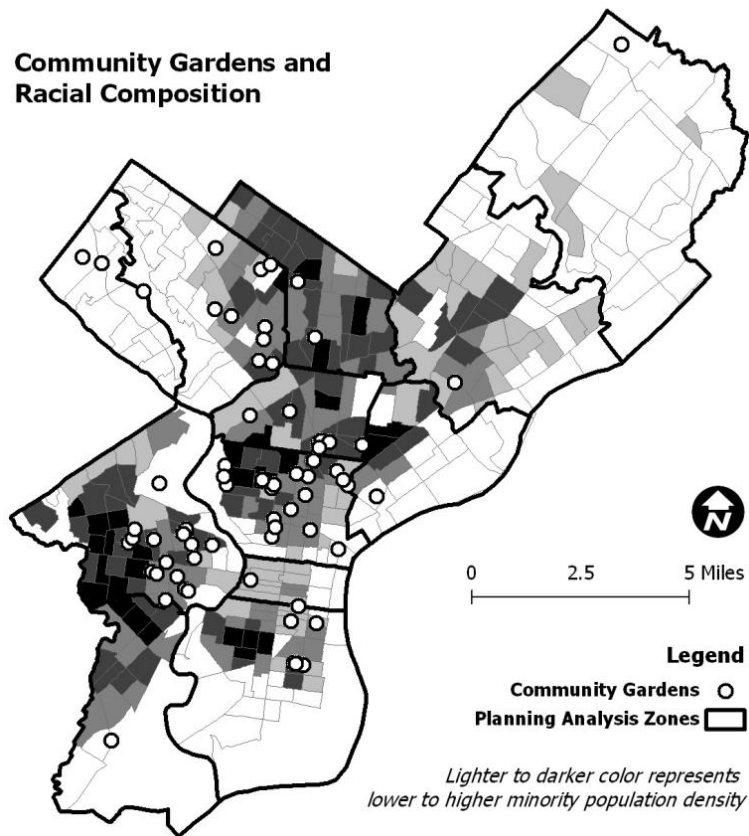


Figure 9: Philadelphia minority composition and locations of all community gardens/ farms participated in the survey. Boundaries show the limits of the City of Philadelphia's Planning Analysis Zones ( $n = 12$ ).

Table 1: Number of Survey Participants According to Categories

Category	Number of survey participants
CBO/CDC	15
Community Garden	26
Urban Farm	5

<sup>11</sup> Some gardens straddle two categories. Some Community Gardens have a 501(c) 3 status, but their mission is not community development based.

Table 2: Number of Gardens Based on Planning Analysis Zones

Planning Analysis Zone	Number of Garden Responses
Center City	2
West Philadelphia	19
South West Philadelphia	1
South Philadelphia	7
North Philadelphia	20
Upper North Philadelphia	7
Kensington	1
Near North East	1
Far North East	1
Olney	2
Germantown/Chestnut Hill	11
Roxborough/ Manyunk	3

Table 3: Number of Gardens Based on Size

Size	Number of Gardens
< 2,000 sq. ft.	30
2,000 - 10,000 sq. ft.	16
> 10,000 sq. ft.	15

Table 4 shows how respondents identified their missions on a scale of High Priority to Low Priority. A large percentage of respondents identify “community greening” (32%), “food production” (31%), and “community development” (23%) as the most important activities for their gardens.

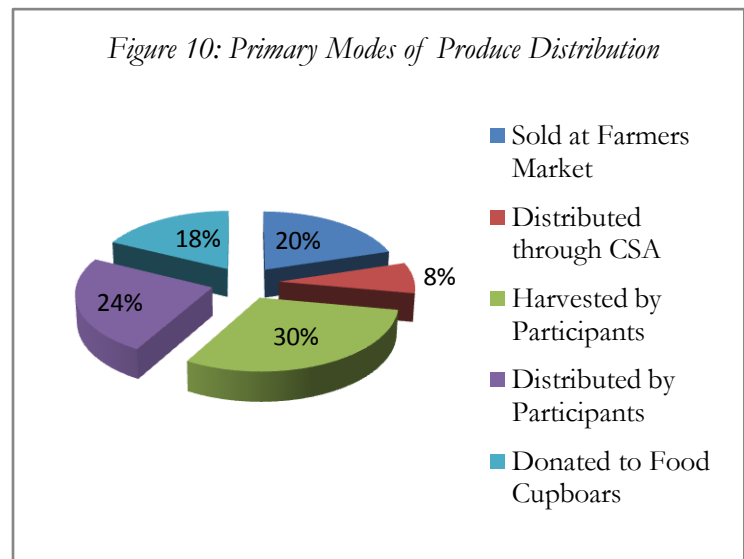
Table 4: Mission of Gardens/Organizations

	<div>High Priority ←————→ Low Priority</div>				
Scale	5	4	3	2	1
Business or Entrepreneurial	6	6	6	2	21
Charity (to food cupboards, etc)	9	8	11	7	7
Community Development	19	10	7	4	1
Community Greening	26	7	7	4	1
Education	22	8	9	4	1
Food Production	25	8	7	3	2
Training	12	12	4	4	7
Other	8	0	1	0	0

## Food Distribution

Food and its distribution are at the center of urban agriculture debates. How does fresh food get to the neediest populations? Who distributes that food? Where does it come from? These questions are central to the discussion on the impact of urban agriculture at addressing food insecurity and spatial inequality. This section of the study looks at the role gardens play in distributing food throughout Philadelphia.

Both Figure 10 and Table 5 report how gardens participated in this survey prioritize their modes of distribution. In the survey question we suggested five types of food distribution: (i) Sold at farmers markets; (ii) Distributed through community supported agriculture (CSA); (iii) Harvested by participants; (iv) Distributed by participants; and (v) Donated to food cupboards. According to Table 5, the majority of the participating gardens consider that harvesting and distributing by participants are their highest priority. In Figure 10, we have combined all the higher priority modes (ranks 5 and 4) as primary modes. This pie chart shows the percentages of these primary modes of food distribution, as practiced among the gardens. In Table 6, we have narrowed down the five types of modes into three major categories: informal distribution, sales, and donations.



*Table 5: Modes of Food Distribution*

	<div>High Priority ←</div> <div></div> <div>→ Low Priority</div>				
Scale	5	4	3	2	1
Sold at Farmers Market	11	5	0	1	10
Distributed through CSA	4	2	1	1	12
Harvested by Participants	23	1	4	1	4
Distributed by Participants	19	0	2	3	6
Donated to Food Cupboards	9	5	6	3	7
Other	2	3	1	0	4

Table 6: Categories of Distribution

Sales	Donations	Informal Distribution
Farmers Markets	Donate to Food Cupboard	Harvested by Participants
CSA		Distributed by Participants

### ***Informal Distribution:***

Informal distribution is one of the more popular modes of distribution amongst urban agriculture programs. Informal distribution differs from formal modes such as sales or formal donations in that there is no formal structure to the way produce is distributed. Food cupboards, grocery co-ops, and farmers markets constitute a formal structure to the way food is distributed, and are, in part reliable ways for residents to gain access to fresh produce. On the other hand, informal modes of distribution involve produce that is harvested by a garden participant or shared with neighbors of a garden participant. Usually, informal modes are less reliable than formal ones due to many factors and uncertainties that might be associated with growing local produce, and sharing that produce with neighbors.

Of the 46 survey respondents 54% of them identified their primary mode of produce distribution as either “harvested by participants” or “distributed by participants,” otherwise categorized as informal distribution. The mission of these community gardens is focused primarily on food production, community greening, and community development. Community gardens are typically neighborhood based and they identify mostly with the social network of their neighborhoods, which results in a comfort and desire to distribute food through that same network either through produce sharing or subsistence agriculture<sup>12</sup>.

Interestingly, about 33% of the respondents answered “yes” to having a membership fee. Membership fees range from \$5 to \$100 per year, with an average fee ranging from \$20-\$30 per year. Relying on the social network of neighborhoods, gardens who distribute food informally do so to help build the surrounding community. When asked why participants get involved in gardening, one couple answered, “For fun.” Informal distribution modes seem to be simultaneously creating greater community interactions and feeding families with fresh, local produce.

### ***Sales:***

Urban farms, some CBOs/CDCs, and even some community gardens grow food for the purpose of selling, even if partially, at or to a farmers market, through a CSA program, or to a grocer. In this study we did not include community garden membership fees under the sales mode of distribution, because it is not a direct financial exchange for produce, and because community gardens play a prominent role in distributing food through donations and informal avenues.

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<sup>12</sup> Note: Subsistence agriculture is a form of self sufficiency farming where the grower and the consumer are the same person.

Out of the 46 survey participants, 39% answered “yes” when asked if they sold food. In particular, 20% primarily sold at farmers markets and 8% primarily sold through a CSA. When asked about the approximate amount of produce sold each year in lbs., gardens gave a wide range of responses. Answers varied from 5 lbs. to tens of thousands of lbs. A number of respondents also shared the dollar amount earned from selling produce in a given year, rather than the total lbs. These responses also varied, ranging from \$150 per week to \$100,000 in a year. Figure 6 (page 13) shows active farmers markets located throughout the city where gardens have the opportunity to sell.

### ***Donations:***

Philadelphia has a network of about 700 food cupboards and soup kitchens that address the issues of community food insecurity and hunger. Food cupboards, however, do not fully alleviate the inequality found in the lowest income neighborhoods in terms of providing access to fresh produce. We specifically asked the survey participants if their gardens donated produce to food cupboards. Figure 7a (page 13) shows the locations of all food cupboards in Philadelphia that receive fresh produce from the community gardens.

Out of the 46 respondents, 18% primarily distribute produce to food cupboards. This includes community gardens, farms, and CBOs/CDCs. Typically the cupboards are located in the same or adjacent neighborhoods as the gardens. According to survey results, a total of 18,712 lbs. of produce was distributed to 15 different food cupboards by 20 different gardens in 2010. Table 7 shows the number of gardens distributing various amounts of produce to cupboards.

*Table 7: Number of Gardens Donating Produce by Weight*

<b>Weight</b>	<b>Number of Gardens</b>
< 250 lbs.	10
250-750 lbs.	5
> 750 lbs.	8

## **The Neighborhoods**

Neighborhoods are the social fabric of a city, and the conditions of neighborhoods are vital for its success. As discussed in the *Background* section of this report, certain Philadelphia neighborhoods are experiencing a variety of social problems related to population loss, vacant land, food inequality, and hunger. Urban agriculture plays an important role in the redevelopment of formerly blighted neighborhoods. Participants of this study come from a variety of neighborhoods in Philadelphia, each of them contributing something unique to the landscape.

In Philadelphia there are dense concentrations of community gardens and urban farms in the North and West Philadelphia neighborhoods where land vacancy is extremely high and family income levels hover

around the poverty line. Figure 4b (page 11) shows that there is a correlation between the highest concentration of gardens and the highest concentration of emergency food assistance callers. Figure 4a (page 11) shows similar relationship with poverty concentration.

Participants revealed additional information about their neighborhood conditions through the survey. 43% of respondents considered their neighborhood a food desert, compared to the 46% who did not. 11% were unsure if their neighborhoods were considered a food desert or not. Each of the participants who we interviewed expressed dislike for the phrase “food desert”. Each interviewee shared different opinions about how confusing the term “food desert” had become in literature, political circles, or neighborhood conversations, and how many different meanings the phrase conjured up. One interviewee expressed that the term “food desert” could mean anything from not having access to fresh food due to a spatial limitation or a financial limitation.

Intriguingly 43% of the 46 respondents believed their neighborhoods to be “food deserts,” broadly defined. On the other hand, a moderate to high percentage of respondents expressed having any type of fresh food outlets in their neighborhoods. Table 8 shows the percentage of responses to the question, “Does your neighborhood have the following fresh food outlets?” We have not identified exactly how many of these fresh food outlets are available in these neighborhoods and whether they can meet the demand of the total neighborhood population.

*Table 8: Fresh Food Outlets in Neighborhoods as Described by Survey Participants*

Access to Fresh Food Outlet	Percentages of Participants
Farm Stand	32%
Farmers Market	71%
Grocery Store	59%
Healthy Corner Store	15%
Super Market	61%
Other	29%

## Community Engagement

### *Recipients and Participants of Urban Agriculture*

According to this study’s findings, urban agriculture projects are located throughout the city, but cluster in high vacancy, low income neighborhoods where food access is scarce. Is agriculture clustering in these particular neighborhoods because land is more readily available, or are the locations of urban agriculture projects carefully chosen based on target populations? According to Table 9, the majority of produce recipients are clustered in lower socio economic classes. “Lower income households” and “Households living with government assistance” received the majority of the High Priority responses,

showing that gardens primarily serve disadvantaged residents with fresh produce through any of the three distribution mediums. “Upper income households” received a minuscule 4 total High Priority responses. Although there is a higher concentration of gardens in more struggling neighborhoods and these gardens highly prioritize donations of fresh produce to more disadvantaged households in their vicinity, 58% of gardens claimed to serve people living outside the immediate neighborhood.

Table 9: Prioritization of Produce Recipients According to their Type or Socio-Economic Status

*Recipients include those who purchase, receive donations, and/or harvest*



	High Priority				Low Priority
Scale	5	4	3	2	1
Lower income households	18	6	6	1	3
Middle income households	10	7	5	2	7
Upper income households	2	2	1	2	16
Households living with government assistance	13	4	7	1	4
School children	5	8	7	4	7
Seniors	11	6	5	3	7
Other	7	0	0	0	1

Table 10: Prioritization of Active Participants According to their Type or Socio-Economic Status

*Participation includes food production, distribution, and community outreach*

	High Priority				Low Priority
Scale	5	4	3	2	1
Lower income households	15	8	8	5	3
Middle income households	12	6	12	1	4
Upper income households	3	4	5	1	14
Households living with government assistance	5	7	4	5	7
School children	14	5	4	7	5
Seniors	5	5	7	2	11
Other	6	3	0	1	1

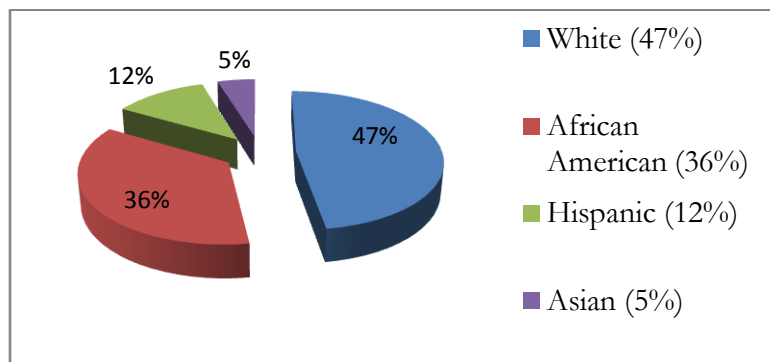
Similar trends existed in the rate of participation across socio-economic demographics (Table 10); however, differences occurred between primary participation rate and primary recipient rate in households living on government assistance, seniors, and school children. School children were more likely to participate, but not be the recipients of produce; whereas households on government assistance were more likely to be the main recipients, but not participate. Seniors had a similar trend as households living on government assistance and, not surprisingly, had a higher recipient rate than participation. This



could indicate that seniors are the primary receivers of government assistance, or that due to physical limitations are not able to participate.

Additional data collected from this study shows gardens with gardeners from a variety of ages and racial backgrounds. The average age of the active gardener was 35 years with the majority of gardens drawing activity from the 20 to 40 year old demographic. The age range of active gardeners shows the diversity of gardening throughout the city, from school age children to young adult activist to experienced gardeners (up to 85 years) and that community agriculture is for everyone.

When gardens were asked to identify the primary race and/or ethnicity of their active gardeners, the responses were varied. Figure 11 shows the percentage of each demographic. Whites and African Americans make up a total of 83% of the active gardeners. Considering the locale of the gardens who responded, it is not surprising to see the difference between African American and Hispanic gardeners.



*Figure 11: Primary Race and Ethnicity of Active Gardeners*

Since the majority of gardens that participated in this survey are located in minority neighborhoods (see Figure 9, page 18), the high percentage of white gardeners appears as a surprising trend. Why is there such a high rate of white gardeners? One respondent even comments during an interview, “It’s [Urban Farming] still a white, top down activity.” Another respondent says that every part of the city is different and this type of statement may not be applicable everywhere. So, where are these active gardeners coming from? According to Table 11, 25 gardens mention that they get less than 25 participants from their own neighborhoods. This number also correlates with the high percentage of gardens (58%) who claimed to serve people outside their immediate neighborhood. On the other hand, eight gardens get 25-100 participants from their neighborhoods, and five gardens (primarily urban farms) get more than 100 participants from their neighborhoods. However, we cannot conclude that community gardens are not drawing the majority of participants from their respective neighborhoods. Low neighborhood participation happens mostly in smaller gardens, which were the primary respondents in this survey (see Table 3, page 19).

Table 11: Garden Participation from Surrounding Neighborhoods

# of Participants from Surrounding Neighborhoods	# of Gardens
<25	25
25-100	8
>100	5

In addition, our follow-up analysis shows that the participants are coming from immediate neighborhoods regardless of their race. We have done a GIS-based network analysis showing the locations of a few randomly selected gardens and the locations of their participants. According to Figure 12, a South Philadelphia community garden has a majority of its members coming from the immediate vicinity. However, we did not directly ask whether the white population living in these minority neighborhoods participate more actively than the black population. A more active participation of white population is likely the case for a number of the gardens that participated in our survey.

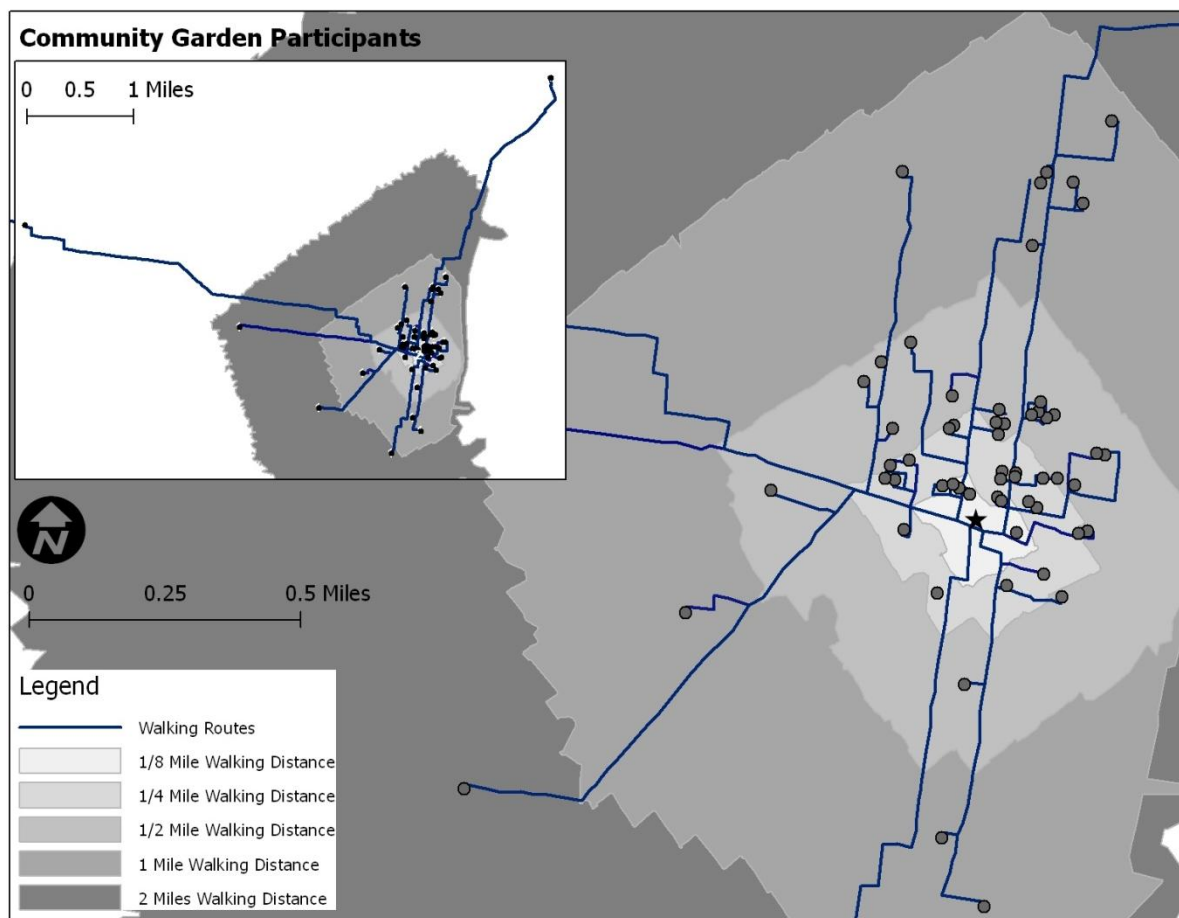
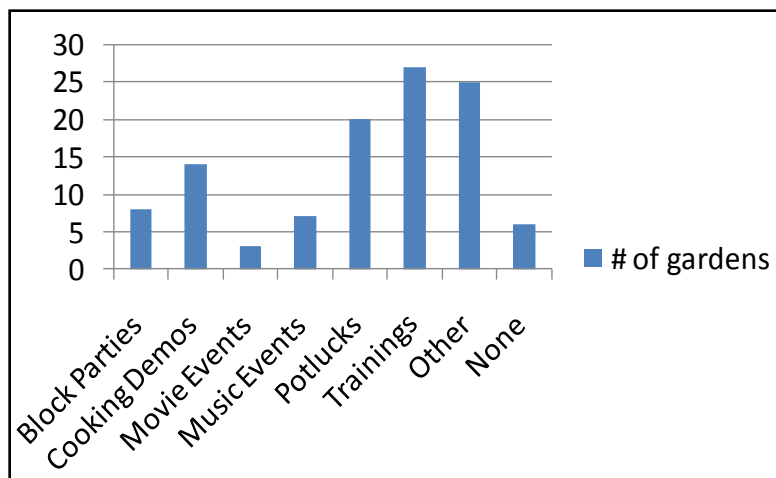


Figure 12: A network analysis shows that most of the participants are coming from the immediate vicinity of a community garden located in South Philadelphia neighborhood

### ***Events and Outreach***

Events, meetings, and community participation are all necessary for the success of a garden within the community. Figure 13 shows the various events gardens host in their communities. Responses for the “Other” category include: On Site Markets, Private Parties, Harvest Festivals, Plant Sales, Community Meals, Picnics, Garden Tours, Field Trips, Block Cleanups, and various other events. When gardens are asked to identify how many people in the last 12 months participated in these events, the numbers vary, but are generally high. Nine gardens had less than 50 people participate in these events throughout the year, while 21 other gardens managed anywhere between 50-4,000 participants a year.



*Figure 13: Events Hosted by Gardens*

In addition to events, gardens were asked about how often they had community meetings. 30% of gardens had such meetings 1-2 times a month; 35% had meetings either 1-2 times every 6 months or 1-2 times a year; the other 35% answered “other,” with the most prevalent being on an “as needed” basis. There were two gardens that responded as “never” having community meetings. In general, about 15 to 20 people participate in these meetings.

Simply planting a garden in a neighborhood may draw some people out of their homes and into the garden, but to impact the greatest number of people gardens must reach out to their neighborhood. Gardens do this in a variety of ways; from in person networking to online social media. Table 12 shows the ways in which gardens prefer to communicate with community members, partners, and gardeners. While some gardens are using less technologically advanced mediums for outreach activities, the vast majority of gardens are using technology to both communicate and promote their work (see Figure 14). Of the gardens who responded, 32 of them use email as a primary mode to communicate with members<sup>13</sup>.

<sup>13</sup> The *Philly Food Justice* provides a list of web sites, Facebook pages, and blog sites of Philadelphia’s community gardens, urban farms, and CBOs/CDCs involved in urban agriculture. URL: <http://phillyfoodjustice.wordpress.com/outreach>

Table 12: Garden's Preferred Communication Mediums

	High Priority ←————→ Low Priority				
Scale	5	4	3	2	1
Email	30	2	1	0	2
Leaflet	2	6	4	3	13
Letter	3	2	4	2	14
Newsletter	4	4	5	4	10
Phone Call	12	4	11	6	2
Poster	3	3	1	5	11
Social Networking Announcement/Message	5	6	2	4	11
Text Message	2	0	1	6	14
Web Site Announcement	3	8	8	2	8
Other	8	2	0	1	3

Note: "Other" responses included: in person presence, word of mouth, and schools.

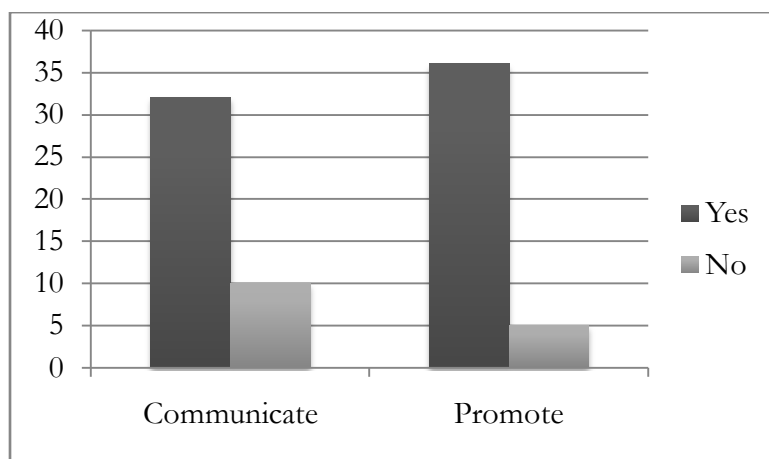


Figure 14: Use of Internet and Digital Technologies to Communicate with Gardeners and Promote Garden activities

The use of technology is an important medium in the 21<sup>st</sup> Century; however, further analysis indicates that it may not be the most effective way to communicate or promote garden activities in certain Philadelphia neighborhoods. Figure 15 shows the internet usage among residents based on the 2010 Household Survey Data. The lighter color indicates zip codes with a high rate of internet usage (several times a day to several times a week), while the darker colors indicate a low rate of internet usage (once a month to never). When mapped against the garden's locations, it is seen that a large number of gardens are located in neighborhoods where internet usage is low amongst residents.

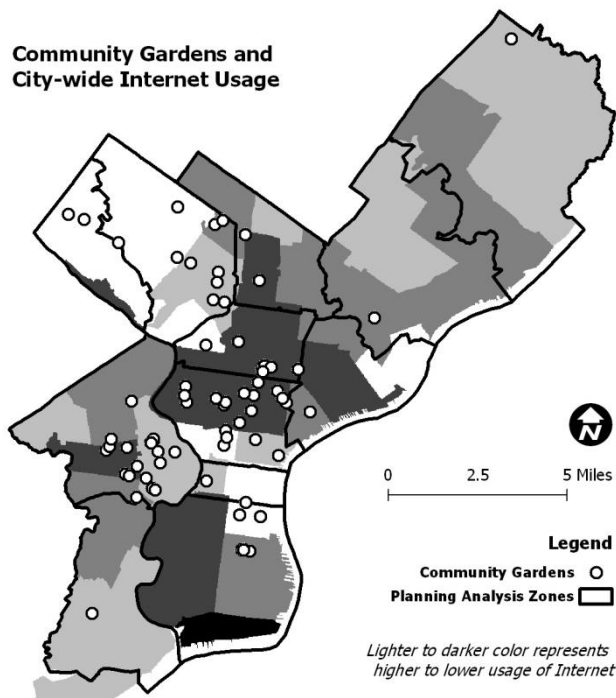


Figure 15: City wide Internet Usage and Locations of Community Gardens

## DISCUSSION: SOLVING THE FOOD GAP

This section is a discussion of the follow-up interviews from the initial survey we conducted with garden organizers. The topics discussed here are based on either further dialogue about the survey results, or issues arising from interviewees.

- Agreement/disagreement with the statement: *“Philadelphia’s community gardens help provide fresh food access and alleviate food insecurity, and hunger in lower income neighborhoods.”*
- Economic contribution of urban agriculture
- Accessibility to urban agriculture

### Agreement:

Urban agriculture projects work hard to address the food gap found in disadvantaged urban neighborhoods. With high rates of grocery store leakage out of lower income communities, community gardens provide an important service to their communities by growing fresh and often times affordable produce. When asked about whether they agree with the statement “Philadelphia’s community gardens help provide fresh food access and alleviate food insecurity and hunger in lower income neighborhoods,” respondents overwhelmingly agreed. 67% of gardens “Strongly Agree” and 18% “Agree.” When gardens were asked to explain why, responses varied between the garden organizers who were interviewed.

One gardener emphasized how gardens play an important role in educating residents about fresh produce and creating a demand for it. He stated, “Community gardens build a great demand but if you don’t have a regional food system, people won’t be able to get food when they want it. Both are essential.” Another gardener stated, “Is urban agriculture a critical part of a regional food security solution? Absolutely. Is it going to replace supporting medium sized farms in South Jersey, Lancaster [County] and Adams County? No. Nor should it.” In discussion, garden organizers emphasized their role in knowledge production about, and exposure to, fresh produce. These organizers expressed a desire to create greater knowledge and excitement about fresh produce by giving those who previously did not have a choice between fresh and local produce and conventional foods. By giving people the option, gardeners are trying to “differentiate it [fresh food] from the industrial food system or ways they [lower income residents] were getting free food”, says a respondent. While these gardeners are trying to get food into the mouths of underserved residents in their neighborhood, their goal is not to supplant the role of primary food outlets in a neighborhood. By providing fresh food and education about fresh food, gardens believe they will increase the demand for fresh foods, thus impacting the type of food outlets in the neighborhoods. Gardens provide a service to their communities that suffer from food insecurity by growing and distributing foods and by doing so potentially contribute to community health and security.

**Disagreement:**

Gardens provide a great service to their neighborhoods through greening and small scale food production, but critics from this study have claimed that neighborhood gardens do not do enough to solve the food gap. 11% of respondents from the survey “Somewhat Agreed” with the statement that gardens help to alleviate hunger and food insecurity, and 4% (or a total of two respondents) “Disagreed” entirely with the statement. Interestingly enough the two respondents that disagreed with the statement are extensively involved in Philadelphia’s urban agricultural community. One gardener explained this disagreement by identifying disconnects between growing food in the city and distributing food in the city, along with some of the problems about the perceptions of community gardens. The respondent explains that there needs to be a change in the way urban farming is perceived, to be “not something cute, but something revenue producing.” Another respondent says, “Just developing a community garden is nice, but we want this to be something that could be assisting in business development, job creation, [and] financial literacy.” Paradoxically, many of the garden organizers interviewed as part of this research stated that urban farming is not an economically viable industry for city residents. The same garden organizer who talked about business development and job creation denounced that urban farming is a practical job creating industry. The question arises: What then is the role of gardens and producing neighborhood economic benefits?

A few interviewees have commented that Philadelphia’s community gardens cannot utilize their full potential and contribute to the communities because of little and sometimes limited support from the

City. One grassroots garden organizer says, “The fact is this is an all volunteer organization and we don’t have any money... Working with the city in any regard, the people will help you up until the point where you actually need help and then they stop communicating with you... It’s exhausting.”

### **Economic Contributions:**

Surrounding the discourse of urban agriculture is the debate about economic opportunities. Do gardens provide jobs in the neighborhoods they are located in, or are they simply there to provide a service of community greening, education, training and, if possible, foods for underserved families? Many of the gardens who participated in the survey identified *community development*, *community greening*, and *food production* as the top three missions of their work. Other garden mission identifiers that scored high were *education* and *training* (see Table 4, page 19). Additionally, of those gardens interviewed many of them talked about their gardens producing transferable knowledge and skills for teens or adults that will assist in finding gainful employment in sectors other than agriculture. In this way, gardens provide an indirect economic benefit to neighborhoods. One garden organizer shared that a teenager involved in their farm training program found a job at a construction retail store working in the landscape section. The hiring company expressed that they hired the student due to his particular experience on the farm. However, very few gardens provide jobs to disadvantaged minorities directly in the agriculture sector itself. One gardener identified the struggle with diversifying the urban agricultural sector. When asked to specify the racial composition of their organization’s employees, they responded that all of their professional farmers are white, and that “you just don’t find many African Americans who can be farmers in the city.” A few organizations talked about providing gardening jobs to teens. While the programs are very beneficial for the teens, they were short term and more focused on developing transferable skills. There was little mention of long term employment opportunities for any age group.

### **Accessibility to Urban Agriculture:**

Multiple interviewees brought the topic of exclusivity to our attention from various comments made during the interview process. Exclusivity is the exclusion of a particular people or group based on the inability to participate due to financial, racial, or access limitations. There were two discussions arising from field interviews that centered on exclusivity.

In some parts of the city, there is a perception of racial exclusion in the community gardening practices. One garden organizer explained that, “The people who are doing this [urban farming] are mostly 20 to 30 something Caucasian kids, white kids, who are farming in these little communes... there are no older people there, they are all young people and they are all white... it [urban farming] is still a white, top down activity.” Another interviewee who works in one of the poorest minority neighborhoods in the city commented that many African-American do not like to garden: “Teenagers have said to me ‘Oh look, we’re out working in the fields again’”. Urban gardening, according to this interviewee, has a “generational issue”, as most of the gardeners are the grandparents and “people have forgotten how to

garden”. This garden organizer, however, tries to engage children of diverse racial backgrounds in community gardening, and says that “there is a lot of racial tension between Black and Latino children but gardening eases tension. Nature calms them down. If they are kept busy in the garden then fighting decreases.”

The second discussion surrounds the understanding of gardens as either public or private spaces, and the use of fences to either protect valuables (such as tools or crops), or exclude “non-members.” Discussion about the use of fences is situated in the community greening aspect of community gardens. If there are fences that keep certain people out, how can the gardens be seen as community greening? One garden interviewed talked about fences as being “a sign of the times,” referring to the fact that people have personal items (tools and produce) in their garden and if there was no fence, they would be stolen. The person interviewed stated that, “This isn’t a public park, it is owned by [A Philadelphia based Land Trust], there are people who have their things in their gardens that are theirs, they are not for the public.” A different garden offered the contrary opinion about the use of fences. There is no fence on their garden site, and it will remain that way. This garden organizer states, “There is no fence...People always say, ‘don’t people steal vegetables?’ No, because the community runs this facility. If it’s [community garden] something that outsiders are running and you have a fence around it of course people are going to steal stuff because its outsiders doing things in your neighborhood. If it’s something that is of your neighborhood that is totally open... and people in your neighborhood run it, nobody steals things.”

## CONCLUSION

Is urban agriculture solving the food gap? In many neighborhoods, it has a significant impact by growing and distributing food to underserved and underrepresented communities. From the survey results, we found there to be three distinct, but overlapping models of urban agriculture in Philadelphia; the traditional community garden, the CBO or CDC run garden or farm, and the entrepreneurial farm. These three models provide different services to different demographics in the city and do so for different reasons. The primary mission and services of the various organizations are *community greening, food production, community development, and education*. They provided these services to low and middle income households, and to school age children. Additional findings surrounded food distribution models, which were broken into three separate modes of distribution. They were, in order, *informal modes of distribution, sales, and donations*. These three distribution models brought fresh food to all 12 planning analysis zones throughout the city, with the majority of gardens being located in North and West Philadelphia where food insecurity is the most severe.

Follow-up in-depth interviews showed more specifically how gardens achieved their missions of impacting their surrounding neighborhoods. Gardens expressed that one of their most important



impacts was achieved by creating knowledge of local produce for a generation unfamiliar with the production of food. Additionally, gardens wanted to create this knowledge by distributing food to underserved neighborhoods through any of the aforementioned distribution modes. By working to create knowledge around fresh food gardens are creating a higher demand for fresh produce and working to create healthier neighborhood residents. Gardens are also creating indirect economic opportunities for their neighborhood through hands on training in a professional setting. A variety of transferable skills are assisting teens to find gainful employment through garden programs.

The urban agriculture community in Philadelphia is an extensive network of farms, vacant lot gardens, and backyard garden ventures, and the people doing the work are making a valiant attempt to remediate vacant land. The discussion around urban farming is extensive and research needs to continue in order to understand more about the role of city gardens in addressing food inequality, public health issues, land use issues, and contributing to the local foodshed. Based on this study, we recommend the following research questions to explore in future:

- Which community garden model and/or distribution model works best at reducing food insecurity? Is the model community generated or imposed upon the community?
- Is the participation level at different neighborhoods proportionate to the racial profile of those neighborhoods? Is urban farming primarily a “white, top down activity?” And if so, can this change? If it does change, will communities gain greater food security?
- Can urban food production be a community economic development tool that could bring local food self-sufficiency? Can urban agriculture activities contribute to community wealth generation, decrease unemployment, provide youth entrepreneurial training, and promote self-employment, and how so?
- Is urban farming a beneficial land use planning technique for vacant or abandoned lands in post-industrial cities?
- Does an efficient community social network of community gardens, CBOs, and CDCs influence higher community food security? Does community gardening contribute to higher rates of community engagement and thus enhance community efficacy through education, training, and outreach programs?

## APPENDIX - A

*Variables used in food insecurity map (questions from the Southeastern Pennsylvania Household Health Survey)*

Original Survey Question #	Question	Response Format
1.	Would you say your health, in general, is excellent, very good, good, fair, or poor?	1=Excellent 2=Very Good 3=Good 4=Fair 5=Poor
3.	Have you EVER been told by a doctor or other health professional that you have or had: Diabetes	1=Yes 2=No 3=Only during pregnancy
7.	Have you EVER been told by a doctor or other health professional that you have high blood pressure or hypertension	1=Yes 2=No 3=Only during pregnancy
39.	In the past 12 months, since (date one year ago) did you or other adults in your household ever cut the size of your meals or skip meals because there was not enough money in the budget for food?	1=Yes 2=No
47b.	Obesity Level	1=Underweight 2=Normal 3=Overweight 4=Obese
65.	How many servings of fruits and vegetables do you eat on a typical day? A serving of a fruit or vegetable is equal to a medium apple, half a cup of peas or half a large banana.	# of servings
65.1.	During the PAST MONTH, how many times per day, week, or month did you drink SODA such as Coke or 7-Up? Do not include diet soda.	1=Per day 2=Per week 3=Per month 7=Did not drink SODA in past month
65.2.	During the PAST MONTH, how many times per day, week, or month did you drink FRUIT DRINKS or BOTTLED TEAS such as Snapple, Hugs, lemonade, or Kool-Aid? Do not include diet drinks.	1=Per day 2=Per week 3=Per month 7=Did not drink FRUIT DRINKS or BOTTLED TEAS in past month
66.	How easy or difficult is it for you to find fruits or vegetables in your neighborhood? Would you say that is very easy, easy, difficult or very difficult?	1=Very easy 2=Easy 3=Difficult 4=Very difficult
67.	How would you rate the overall quality of groceries available in your neighborhood? Would you say it is excellent, good, fair, or poor?	1=Excellent 2=Good 3=Fair 4=Poor
68.	Do you HAVE to travel outside your neighborhood to go to a supermarket?	1=Yes 2=No
69a.	In the past seven days, how many times did you eat food from a fast food restaurant, such as McDonalds, Pizza Hut or Crown Fried Chicken?	# of times

82.	How many local groups or organizations in your neighborhood do you currently participate in such as social, political, religious, school-related, or athletic organizations?	# of organizations
85.	Using the following scale, please rate how likely people in your neighborhood are willing to help their neighbors with routine activities such as picking up trash cans, or helping shovel snow. Would you say that most people in your neighborhood are always, often, sometimes, rarely, or never willing to help their neighbors?	1=Always 2=Often 3=Sometimes 4=Rarely 5=Never
86.	Have people in your neighborhood ever worked together to improve your neighborhood? For example, through a neighborhood watch, creating a community garden, building a community playground, or participating in a block party?	1=Yes 2=No
87.	Please tell me if you strongly agree, agree, disagree, or strongly disagree with the following statement: I feel that I belong and am a part of the neighborhood.	1=Strongly agree 2=Agree 3=Disagree 4=Strongly disagree
304.	Which of the following best describes the main wage earner's current employment situation?	1=Employed full-time 2=Employed part-time 3=Unemployed but looking for work 4=Unemployed and not looking for work 5=Retired 6=Unable to work/Disabled 7=Homemaker 8=Full-time student/Job training
306.	What was the last grade of school that you completed?	1=Less than high school graduate (0-11 years) 2=High school graduate (12 years) 3=Some college (13-15 years) 4=College graduate (16 years) 5=Post-college (more than 16 years)
323.	Does anyone in your family, <u>living in this household</u> , receive any of the following?	
323b.	SSI (Supplemental Security Income)	1=Yes 2=No
323c.	SSDI (Social Security Disability Insurance)	1=Yes 2=No
323e.	Food Stamps	1=Yes 2=No
323g.	WIC Program benefits (Women, Infant and Children Food Supplement)	1=Yes 2=No
323a.	TANF (formerly known as AFDC)	1=Yes 2=No
	Imputed poverty variables	1=Poor-below 200% of federal poverty level 2=Non Poor-at or above 200% of the federal poverty level

96.1.	How often do you use the Internet? Would you say...	1=Several times a day 2=Once a day 3=Several times a week 4=Once a week 5=Once a month 6=Less than once a month, or 7=Never
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## APPENDIX - B

### CSC Survey of Community Gardens (and Urban Farms)

#### Section A: The Garden – Produce and Participants

1. What is the name of your organization?
2. When was the organization formed?
3. How many community gardens do you own, manage, or operate?
4. Please provide the following information for each of the gardens.

Garden name	Location (street address)	Year established	Size (sq ft)	Paid staff (full-time equivalents)	Volunteers (average number in a month)	Volunteers (average hours in a month)

5. What words or groups of words best characterize your garden's mission?

*Answer using the following scale: most important (5) to least important (1)*

	5	4	3	2	1
Business or Entrepreneurial					
Charity (to food cupboards, etc)					
Community Development					
Community Greening					
Education					
Food Production					
Training					
Other					

6. Do you have a formal working relationship (i.e. joint venture, partnership) with any of the following organizations?

*Check all that apply*

- a. City of Philadelphia
- b. Delaware Valley Regional Planning Commission
- c. Neighborhood Garden Association
- d. Philadelphia Orchard Project
- e. Penn State Extension
- f. Pennsylvania Horticulture Society (PHS)
- g. Other CBO/CDC (please specify) \_\_\_\_\_
- h. No, we do not have formal partnership with anyone

7. When is the bulk of your food grown?

*Answer using the following scale: heaviest growth (4) to least growth (1)*

	4	3	2	1
Spring				
Summer				
Fall				
Winter				

8. Do you sell the produce?

- a. Yes  
b. No

9. If you answered "yes" to the previous question, approximately how many lbs. of produce do you sell each year?

10. Who are the main participants of your garden? *Participation includes food production, distribution, and community outreach Answer using the following scale: most involved (5) to least involved (1)*

	5	4	3	2	1
Lower income households					
Middle income households					
Upper income households					
Households living with government assistance					
School children					
Seniors					
Other					

11. Who are the main recipients of produce? *Recipients include those who purchase, receive donations, and/or harvest Answer using the following scale: most involved (5) to least involved (1)*

	5	4	3	2	1
Lower income households					
Middle income households					
Upper income households					
Households living with government assistance					
School children					
Seniors					
Other					

12. How does your garden distribute the produce? *Answer using the following scale: greatest (5) to least (1)*

	5	4	3	2	1
Sold at Farmers Market					
Distributed through Community Supported Agriculture					
Harvested by Participants					
Distributed by Participants					
Donated to Food Cupboards					
Other					

13. If you distribute the produce to a food cupboard, please provide the name and address of the cupboard.

*If you donate to more than one cupboard please list all*

14. Approximately how many lbs. of produce do you donate each year? *Include any type of donation, not only to food cupboards*

15. What are the primary sources of funding for your garden/s? *Answer using the following scale: greatest (5) to least (1)*

	5	4	3	2	1
Business product donations (i.e. seeds, etc.)					
Grants					
Local business monetary donations					
Individual monetary donations					
Other					

### **Section B: Community Engagement**

16. How do you geographically define the neighborhood your garden works within?  
*i.e. Nicetown, Fishtown, etc. or use street names as boundary markers*
17. Do you consider your neighborhood a “food desert”? *A food desert can be defined as a neighborhood with very limited or no access to fresh food*
- Yes
  - No
  - Not sure
18. Does your neighborhood have the following fresh food outlets? *Check all that apply*
- Farm Stand
  - Farmers Market
  - Grocery Store
  - Healthy Corner Store
  - Supermarket
  - Other (please specify) \_\_\_\_\_
19. Approximately how many people did your garden serve in the last fiscal year?  
*This may include produce sales and donations*
20. What types of events are hosted by your garden or organization? *Check all that apply*
- Block parties
  - Cooking demonstrations
  - Movie events
  - Music events
  - Potluck parties
  - Trainings and workshops
  - Other (please specify) \_\_\_\_\_
  - None
21. If your garden or organization hosts events, please indicate how many people in the past twelve months participated in these events.
22. Does your garden serve people living outside the neighborhood?
- Yes
  - No
23. How many farmers/gardeners from your neighborhood actively participate in your garden?
24. What is the average age of the active farmers/gardeners?
25. What is the primary race/ethnicity of the active farmers/gardeners?
26. Do you have a membership fee?
- Yes
  - No
27. If you answered “yes” to the previous question, how much do participants pay per growing season?

28. How often do you have community meetings?
- 1-2 times a month
  - 1-2 times in six months
  - 1-2 times in a year
  - Other (please specify) \_\_\_\_\_
29. What is the level of participation in these community meetings? *Please mention the average number of attendees at a meeting*
30. Do you use Internet and other digital technologies to communicate with members (Paying members, farmers/gardeners and or the community stakeholders who attend community meetings)?
- Yes
  - No
31. Do you use Internet and other digital technologies to promote garden activities?
- Yes
  - No
32. If you answered “yes” to one of the previous two questions, please check the ways in which you use technology.
- Website
  - E-mail
  - Social Network (*i.e.* Facebook, Twitter)
  - Blog
  - Text Message
  - Other (please specify) \_\_\_\_\_

33. What is your preferred way to communicate with gardeners, community members, and partners? *Answer using the following scale: most preferred (5) to least preferred (1)*

	5	4	3	2	1
Email					
Leaflet					
Letter					
Newsletter					
Phone Call					
Poster					
Social Networking Announcement/Message					
Text Message					
Web Site Announcement					
Other					

34. Philadelphia’s community gardens help providing fresh food access and alleviating food insecurity and hunger in lower income neighborhoods. Do you agree with this statement?
- Strongly Agree
  - Agree
  - Somehow Agree
  - Disagree
35. Would you be willing to be contacted for any follow up questions pertaining to this study?
- Yes
  - No
36. If you answered "yes" to the previous question, please list a name, phone number, and email of the person we can contact.