Community Oasis: How does the Dudley Greenhouse Build Social Capital to Revitalize the Dudley Neighborhood and What Lessons May Be Offered for Other Communities Interested in Embarking on Greenhouse Efforts?

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Submitted to the MIT Department of Urban Studies and Planning in Partial Fulfillment of the Requirements for the Degree of

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Abstract

This thesis proposes that social capital, as the vehicle for community-building at a community-based scale, can address the strains placed on a neighborhood from revitalization. This strategy can play a vital role in the urban design process of the local neighborhood. My thesis presents a case study of the Dudley Greenhouse in Dudley Square, Boston, Massachusetts, which plays a role in revitalizing the local neighborhood by building social capital in the space. Residents are suffering from unsustainable development, poverty, unemployment, crimes, and investment isolation. After many years of grass-roots efforts, the Dudley neighborhood revitalization is gathering momentum. The Dudley Greenhouse is a result of very deliberate organization and community-building strategies. It builds social capital to support the people in this low-income neighborhood. The structure and relationships in the Dudley neighborhood are rebuilt to reconnect the isolated community with resources of the city and region. Other than simply offering financial benefits and/or services to the low-income people, the Dudley Greenhouse builds up the networks of local residents through a process that supports their common values and contributions in the improvement of the local community.
The reputation of the Dudley Greenhouse is overwhelmingly positive. The users of the greenhouse are excited to describe the progress they have made toward the goals in different stories, and expressing the desire of the continuous participation. Participants are gaining increased food produces and access to them, building community through networking with others in the communal gathering space with multiple links to the outside areas. All the evidence point to the significance of the combination of physical construction as an incubator and storage, social capital creation as a community revitalization engine, and the mechanism of such non-economic, less costly forms of solutions which can be an important source and addition of power and influence in the urban design process.

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Acknowledgement

To angels nearby.
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Chapter I: Introduction

Every city's strategy is the products of its local conditions, restrictions, interests, politics, and culture. The neighborhood of Dudley in Boston, Massachusetts utilizes the unique strategy of a greenhouse to accomplish goals of community revitalization. I am interested in the Dudley Greenhouse case for several reasons.

The inspiration comes from the state of harmony inside the community greenhouse in the Dudley neighborhood, which is located in once a burnt-out and abandoned area in Boston. The Dudley Greenhouse plays a role as a community oasis, which triggers my interest in exploring how both physical structure and the creation of social capital revitalize the Dudley neighborhood by increasing residents' satisfaction and living conditions. My observations of public engagement and members' pride and satisfaction with the Dudley Greenhouse are presented to understand how the greenhouse contributes to the community and its members and other organizations socially, psychologically, physically, ecologically, and economically. By analyzing how the greenhouse increases residents' satisfaction and living conditions in the neighborhood, and what relationships are built between the

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1 Source from Panaramio.
greenhouse and other institutions, my research studies the mechanism of social capital in community revitalization.

Figure 2 Public engagement in the greenhouse

It is of great importance to me that the value of the social networking is addressed in the urban design process of local neighborhood revitalization. The makers of neighborhoods, communities, and cities are giving an increasing amount of attention to the physical characteristics of our environment, such as the typology of the buildings, the block appearance, and the direction of city making. However, it is not enough if we merely consider the physical elements without an equal or even greater concentration on human beings and the potential synergy between the built environment and social capital.

The purpose of this thesis is to call attention to the combination of physical construction as an incubator and storage, social capital creation as a community revitalization engine, and the mechanism of such non-economic, less costly forms of solutions which can be an important source and addition of power and influence in the urban design process. The implications and lessons learned from the Dudley Greenhouse are practical and precious for reproducing the benefits from this initiative in other places, such as the residential communities in China, to build social networks and social capital in the existing

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2 Source from author.
communities by the establishment of facilities, such as gardens on unused land. The lessons from the Dudley Greenhouse also offer a new perspective and method to increase social diversity, to raise the awareness of health and wellness, and to inspire and educate youth, adults and seniors for creating a sustainable system to uplift communities.

I began my field research in October, 2014 to collect and document the work and life in the greenhouse by my involvement in the events in the greenhouse. After the introduction, my thesis expands with the sociological terminology to be more specific about the definition and function of the social capital created in the greenhouse in Chapter II. I conduct the quantitative and qualitative descriptions of the Dudley neighborhood, and the Dudley Greenhouse as the social infrastructure that provides both the space and capacity of a wide range of activities in Chapter III. Chapter IV analyzes the mechanism by which the Dudley Greenhouse uses its resources to build social capital and sustain long-term motivation for community engagement, participation and the collaborations with other institutions. I also evaluate the merits and benefits of three other case studies (Dig Deep Farms & Produce, HOPE Collaborative, and Share & Harvest Farm). The conclusion and the future strategies for the communities interested in embarking on greenhouse efforts are presented in Chapter V.
Chapter II: Social Capital

2.1. Definition

Numerous journals and scholarly articles have demonstrated that social capital has the ability to cure maladies at home and abroad. Social capital has become one of the most popular sociological concepts that has been exported into everyday language during recent years. Current economic models realize that if economic development practitioners are concerned about alleviating poverty in inner cities, they should include an assessment of the social functions as well as economic functions in their assessments.

Despite generally diverse discussions and explorations, research focusing on the creation and maintenance of social capital in a community garden and the consequence of the process is still of necessity. However, my thesis does not try to describe the whole picture of the background, origin, and flowing development of social capital which would be tantamount to revisiting the nation’s history and sociology’s major research process through centuries. Rather, my research focuses attention on the positive consequences of sociability, and places these positive consequences into the framework of a broader discussion of causality.

As the literature and empirical findings show, through the relationship with customers and organizations both inside and outside of the neighborhood, social capital helps to build up businesses whose generation is necessary for poverty alleviation. Social capital was first defined by Bourdieu as “the aggregate of the actual or potential resources that are linked to the possession of a durable network of more or fewer institutionalized relationships of mutual acquisition or recognition – or in other words, to membership in a group – which provides each of its members the backing of a collectivity-owned capital.” Bourdieu focuses on the benefits accruing to individuals, which are the basis of the solidarity, by virtue of participation in groups and on the deliberate construction of sociability for the

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purpose of creating social capital. In his definition, social capital is decomposed into two elements – the social relationship giving access to resources possessed by members’ associates, and the amount and quality of those resources. Bourdieu emphasizes the fungibility of different forms of capital and the ultimate transformation of economic capital. Hence, through social capital, members could have accessibility to economic resources.

By Bourdieu’s definition, a deliberate integration of cultural resources and economic investment is vital to the acquisition of social capital. Economist Glen Loury came upon the term in the aspect of racial income inequality. Legal prohibitions against employer’s racial taste and implementation of equal opportunity programs would not reduce racial inequalities because the material resource poverty of black parents would be inherited to their children alongside the poor connections of young black workers to the labor market and their lack of information about opportunities⁴.

After Loury paved the way, Coleman defined social capital by its function. “A variety of entities with two elements in common: They all consist of some aspect of social structures, and they facilitate certain action of actors – whether a person or corporate actors – within the structure.”⁵ He defines social capital as a productive structure of social relationships. Under the term, Coleman includes some of the mechanisms that generate social capital, such as reciprocity expectations and group enforcement of norms, and the privileged consequences within the social organization.

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2.2. Function

In my literature review, I find that researchers and scholars make it possible to examine three fundamental functions of social capital: (1) as a source of social control; (2) as a source of family support; (3) as a source of benefits through extra-familial networks.  

Social control has been identified by a series of studies that focus on rule enforcement. In these studies, particularly among parents, teachers, and policemen, the dense social networks provide discipline and compliance among those under their charge. Zhou & Bankston offer their study in a Vietnamese community located in New Orleans to emphasize this function: “Both parents and children are constantly observed as under a ‘Vietnamese microscope.’ If a child flunks out or drops out of a school, or if a boy falls into a gang or a girl becomes pregnant without getting married, he or she brings shame not only to himself or herself but also to the family.”

Coleman’s earlier essays mention the disappearance of informal family structures and community structures which produce the second type of function – family support. In order to avoid the cost of professional training, the language barriers, and social network boundaries, Asian immigrant mothers prepare themselves with other group members to acquire the knowledge and skills, and purchase second copies of school textbooks, to help their offspring with homework. Therefore, the children’s education and personality

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6 Research by others categorized and illustrated by author.
development are enriched. Another example is Gold's analysis of Israeli immigrant families in the United States. While men develop a social network and a positive sense of self, women often stay at home with the task of caring children in a strange new country. Motivated by their desire to provide children with some forms of Israeli-style up-bringing, women have developed programs for the Israeli community's young people. The close community bonds facilitate the supervision and education of children because the adults know the children familiarly and feeling responsible for their well-being. By their linkage in the communal activities and organizations, activists both benefit from and contribute to the communal structure.9 This second function of social capital is a counterpart of the first function and compensates for it. The third function is the most common function that contributes to the network beyond the immediate family. In Anheier et, al.'s analysis, the networks among the city's elites with restricted access to them are very strong10.

2.3. Mechanism

The network structures that create social capital have been argued in two streams: network closure and social holes. In the closure argument, a person or an organization must be related to others who are the actual source and have the advantage of possessing social capital. Coleman discussed closure as the guaranteed observation of social norms among a certain number of people with sufficient social ties. "The key idea is that networks with closure – that is to say networks in which everyone is connected such that no one can escape the notice of others, which in operational terms usually means a dense network – are the source of social capital."11 Coleman refers the internalized norm to an instance: "effective norms that inhibit crime make it possible to walk freely outside at night in a city and enable old persons to leave their houses without fear for their safety."12 The existence

of such a norm provides a local rule appropriable to all members of the community. While scholars emphasizes the dense networks as a necessary condition for the emergence of social capital, Burt views the absence of ties as "structural holes"\(^{13}\) that facilitate individual mobility. A structural hole in a network exists when there is a separation between nonredundant contacts. For instance, each primary contact leads to mutual cluster of distant contacts that share the information when the primary contacts do not have any direct ties to another primary contact. The accumulation of obligation from others based on the norm of reciprocity makes up the donors’ motivation of providing privileged access to resources in the expectation of future repayment.

Figure 4 from left to right: network expansion; structural indicator of redundancy\(^{14}\)

Social networking in community-building is the main approach to building social capital when the revitalization process is embedded in the local context. Social networking “... is an asset-oriented, people-based approach that supports people in poor neighborhoods as they rebuild social structures and relationships that may have been weakened by decades of outmigration, disinvestment, and isolation.”\(^{15}\)

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\(^{14}\) Source from Ronald S. Burt.

It is understandable that recipients desire access to valuable assets. Of equal importance is the motivation of the donors in exchanges mediated by social capital. Community networks carry invaluable information such as educational resources and employment opportunities concerning paths to success. Networking between organizations is currently a hot topic, but it is not a new field of research. Three types of community development networks that have been identified in scholarly research are useful for my analysis: hub-spoke, peer-to-peer, and intermediary networks. In hub-spoke networks, the community-based organization holds a central, initiating position. Peer-to-peer networks are characterized by a lack of one dominant, central actor. Intermediary networks involve a non-community-based organization entity such as a community college or community development collaborative that takes the lead role in network formation. The relationships created and nurtured by such community structures become a kind of social capital.

![Network Diagrams]

Figure 5 from left to right: hub-spoke type; peer-to-peer type

Instead of offering a passive model by which organizations provide services to residents, community-building inspires and encourages the internal desire and motivation of residents to take personal responsibility and leadership in the revitalization process of their neighborhood. Residents have the opportunity to create the collaborations and partnerships

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17 Source from author.
spontaneously with education and research institutes, non-profit agencies, local businesses, charitable foundations, governments, and other institutions by taking advantage of the existing resources of the local neighborhood. Relationship building through community-building focuses the process to build the independence of individuals and increase the healthy functioning of the community as a reciprocal service from one to another.

The relationships among participants and institutions concentrate the structure of community on both place-based and people-based strategies with a bottom-up, resident-driven perspective. Historically, most organizations' programs have long stories of forming relationships with other institutions. The typical types of traditional institutions and organizations may include:

- Community-based organizations
- Education institutions
- Churches
- Government agencies at local levels
- Funders
- Private sector corporations
- Microenterprise programs

\(^{18}\) Source from author.
At the broadest scale, one may have a consummatory or instrumental motivation to form relationships with others. People have a class consciousness in a common situation. For instance, workers learn to identify with each other and support each other’s initiatives by being thrown together. In this situation, social capital is an emergent product of a common fate, called bounded solidarity. Black residents in Roxbury protested racial discrimination in community activism campaigns such as “Boston Jobs for Boston Residents” for equitable hiring practices. Although the inadequate education for residents in Roxbury left them unprepared to compete in the job market, this history of community engagement and consensus provides the prerequisite for creating social capital in the common value of the residents.

Currently, social networks among participants and organizations are beginning to create a spider web of relationships across disadvantaged neighborhoods with intra- and inter-programs that typically involve the participants of events, and networks between the Dudley Greenhouse and other institutions. However, the residents are lacking collective gathering space and opportunities for self-improvement for future careers.
Chapter III: The History of the Dudley Neighborhood

Roxbury is a multi-racial community that has experienced drastic economic and demographic changes from a one-time affluent residential community to an inner-city neighborhood suffering economic decline over the past century. The black were bought to Roxbury as slaves and worked primarily as house servants since the 1600s. Over the past decades, community groups have advocated for improved living conditions, more employment opportunities, less crime, and economic revitalization in Roxbury. Its rich history and diverse experiences call a vital attention to its context and play a significant role in the future. This chapter begins with the history of Roxbury and the background of the community gardens, and current land use situation and demographical information, then goes into the site, design, and planning of the greenhouse.

3.1. History of settlement

Roxbury was founded by English colonists in 1630 for access to resources such as open farmland, timber, and stone for building. In the 17th and 18th centuries, farming was the basis of Roxbury’s economy. As the town grew, some fine residences were built that are now among the few 18th century houses remaining in Boston. The location made the town strategically important during the Revolutionary War. American society went through many changes after the Revolution. Instead of living near their work in the city, people preferred to live in freestanding, single-family houses with yards and trees. Roxbury became a suburb alongside the city growth and transportation development. The first developments took place in the 1820s, when a horsedrawn bus line was established along Washington Street, linking Roxbury to Boston for commuters. The original farmland started to be divided into single-family dwellings. When electric trolley service began in 1887, more and more families poured into the neighborhood, creating a market for diverse types of housing. Lower Roxbury had industrial land uses such as mills and tanneries. Factories and warehouses occupied the land which were marshes before the landfill. In
1868, the citizens in Roxbury voted to incorporate as a city to meet the need for more municipal services.

Until about 1900, Roxbury was the community with a large proportion of English, Irish, and German immigrants, and their descendants. In the early 20th century as a farming town on the outskirts of Boston, Roxbury was one of the few places open to African American settlements, and became more diverse with the establishment of a Jewish community. Throughout the United States, African Americans had been persecuted and deprived of the rights of home ownership by processes of redlining and discrimination. In the 1940s and 1950s African Americans began to migrate from the American south, making Roxbury a center of the black culture after waves of immigrants came to Roxbury.

With the explosion of suburbanization after World War II (1939–1945), Boston suffered from significant industrial job loss during the period of 1947 to 1975 while African Americans migrated north seeking industrial employment. During this process of resource reallocation between the city core disinvestment and suburban over-investment, racial segregation was embedded. Boston entered a period of “urban decline” which destroyed Roxbury by shrinking jobs and the tax base. In response to the assassination of Martin Luther King Jr., a riot on Blue Hill Avenue saw the looting and burning of stores. The landscape and atmosphere discouraged businesses and commercial development in Dudley, therefore adding to the neighborhood’s decline.

More recent changes in regional infrastructure has contributed to some positive development in Roxbury. The relocation of the Orange line after the Boston Transportation Planning Review and the development of the Southwest Corridor Park spurred major investment, including Roxbury Community College at Roxbury Crossing and Ruggles Center. Shopping and other customer services began to be revitalized by this reinvestment. College students, artists, and young professionals moved into this area in the late 1990s. Recently, grassroots efforts by residents have been the force behind the revitalization. After massive landfill and annexation to Boston, Roxbury is at the city’s geographical center.
3.2. Community activism

Urban segregation and uneven investment between the city and suburbs produced extended histories of social and political struggle, and community activism in Roxbury. By 1960, the composition of Roxbury went from being primarily white to primarily black. Alongside the changing racial composition, Roxbury also experienced a general decline in population and public services from 1950 – 1980. Schools and housing deteriorated and crime rose as Roxbury became Boston’s poorest neighborhood. The proposed expansion of Interstate I-95, which included a section of highway that would pass right through the community, did not help Roxbury’s situation. The highway plan left many lots vacant and many people displaced after the community protest. Black residents in Roxbury protested in community activism campaigns such as “Boston Jobs for Boston Residents” for equitable hiring practices. However, the inadequate education for residents in Roxbury left them unprepared to compete in the job market, and the lack of transportation made it hard for residents of Roxbury to take advantage of the new jobs being created in the industrial sectors in other parts of the city.

Grassroots organizations, such as Freedom House founded in 1949, became active in Roxbury to encourage economic self-efficiency, civic engagement, and social justice. The Dudley neighborhood suffered from illegal dumping on vacant lots and City’s dismal garbage collection and street cleaning. Residents complained about the poor services the City gave to the low-income community. By 1960s, trash and debris dumped by outside contractors became one of the most famous protests after the protestant set fire to the trash. The Dudley Street Neighborhood Initiative formed a campaign called “Don’t Dump On Us” in response to the residents’ priorities. The campaign was “unifying activity bringing together public house tenants, homeowners and business people in the common pursuit of making the neighborhood a better place, while pointing to a version of long-term revitalization.” 19 This history of community engagement and consensus-building is a vital argument for creating social capital in the common value of the residents.

3.3. **Background on community gardens**

The operation of community gardens represents a potential strategy for environmental change to promote active and healthy lifestyles. Researchers Milburn and Vail revealed the common ground of successful community gardens emerged from four criteria: secured land tenure; sustained interest; community development; and appropriate design. They recommend considerations on design, development and administration factors.20 Meehan examines the role of the South End’s community gardens in the urban landscape system and community. The research finds that community gardens reflect the qualities and dynamics of the surrounding neighborhood, both in terms of its positive diversity as well as its conflicts and tensions. The research proves that the community gardens are the unique places in which the benefits are generated by the engagement and interaction of people of different backgrounds by means of their common interest in gardening. Meehan also suggests that community gardens benefit the non-gardeners by holding unique value as open space which fosters interaction and provides visual amenity in the neighborhood.21 Other topics such as the health benefits from community garden are described by researchers. For instance, Wakefield et, al. describe the health benefits derived from a community garden in South-East Toronto, which is perceived to provide not only a base for food production but also community cohesion and social health.22 Numerous studies have shown that community gardens add resiliency to deteriorated social and physical

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environments through new social networks that worked toward physical and social reclamation.\textsuperscript{23,24,25}

\subsection*{3.4. Land use}

Roxbury, in which the Dudley neighborhood is located, once was the focus of the Boston Redevelopment Authority’s urban renewal policies. The area has experienced significant land clearance during the past decades, and most of the land remained as urban redevelopment zones; however, little improvement has actually followed. The tension between the black residents and government built up toward a climax. “During this period, land cleared laid vacant for generations while the population of the black increased from forty thousand in 1950 to over sixty thousand in 1960 as more African Americans were forced out the old South End into parts of Lower Roxbury and North Dorchester by land clearance, building demolition, project construction, and renewal projects.”\textsuperscript{26} According to a survey of Roxbury’s built environment undertaken by GISBoston, Roxbury is denser than Boston when considered as a whole using measures such as FAR (at 0.73) and Lot Coverage (at 26.8%), both of which exceed those of Boston (at 0.51 and 17.8%, respectively). The organization’s report notes that “most of Boston’s density measures appear lower than Roxbury’s due to the city’s comparatively high amount of open space and large, sparsely built industrial areas such as Logan International Airport and the South Boston Waterfront.”\textsuperscript{27} The land use percentage of residential is as high as 46\% (636 acres) in Roxbury while that of institution/exempt is 40\%. Commercial and mixed-use land only occupy a percentage of 4\% which indicates the lack of opportunity for social networking.

\footnotesize{


26 Source from GISBoston’s \textit{Roxbury Neighborhood Study}.

27 Source from GISBoston’s \textit{Roxbury Neighborhood Study}.

23}
A survey of (Zillow) Real Estate trends over the past several years confirmed the general trend that the average land value per acre in Roxbury was 24% less than that of Boston.

Figure 7 the current land use in Roxbury neighborhood. Commercial and mixed-use land only occupy a percentage of 4% which indicates the lack of collective gathering space for social networking.\textsuperscript{28}

\textsuperscript{28} Source from GISBoston's \textit{Roxbury Neighborhood Study}. 
The Dudley Street Neighborhood Initiative (DSNI) created another organization, Dudley Neighbors, Incorporated (DNI), which would focus on the housing development portion of DSNI’s comprehensive master plan to revitalize the neighborhood in the late 1980s. DNI was approved by BRA in 1998 and empowered to acquire privately-owned vacant land in the Dudley Triangle. Through DNI’s combination of vacant lots with City-owned parcels and leasing these to private and nonprofit developers, the number of residents of the Dudley Triangle area has an increase of 8% from 18,401 in 1990 to 19,928 in 2009. The area also has an influx of businesses since the early 1990s. Statistic shows that area businesses numbered 425\(^{30}\) in 1992. By 1999, this number had increased to 643 with a growth of 51%. The data has proved that the Dudley neighborhood has indeed experienced a growth in activity and liveliness with an increase in demand of goods and services. The perception

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29 Source from GISBoston's *Roxbury Neighborhood Study.*
30 Source from an internal DSNI report.
of the neighborhood has also been improved to be a safe and reliable place for residents and businesses. From 1990 to 2000, the number of reported violent crime fell 50% (1,336 and 604, respectively).

![Figure 8 Dudley neighborhood (before and after DNI). Through DNI's combination of vacant lots with City-owned parcels and leasing these to private and nonprofit developers, the area also has an influx of businesses since the early 1990s.]

### 3.5. Demographics

DSNI describes the local demographic makeup as: "the Dudley area of Roxbury/North Dorchester is one of the poorest neighborhoods in Boston. In 2013, Roxbury has a population of 59,626 with a median age of 32.3 years old. This diverse community of African American and Cape Verdean (72%), Latino (24%), and White (4%) residents has a per capita income of $12,332. Approximately 27% of the area’s population falls below the federal poverty level of $17,029 for a family of four and 62% fall below the Family Economic Self-Sufficiency of $37,591. The unemployment rate for the neighborhood is around 13.6%. Just over a quarter of the housing is owner-occupied as compared to the city’s average of 32%.”

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31 Source: The Dudley Street Neighborhood Initiative.
32 Source: The Dudley Street Neighborhood Initiative.
Dudley has a large number of young residents. 38% of the population is 19 years or under with 23% of that group 14 and under. About two-thirds of the population is 35 years and under. Families with children under 18 years represent almost half of Dudley neighborhood households, which is twice as large a share as in Boston citywide. The present situation of so many young residents in the neighborhood is a strong argument and requirement for engaging the young people into shaping the future of the neighborhood. As explained in the following chapters, the history of Dudley and the current function of the greenhouse work to provide leadership opportunities that give young people access to mentors, special training, and each other. One of the most important things is to ask youth to contribute something to the community.

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33 Source from GISBoston's Roxbury Neighborhood Study.
Activities that use food as a vehicle for the conservation of the local food system and collaboration between residents and organizations have already happened in the Dudley neighborhood. Residents are growing food in their front or back yards. In a 1.5 square mile area, one survey notes that "65 homes with raised bed, in-ground, and potted gardens, some over 40 years old, and conservatively estimate the total area under production to be about 1/5 of an acre, growing over 50 types of vegetable and fruit, and yielding over two tons of produces (4400 pounds)." In the survey conducted by Tufts graduate students from the Practical Visionaries Workshop from Tufts graduate students, 65 properties were surveyed and 39 interviews were conducted. 17 out of 39 interviewees report that they like growing plants, another 12 people like to grow plants from their culture. Gardeners’ reasons for gardening:

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34 Source from GISBoston's Roxbury Neighborhood Study.
35 Source from Dudley Resident Gardens: Summer 2013 Survey Results.
36 Practical Visionaries Workshop is a workshop for Tufts UEP graduate students and community leaders in the Great Boston area to reflect, learn, and share on current community issues and challenges.
37 Source from Dudley Resident Gardens: Summer 2013 Survey Results.
Residents express a desire to take part in the community revitalization process, however, collective gathering spaces that could provide the opportunity for engagement or at least communication, are quite limited. From the information provided by Yelp Inc., the volume of social space where people can gather and interact in the Dudley Triangle is as little as zero.

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38 Source from Dudley Resident Gardens: Summer 2013 Survey Results.
Figure 12 from left to right: Cafe & Tea; Bars; Restaurants. There is no café, tea, or bar in the Dudley Triangle. There are only two restaurants at the periphery. 39

3.6. Site, design, and planning

Figure 13 Dudley Greenhouse (under construction) 40

Boston’s Dudley neighborhood contains parts of Lower Roxbury and North Dorchester. There are two regions inside of the Dudley neighborhood. One is the Dudley core area, or the Dudley Village Campus, and the other one is the Dudley Triangle in which the Dudley Greenhouse is located. The Dudley Street neighborhood is a very specific place, in which

39 Source from Yelp Inc.
40 Source from Dudley Street Neighborhood Initiative.
the project scope needs to be rooted deeply in the unique context, take advantage of the community assets, and face specific challenges.

The site for the greenhouse contained the physical remains of the abandoned structures of an old mechanic’s shop – the Brook Avenue Garage. The property was not only an eyesore of the neighborhood, but also posed serious environmental hazards, owing to the nature of the business that had been run there. With a mind of increasing participation in gardening and urban agriculture which could encourage the fruit and vegetable consumption among children, and lead to the increased physical activities and improved nutrition in the low-income populations of color, the Boston Public Health Commission (BPHC) partnered with the Dudley Street Neighborhood Initiative (DSNI) and The Food Project (a non-profit that seeks to create a more sustainable food system in Boston area) to construct and operate a 10,000 square-foot greenhouse on this 13,800 square-foot land in the heart of Boston’s Roxbury neighborhood. The necessary zoning variance was granted in 2003 and the Green Environmental Company was selected to do the construction. In 2004, the Massachusetts Highway Department conducted an extensive environmental site assessment, investigation and remediation which brought down lead and other industrial contamination to acceptable levels. The construction of the greenhouse was completed in 2005 with a total development cost of 1.5 million dollars.
The owner of the greenhouse is the Dudley Street Neighborhood Initiative (DSNI), which leased the facility to The Food Project (TFP) in 2010. TFP has many years of experience of nurturing green space with youth and adults working together to build a sustainable local food system in surrounding neighborhoods. With the resources provided by Boston’s Communities Putting Prevention to Work grant, TFP was able to undertake the steps needed to get the greenhouse into working order.

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41 Source from author.
42 Source from author.
The construction of the greenhouse helps to improve the physical appearance of the neighborhood, provide residents with a space to gather and helps to broker outside resources. The Dudley Greenhouse opened its doors in 2011 as a community green space. It replaced the Brook Avenue Garage, a dilapidated structure that had lain dormant for many years located at 11 Brook Avenue. Within a 10,000 square feet operational greenhouse, the Dudley Greenhouse is not only a community-based food production garden, but also a community center containing youth education, local food market, and community engagement place. The growing space has been organized into four bays. There is one additional smaller bay as the main entrance to the greenhouse and contains the management office, restroom, controls, storage and educational and vegetable washing spaces. The greenhouse is also the space for exhibition and selling market in harvest seasons.

43 Source from author.
Among the four growing bays, two bays are “community gardens” which dedicate to the participation of gardening and urban agriculture. The other two bays are “enterprise bays” allocated to growing produce to be sold at market rate to restaurants and other business. The goal is to generate enough revenue to enable this valuable community learning resource to be financially self-sufficient. A yield of 3,000 – 4,000 pounds of fresh produce per year is expected when the greenhouse is under full production, depending on the varieties of the vegetables planted. Besides the sale of the market rate produces for restaurants as revenue generator, the greenhouse provides about 40% of the produces with a reasonable price for the purchase through Community Supported Agriculture programs. The produce from the community bays might be donated to the hunger relief organizations. It may also serve as food resources for the cooking workshops hosted by TFP, or be sold at the local food market at a substantially reduced price.

44 Source from City of Boston.
45 Community Supported Agriculture is a way for consumers to buy local, seasonal food directly from a farmer. A farmer offers a certain number of “share” of food produces, typically consisting of a box of vegetables. Interested consumers purchase a share (e.g. a “membership” or a “subscription”) and in return receive a box (bag, basket) of seasonal produce each week throughout the farming season.
The prospects are many, and what is most exciting is that these decisions will be made with significant input from the community that the greenhouse will serve. "Since the Dudley Greenhouse is meant to be truly a community space, its activities are guided by an advisory council made up of Dudley community members. The ten-member Greenhouse Community Advisory Council meets every two months to discuss and evaluate the activities and direction of the greenhouse. This council comprises neighborhood residents and gardeners who have thought extensively about the goals of the agriculture and educational programming in the greenhouse and the values that the greenhouse should reflect to the community. The council plans and approves programming, chooses community groups to participate in these programs, and evaluates the success and effects of the work done in the greenhouse.""}

The Food Project (TFP) staff and volunteers in the greenhouse offer training workshops for gardening, new cuisines and cooking methods to celebrate and keep alive the food and community cultures. The late Mayor Menino was a supporter of the greenhouse. He noted at the 2011 opening of the Dudley Greenhouse that "Not too long ago, this site where we’re standing was a garage; it was a blight on the neighborhood, Now it is an agricultural oasis, where residents can learn how to grow their vegetables, and where fresh, and affordable

46 Source from author.
47 Source from The Food Project.
produce will be grown for the city’s farmers’ markets and food banks.” The Dudley Greenhouse serves to not only provide a means for food production, but also as a place to bring disparate communities together. The greenhouse consists of residences, commercial space, farm activities such as planting and harvesting, and physical constructions that may serve the educational institutions in the area with opportunities for skills, science, and botanical research.
Figure 19 Floor plan of the Dudley Greenhouse

Source from author.
Chapter IV: Social Capital on the Site

Social capital “can rise from norms of reciprocity and networks of civic engagement.”

According to Putnam, “networks of civic engagement” represent intense horizontal interaction. The denser such networks in a community, the more likely that its citizens will be able to cooperate for social benefit. Currently, these networks are beginning to spider the web across the disadvantaged neighborhood in Dudley. Ethnic entrepreneurs start business based on their understanding and knowledge about the local community and serve both a social function and economic function in the positive relationship between business owners and customers. As the auto-repair services is one with very low barriers to entry, and the lax regulation and zoning for industrial uses in Dudley, Latino, especially those with inadequate education background, have established a niche in the auto-repair industry. Five of the six auto-repair shops in the Dudley Street neighborhood are Latino owned. “…these business generally have strong ties with the community, provide a necessary service to local residents and bring outside business into the neighborhood…”

Two types of network programs exist in the Dudley Greenhouse: networks intra- and inter-programs that typically involve the participants of events, and networks between the Dudley Greenhouse and other institutions. The purpose of this chapter is to examine: (1) the ways in which the Dudley Greenhouse and the programs inside of it motivate the creation of networks; (2) the content and spectrum to which these networks are embedded within the greenhouse; and (3) the process by which network formation leads to the accumulation of social capital.

4.1. Intra-program networks

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Most of the programs and events in the greenhouse depend on the critical relationship involving participants for the diffusion of knowledge and benefits from gardening. Many residents I interviewed in the Dudley neighborhood have the appeal of being a part of the institutions where they can have the opportunities and learn the skills to make connections with others. They have the expectation to bond with other residents in order to find the identity in the social ties other than dutiful wives and mothers. “A number of our former users are working in the field of organic agriculture or social justice. I think they would agree with their experiences with The Food Project that help to shape they end up going and working. The participants of TFP can gain a lot of benefits for the future career,” says Danielle Andrews. Participants refer new participants to each other; the regular events and meetings also help to keep the relationship sustainably warm and welcome.

In order to form an effective group, there are two experiences that need to be shared: (1) a mutual commitment to devote for the success of collectivity; (2) a willingness to support each other and solve others’ problems through a collective process. The Food Project designs events concerning on thoughts and skills to create the strong relationships between members.

The contents of events include learning, cooperating, consensus-building, and trust-building. The structure of the events and the constituent of the participants provides the foundation for the following interaction, network, organization, and community-building. An interactive workshop about food justice and the food system, called “Food For Thoughts,” was held on 10am – 12pm, February, 7th, 2015. Two males and five females took part in the workshop with six members from The Food Project to learn more about the impact of local and global food system on our community, worker’s rights, and what is genuinely in your food for adults and youth. Through my participation in the “Food For Thoughts”, I framed ten main steps in workshop:

<table>
<thead>
<tr>
<th>Step</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration</td>
<td>Create an email list for future contact.</td>
</tr>
<tr>
<td><strong>Self-introduction</strong></td>
<td><strong>Skills like introducing your child hero will start to celebrate the diversity in the workshop.</strong></td>
</tr>
<tr>
<td>-----------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Introduction to the process of food from growing to produce</strong></td>
<td><strong>The theme of the workshop.</strong></td>
</tr>
<tr>
<td><strong>Image and describe the favorite food/dessert</strong></td>
<td><strong>Use food as the common habit to trigger the intrinsic motivation for discussion.</strong></td>
</tr>
<tr>
<td><strong>Two potatoes example</strong></td>
<td><strong>Use two “invisible” potatoes, one is from the local farmland and the other one is from the industrial food system, to explain the common and different places between the two different food systems. Participants start to compare the advantages and disadvantages of the two food systems.</strong></td>
</tr>
<tr>
<td><strong>Card rearrangement</strong></td>
<td><strong>Participants are divided into two groups that will sort the sequence of cards printed with the image of the process of production steps in two different food systems respectively:</strong></td>
</tr>
<tr>
<td><strong>Consider the proportion of the input and output calories during the transportation of food</strong></td>
<td><strong>Use a quantitative method to prove that the transportation process in industrial food system is a waste of energy and increase the price of the food.</strong></td>
</tr>
<tr>
<td><strong>Workers in the food production system</strong></td>
<td><strong>Narrate the story of the slaves and their maltreatment in the sugarcane field as an example of the insufficient attention for the local food system.</strong></td>
</tr>
<tr>
<td><strong>Additive in our food</strong></td>
<td><strong>Each participant read one kind of the chemical component in the food description by turns to learn about the components of our daily food.</strong></td>
</tr>
<tr>
<td><strong>Sort the saccharinity of beverages</strong></td>
<td><strong>One voluntary participant ranks the saccharinity of beverages with the help of others’ suggestions to achieve the consensus of a healthy choice.</strong></td>
</tr>
</tbody>
</table>
In the event “Starting From Seeds” on March, 7th, 2015, staff from The Food Project held an interactive workshop in recognition of the differences and benefits that plotting and direct seeding may have.

Fifteen people participated in this event to learn and share their experience and information mainly about soil leveling and stirring, plants sowing, treating plants. They also brainstormed to solve other’s problems. The staff from The Food Project stayed in control of time management instead of giving empirical knowledge or mentoring. A participant, who rents her house with a backyard, told me that belonging to these events has given her “community” other than skills. “It helps me become the person who might share life with others in a sweet group ... originally I didn’t come here looking for that, but I’m happy about that. Sometimes we met in our own gardens to learn and share with each other. We want to be together although we are busy because we find our common hobby.” Through my participation, I framed six Steps in the workshop “Starting From Seeds”:

<table>
<thead>
<tr>
<th>Step</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingredients</td>
<td>Recognition of seeds</td>
</tr>
<tr>
<td></td>
<td>Natural/artificial lighting and air circulation</td>
</tr>
</tbody>
</table>

Figure 20 Participants at “Food For Thoughts” workshop

Source from author.
This kind of event is designed not only for the dissemination of knowledge and skills, but also for the share and discussion of common problems. "What we do is to work on relationships," a staff from The Food Project say. The relationships inside of the Dudley Greenhouse formed between gardeners and between gardeners and staff from The Food Project infill the blank part of the community fabric by creating a collective gathering space.

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52 Source from author.
for social networking, and more importantly, providing the training workshops focusing on self-improvement that never existed before. The events provide residents a pathway to discuss and share their common problems and experience. “My crew and I learned some valuable lessons about long-standing community spaces that afternoon. And on a more personal note, there are several people whom I have seen around Dudley Square, but never knew exactly who they were. Eventually, I ran into one or two of them in the greenhouse and that gave us space to really acknowledge each other, introduce ourselves and get to know a little more about what we each were doing in the area. Without the greenhouse, we probably never would have introduced ourselves,” says Lawrence Q. Barriner. Members are familiar with each other and meet on a regular basis even after they have completed the workshop. The social tie provides an access to closer interpersonal relationships and a stronger community.

4.2. Youth program

The seven-week Seed Crew youth program (formerly known as Summer Youth Program) has been a program since the Dudley Greenhouse was built. Teenagers from Greater Boston cultivate their farmland, serve their communities by distributing produce to reduced-price farmers' markets, participate in the workshops with local hunger relief organizations, lead volunteers in the fields, and endeavor to expand community food access. On completing Seed Crew, youth will need to spend the weekend expanding on their knowledge of sustainable agriculture and food justice. They also need to build public speaking skills and readiness. With the necessary knowledge, youth put their knowledge into action by partnering with staff and community members to engage in hands-on projects that further the mission of The Food Project. “One of the things our organization is trying to accomplish is to create a new generation of leaders for our communities and a sustainable food system. We work at a national level and a local level. In Boston, we hire teenagers from different backgrounds to work in the summer and during the school year. We grow food for residents of the city and suburbs. On a national level, we provide leadership opportunities that give young people access to mentors, special training, and each other. One of the most important things about our work is that we ask youth to contribute
something to the community. This is rare these days, but it used to be that young people
grew up on a farm and would help support their family or the community,” says Anim Steel,
the program director at The Food Project.

When hiring the participant, one of the most important criteria is to foster a diverse group
of youth and adults in order to cultivate mutual understanding across racial boundaries.
Youth are paid by their work, which instills them with the sense of responsibility by
providing financial support and encouragement.

4.3. Inter-institution networks

At a larger scale, the focus of the networking among institutions and organizations as the
method of creating social capital and serving communities has risen in importance. With
the increased interconnectedness, the institutions and organizations could come to a result
of doing more, solving more, and influencing more with less. Like the trust-building that
occurs between people in intra-program relationships, the cooperation that occurs in inter-
institution program relationships builds social capital.

53 Source from The Food Project.
While social capital could be produced by several means besides cooperation, the cooperation between community-based organizations is the first and for the most method of building social ties to bind people and their community. The Dudley Greenhouse has played diverse roles within the existing relationships which are either contractual or casual. For the analysis of this thesis, networks include formal and informal linkages and bridges that operate to bind boundaries across organizations, localities, and capacities.

4.3.1. Dudley Street Neighborhood Initiative

![Figure 23 DSNI board of directors](image)

Community-building organizations like the Dudley Street Neighborhood Initiative (DSNI) have created a resident-led process and mechanism for building social capital towards the goal of enhanced quality of life in the neighborhood. Formed in 1984, DSNI was named and started to operate with a selected board in 1985. In 1985, the Dudley Square Plan made by the Boston Redevelopment Authority (BRA) gave DSNI the beginning of organizing and struggles of community control in Roxbury.

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54 Source from Dudley Street Neighborhood Initiative.
In 1987, the *Dudley Street Neighborhood Comprehensive Revitalization Plan* was developed by DSNI and DAC International, Inc. consultants to revitalize the neighborhood and resist the BRA gentrification plan which would have transformed the area into hotels and offices serving downtown Boston. DSNI developed a comprehensive plan with the participation and discussion of African American, Latino, and Cape Verdean residents in the neighborhood. During the “Don’t Dump on Us” campaign, DSNI rebuilt the social fabric.

One year later, DSNI established a Community Land Trust, Dudley Neighbors, Incorporated (DNI), that holds five hundred units of permanently affordable housing, playground, a school, commercial place, urban farm, and the 10,000-square-foot Dudley Greenhouse on a thirty-acre vacant land lot in the Dudley Triangle. DNI’s mission is to implement and develop DSNI’s comprehensive master plan that was drafted by residents to guide the revitalization of the neighborhood. DNI is recognized as one of the nation’s most successful urban community land trusts and serves as a model for other communities organizing to promote development without displacement and long-term control of the land.\(^{55}\) They are the winning providence of fighting against gentrification and displacement.

\(^{55}\) Source from Dudley Neighbors, Incorporated.
Now, DSNI has a very strong impression of community builder’s role that receives the support and approval of its neighborhood. From 1991 to 2010, DNSI membership has risen 400% from 1,000 to 5,002. It has also launched several campaigns. Dudley Greenhouse is one of the organization’s most recent projects; in cooperation with The Food Project, DSNI provides the growing and meeting place for the local residents and organizations. In 1997, DSNI started its sustainable development strategy including its urban agriculture plans, the construction of a community greenhouse on the brownfield site. In 2010, the community greenhouse was leased to The Food Project (TFP) supporting over 25 families growing food in the greenhouse.

4.3.2. The Food Project

TFP has many years of experience of nurturing green space with youth and adults working together to build a sustainable local food system in surrounding neighborhoods. With the resources provided by the Boston’s Communities Putting Prevention to Work grant, TFP was able to undertake the final steps needed to get the greenhouse into working order.

56 Source from Dudley Neighbors, Incorporated.
The inter-institution network that TFP enters into the operation of the Dudley Greenhouse has broadened and deepened the services that DSNI already provides. Since 1991, TFP has built a national model of engaging people in personal and social change through sustainable agriculture. "Each year, TFP works with 120 teenagers and thousands of volunteers to farm on forty acres in eastern Massachusetts in the towns and cities of Beverly, Boston, Lincoln, and Lynn." TFP also has rich experience in the distribution of food from the farm to local residents, donations to hunger relief organizations and forming farmer's markets. In addition to producing and distributing food, TFP provides training resources based on all it has learned since 1991.

TFP asked the candidates, who were seeking raised bed garden space in the community bay of the Dudley Greenhouse, to explain how their proposed project would contribute to the primary goals for the greenhouse identified by Dudley neighborhood residents and refined by the Greenhouse Advisory Committee (GAC). The goals are:

- Increase access to healthy foods for underserved local communities;

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57 Source from The Food Project.
58 Source from The Food Project.
o Build community among participants and/or contribute to the culture of the greater Dudley neighborhood;

o Make productive use of growing space; and

o Connect participants to the food system “from field to fork” (e.g. by incorporating cooking activities into the project).59

As the result, eight of the eighteen applicants received the community bed space for growing from September, 2012 to August, 2013. They are:

- FoodCorp (Orchard Gardens K-8 Pilot School, Dearborn Middle School)
- Islamic Society of Boston Cultural Center (ISBCC)
- Life Symphony
- Mason Pilot Elementary School
- Nubia Seed and Yield
- Vernell Jordan
- The Village for Education and Training (The Village)
- Winthrop Elementary School61

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60 Source from author.
Meimei Street Kitchen is sibling-run food truck and a restaurant serving Chinese-American cuisine made from locally sourced and sustainable ingredients. The three siblings started the restaurant to share their passion for food and bring the diverse experiences together. “For us, food is happiness, entertainment, adventure, education, enjoyment, and love. We look forward to sharing it with you,” Meimei Street Kitchen says. The pride comes from the selection of food sources that come from local small farms. Because of the efforts and investment for the sustainable food system, and the business practices in relationship with local food initiatives, Meimei Street Kitchen was certified to be the Sustainable Business Leader by the Sustainable Business Network of Massachusetts.

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62 Source from Meimei Street Kitchen.
Through serving the vegetables, meat, eggs, and milk coming from within 200 miles of Boston, Meimei Street Kitchen pursues for not only a better-tasting meal, but also supporting the peasants who work so hard to produce them. “I didn’t want to buy a gym membership,” Irene Li, co-founder of Meimei Street Kitchen, says in the Dudley Greenhouse, “I thought that doing some farm work would be a really cool way to meet people and make connections for the truck.” Li used to stop by the greenhouse every Tuesday and Thursday to harvest with the volunteers and

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63 Source from Meimei Street Kitchen.
Interns from The Food Project. Meimei Street Kitchen hired its first employee from the interaction during Li’s work in the greenhouse. The engagement of Meimei Street Kitchen in the greenhouse ensures the solid relationship with the local producer by sharing the common value.

Meimei Street Kitchen is getting to build relationships and plan projects with community organizations such as The Food Project. Meimei Street Kitchen often purchases the seasonal food produces from the Dudley Greenhouse. The restaurant donates profits for the events held in the greenhouse to support the greenhouse. Besides the diverse events in the greenhouse, educational seminars in the restaurant strengthen the connection between food-lovers and food producers.

According to Danielle Andrews, the Dudley Greenhouse Manager, The Food Project is now trading with fifteen restaurants (in addition to Meimei Street Kitchen) including Coppa, Flour, Hungry Mother, and Henrietta’s Table. “There had been restaurants in touch with us over the years about sourcing, but we never felt we could handle it along with the Community Supported Agriculture programs and farmer’s markets,” Danielle Andrews says, “Once we started specializing with the greenhouse, it was much easier to take on.”
4.4. Evaluation of benefits

<table>
<thead>
<tr>
<th>Social Cohesion</th>
<th>Social Capital</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Connectedness in social networks</td>
<td>2. Social support</td>
<td>2. Food accessibility</td>
</tr>
<tr>
<td>5. Collaboration</td>
<td>5. Leadership building</td>
<td>5. Youth development</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7. Individual Independence</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8. Community revitalization</td>
</tr>
</tbody>
</table>

Throughout the cooperation, The Food Project brings together institutions from different backgrounds working toward a common goal of a healthy, sustainable local food system which gives everybody access to fresh and local products. In the year-round-based greenhouse, recommendations and improvement of collaboration are continuing and active throughout the year, which means that the creation of social capital never stops.

TFP conducts mid-year and year-end evaluations with a review of each group’s signed agreement with TFP and list of goals for the year. Group members also rate their progress toward each of their initial goals and to evaluate the technical and programmatic support

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64 Source from Cassandra Landry (Boston Magazine).
65 Source from author.
they receive from TFP. The in-depth discussion and the future possibility of growth will be identified in the meetings between TFP staff and representatives of each group. Based on the collected information, the Dudley Greenhouse Advisory Committee (GAC) drafted a set of eleven intended outcomes across five impact areas. The outcomes are listed in the matrix below along with relevant 2012–2013 greenhouse activities.66

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Justice and fairness</td>
<td>Increases access to fresh, healthy produces for underserved population(s)</td>
</tr>
<tr>
<td></td>
<td>• Food grown is distributed to refugee families, Dudley neighborhood residents (including seniors and lower-income families), and local hunger-relief organizations such as the food pantry run out of the ISBCC mosque</td>
</tr>
<tr>
<td></td>
<td>• Crops grown include culturally significant vegetables that are difficult to find or prohibitively expensive in local stores</td>
</tr>
<tr>
<td></td>
<td>• Tomato “seconds” were sold at a subsidized price at the Dudley Farmers Market</td>
</tr>
<tr>
<td></td>
<td>• Participants have access to a year-round source of food and report a significant decrease in their food spending</td>
</tr>
<tr>
<td></td>
<td>• Special events such as the Thanksgiving Market offer Dorchester and Roxbury residents access to high-quality produce at comparatively low prices</td>
</tr>
<tr>
<td></td>
<td>• Produce grown in and around the greenhouse is donated to local meetings and events (e.g. DSNI meetings)</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Contribution</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contributes to the creation of a fair food system</td>
<td>- Participation in the greenhouse crosses class, ethnic, gender, and age lines</td>
</tr>
<tr>
<td></td>
<td>- Food grown in the greenhouse is distributed to local food pantries and used in school lunches</td>
</tr>
<tr>
<td></td>
<td>- Participants (both adults and children) gain a greater understanding of where food comes from and how they fit into the larger food system</td>
</tr>
<tr>
<td></td>
<td>- Produce from the greenhouse was donated to multiple community events related to food system change including Public Kitchen events (Inspired by the family kitchen as a gathering place, the Public Kitchen invited Upham's Corner and Dudley Street residents to feast, learn, share, imagine, unite and claim public space), The Urban Farming Conference and Haley House’s annual fundraiser “The Souper Bowl”</td>
</tr>
<tr>
<td></td>
<td>- The greenhouse regularly serves as a classroom, with TFP youth interns leading their “Food for Thought” workshops there on weekends and throughout the summer</td>
</tr>
<tr>
<td>Provides food production resources to underserved population(s)</td>
<td>- Greenhouse participants include local residents without adequate growing resources (space, tools, money) of their own and local children and students with no previous exposure to gardening</td>
</tr>
</tbody>
</table>
• All participants are invited to attend Grow Well gardening workshops, and many of them have taken advantage of these learning opportunities

• Senior citizens and persons with disabilities have access to bed space in which to grow food for themselves and their families

• Events like City Farm Fest and Garlic and Compost Day offer local residents access to organic seedlings (14,000+), compost, and garden supplies at cost

• GH growers and other community groups receive bench space to grow seedlings through the spring

• All greenhouse growers receive formal and informal training from the greenhouse manager, thereby building skills that will enable them to be lifelong gardeners

• The greenhouse manager helps larger-scale urban gardeners in Dudley to connect with bulk purchasing pricing for garden supplies (compost, seeds, plastic sheeting for hoop houses, and row cover for raised beds)

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### 2. Strong communities

<table>
<thead>
<tr>
<th>Programming is intentional about using space and programming to build community amongst participants</th>
<th>• Allocation and use of GH space is overseen by a group of neighborhood residents (the GAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Group members are regularly invited to both formal and informal greenhouse</td>
</tr>
</tbody>
</table>
The Dudley neighborhood has a rich culture of food production. The program will build on this and seek out and/or strengthen relationships with our skilled neighborhood home chefs and gardeners.

| The Dudley neighborhood has a rich culture of food production. The program will build on this and seek out and/or strengthen relationships with our skilled neighborhood home chefs and gardeners. | gatherings (e.g. a French toast breakfast, seedling starting day)  
- GH growers report consulting with one another on their gardens and developing friendships while working in close proximity  
- Collaboration between the ISBCC volunteers and Sayed Ali has strengthened the relationship between Nubia and ISBCC  
- The GH is open to the public at least 3x/week, prompting many neighbors and community members to drop by, either for advice or to socialize with one another  
- All community group representatives report feeling like part of a DGH community  
- The requirement that each group contribute 2 hours/month of volunteer service provides increased opportunities for interacting with one another  
- In addition to consulting the GH Manager, growers report enlisting one another’s help in troubleshooting their garden  
- Several growers are talented cooks and/or have a passion for teaching and have volunteered their time leading cooking classes (Fulani) or school visits (Nubia, ISBCC)  
- Participants with extensive gardening knowledge are able to develop their |
teaching skills when hosting visitors and groups
- Food for the Jazz under Glass fundraiser was donated by growers and community members
- Greenhouse produce is used by our volunteer chefs during Eat Well workshops

<table>
<thead>
<tr>
<th>3. Vibrant farms</th>
<th>Growing space is used productively</th>
</tr>
</thead>
</table>
|                  | • While records of pounds harvested are incomplete, observation indicates an increase over the 2011-12 season and suggests that plants were in large part harvested in a timely fashion  
• 100% utilization of bed space  
• Several growers learned and applied the square foot gardening method to maximize their yield; others experimented with vertical growing methods |

<table>
<thead>
<tr>
<th>4. Healthy people</th>
<th>Connects people to the Food System- from “field” to fork (opportunities to grow, taste, cook)</th>
</tr>
</thead>
</table>
|                   | • Students from Mason and Winthrop experience the entire cycle of planting, tending, harvesting, tasting, and cooking GH produce, as do the children in The Village FEAT  
• Most GH growers encourage visitors to taste their crops and to take some home with them  
• Orchard Gardens students participated in planting seedlings, which they ultimately transplanted into their school garden |
| Programming reflects the cultural and spiritual relevance of food to health and well-being | • ISBCC volunteers endeavor to highlight the spiritual aspect of food production for the elementary students they've hosted  
• Many of the crops grown have specific cultural significance to group members (e.g. Nubian greens) |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Unites and inspires participants to grow food and to share food and food cultures</td>
<td>• Participating children often go home with recipes and information about gardening and food-related events</td>
</tr>
<tr>
<td></td>
<td>• GH growers like Rumas and Vernell offer a welcoming setting for visitors and newcomers eager to learn more; most</td>
</tr>
</tbody>
</table>
participants grow increasingly engaged over time
- Celebratory events like the end-of-year harvest gathering are typically potluck-style, with guests encouraged to bring favorite dishes

<table>
<thead>
<tr>
<th>5. Sustainable ecosystems</th>
<th></th>
</tr>
</thead>
</table>
| Production systems are sustainable and based on organic growing guidelines | • All growers receive training from the greenhouse manager in the use of organic fertilizers and are committed to growing in this way
- Fertility management is increasingly centered on locally-produced fish emulsion, leading to decreased reliance on granular manufactured organic fertilizers |
| Wherever possible, systems will incorporate and teach methods that enhance biodiversity, and promote an ecological ethic | • See above |

All greenhouse members and TFP staff are present during the initial meetings to ensure clear planning and transparent goal-setting process. Every participant knows his/her responsibility. During this planning and goal-setting stage, TFP staff will ask about specific goals as many as possible, such as how many people you want to work with, and identify steps need to achieve the goals. During the ongoing period of growth in raised beds, TFP considers the requirement of expertise and management of growers. TFP offers a condensed version of planting basics workshop and planting time management for the less experienced growers. The schedules of workshops are published to make sure that the workshop opportunities are diffused to those who express interest. After a planting season, participants will receive a semi-structured interview invitation for the specifics and
suggestions, such as the primary recipients of food and the number of people involved in the project.

The function of this cooperation process is to assess the achievement of stated goals. More importantly, the feedback on the greenhouse and TFP’s support, and the information on the impact of participation emerge during this whole process. TFP has built up a structure, as Coleman once defined the social capital, in which a variety of entities can not only facilitate certain actions by reciprocity expectations and group enforcement of norms, but also share the consequences within the social organization. The networks that work to build social capital are difficult to capture in evaluations. In order to make them readable and visible, I will use the subsections below to explain the benefits of social capital and relevant groups. The relationship these members are involved with each other and the local community is the link that connects economic development and the community development. This link includes all social norms, shared understanding, trust and other factors that make their relationship productive.

4.4.1. Receivers of food produce

Through the distribution of food products, a number of relevant parties are getting benefits from the Dudley Greenhouse. Group leaders, assistants intending the beds, and local seniors may receive the food products. Elementary and middle school students will eat the food during lunches while ISBCC mosque café and food pantry also provide food from the greenhouse. Besides common goals and each member’s initial goals, TFP also donates and distributes a huge amount of the products to the underserved neighborhood.

Number of participants:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ISBCC</td>
<td>6</td>
</tr>
<tr>
<td>Nubia</td>
<td>6</td>
</tr>
</tbody>
</table>

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Vernell Jordan  5 primary, 3 occasionally
Mason School  1 Food Corps service member, 65 children, 3-5 teachers
Food Corps  1 Food Corp service member, 40 students
The Village  1 adult, 4 groups of siblings
Life Symphony  15-20
Winthrop  50 students, 2 teachers
Total  199-209

Number of recipients of food:

<table>
<thead>
<tr>
<th>Source</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISBCC</td>
<td>Hundreds (anyone who ate at the mosque café)</td>
</tr>
<tr>
<td>Nubia</td>
<td>Hundreds (distributed at food pantry, mosque café, and events for Nubia participants)</td>
</tr>
<tr>
<td>Vernell Jordan</td>
<td>About 6</td>
</tr>
<tr>
<td>Mason School</td>
<td>65 (in-class tastings)</td>
</tr>
<tr>
<td>Food Corps</td>
<td>Nearly 1000 students had an opportunity to try the food when it was featured in school lunches</td>
</tr>
<tr>
<td>The Village</td>
<td>6 families</td>
</tr>
<tr>
<td>Life Symphony</td>
<td>About 20</td>
</tr>
<tr>
<td>Winthrop</td>
<td>50 (in-class tastings)</td>
</tr>
</tbody>
</table>

4.4.2. Public participation and community engagement

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The greenhouse is not only a food production base; it is also an activity incubator. The activities conducted in the greenhouse include instruction in all parts of the gardening process from selecting crops to harvesting and cooking – offered on both a formal, regular basis to consistent visitors and on an informal, sporadic basis to drop-in visitors. The greenhouse tours/field trips are educational opportunities for school groups and other community members with regular children’s classes. “I’m studying every time I come to the greenhouse,” says Ali, from Nubia. The greenhouse will continue to feature cultural-specific crops and cuisines such as Cape Verdean cuisine, Caribbean cuisine, Nigerian cuisine, and Sudanese cuisine to enhance the solidarity of ethnic groups during 2014-2015.

Although much of the current activities in the greenhouse are focused around the eight community bays, multiple events are open to the community because TFP staff always support external groups and individuals. For instance, about 75 people took part in the Garlic Compost Day, which featured garlic tastings and a home composting workshop. The number of participants is as big as 350 in the City Farm Fest (and associated seedling/compost distribution) which is an annual plant and garden supply sale that draws more and more people to the Dudley Greenhouse each May. During the fest,

69 Source from author.
visitors are able to purchase seedlings and participate in kid’s activities. Fifty-five people took advantage to bring their soil samples for testing the contaminants in 2013. While a few of the gardeners have previous connections to each other, they befriended others through gardening in proximity. They also welcome additional events offered by TFP as well as learning from other gardeners.

![Figure 32 Harvest Market](image)

**4.4.3. Individual independence**

The intra-program and inter-institution networking has brought benefits for all the participants from a wide range of sectors to motivate their long-term engagement to possess social capital. The gardeners have learned how to garden or expanded their gardening knowledge in connection with other interested individuals. Other than simply giving money or services to the low-income people, the Dudley Greenhouse builds up the network of local residents through a process that gathers them to share their common values and contributions in improving the local community. The network is a result of very deliberate organization and community-building strategies. All the programs and the people inside are exposed to a common value of a healthy food system including planting and eating. Eating, a casual activity in daily life, has brought

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70 Source from author.
with it an experience of pride and empowerment when the food is coming from what someone has planted.

### 4.4.4. Networks expansion

As a community facility in a multi-cultural neighborhood, the Dudley Greenhouse must meet a wide range of requirements. The relationships among the interested institutions and organizations do not simply add capacity into the greenhouse, they can also help the Dudley Greenhouse link the diverse programs and events to relevant services without organizational leaders having to gain expertise in a certain area. However, all kinds of partnerships are needed to acquire a balance. During the process of building up the relationships of both intra-program and inter-institution, it is of importance to notice conflict, compromise, and negotiation. Researchers tend to believe that “the formation and management of alliance relationships effectively substitutes for the internal capacity and other community-based organizations” whereas in reality “internal capacity-building and external network engagement should be understood as complementary processes.”

### 4.4.5. Youth development

Youth plays a valuable role in energizing communities and creating social change. Being in the greenhouse gives benefits to the younger generation. Youth have the opportunity to learn deeply and sustainably, and work as a group rather than individual heroism through the youth development approaches. As they go through from the basic knowledge of seeding to hands-on practices, they face the challenges and take the responsibility of the whole process of planting. As they grow, they prepare themselves with the leadership and expertise in the food system planning and other fields. This process seems to have a calm effect on some students. At the end of the year, even the

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pickiest students in the youth program are at least willing to sample some new foods. Interviews with the participants also suggest that they have gained not only gardening knowledge and respect for nature, but also the awareness of sharing the space and what they know with others interested in food and gardening. Most of them also enjoy spending time with fellow science research programs.

4.4.6 Food accessibility

Nearly all the current gardeners have access to outdoor garden plots such as the one in the back yard. However, they would be disappointed to lose the opportunity to grow in a year-round greenhouse and grow the food that does not typically thrive in the Massachusetts climate. The Dudley Greenhouse provides a year-round food production base to secure the food supply chain especially in the winter. Gardeners could also maintain their cultural cuisine by planting their cultural vegetables and spices.

4.5. Other cases

Utilizing social capital as the vehicle for community development and revitalization is a common strategy across the world. Due to the different context in the specific locations and demographic information, it is vital to learn widely from others’ strong points and draw on others’ successful experience besides the Dudley Greenhouse. Therefore, this thesis explores three additional cases (two in the U.S. and one in China) to compare their respective diverse conditions, limitations, and advantages. In Dig Deep Farms & Produce case, the mutual respect and collection of expertise and local knowledge meet the requirements with the maximum utilization of the existing community resources. HOPE Collaborative has more achievements in surveying the community fact by conducting the meta-analysis of the food system and a community survey in Oakland. In the last case, China’s Share & Harvest Farm is unfolding the western community-building model in an oriental developing area to live up to the expectations of the healthy organic agricultural produces and sustainable social capital.
4.5.1. Dig Deep Farms & Produce (East Bay area, California)

Figure 33 Dig Deep Farms and Produce’s Firehouse farm

### 4.5.1.1 Background

Ashland and Cherryland comprise one of the most urbanized areas of the unincorporated portion of Alameda County with a combined total population of approximately 38,000 people with diverse cultures and backgrounds. In 1999, Ashland and Cherryland have slightly more women (52%) than men (48%). Similar to the demographics of the Dudley area, Children under 14 years old made up 24% of the community. Seniors (65 and older) made up 12% of the population. The area suffered the disparities of income, wealth, and opportunities along racial and ethnic lines since 1960s’ urbanization and suburbanization. About 40% of households in Ashland and Cherryland earned an income of less than $30,000 in 1999 while half of all households in Alameda County earned more than $46,795. Ashland, Cherryland, and San Lorenzo have some of the highest rates of nutrition-related morbidity in Alameda County, according to a 2010 Health of Alameda County Cities and Places Report. In term of education, about 11% of residents aged 25 and

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72 Source from Rosie Linares.
73 Source from Community Development Agency of Alameda County.
74 Source from U.S. Census Bureau.
older had completed college (bachelor’s degree) or held a graduate/professional degree. For Alameda County as a whole, this figure was 29%. Dig Deep Farms & Produce was formed in 2010 within this context as a local enterprise and a project of the Alameda County Deputy Sheriffs Activities League (started by members of the Alameda County Sheriff’s Office in September of 2004 to create recreational and educational opportunities for children in the Unincorporated Areas of the county).

4.5.1.2. Mission and vision

Dig Deep Farms & Produce expects to bring more employment opportunities, and provide healthy affordable food, while preventing crime, creating a vibrant and sustainable local food economy, and bringing other benefits to support the community.

4.5.1.3. Supporters and operation

With the support of Deputy Sheriffs’ Activities League (DSAL), a grassroots organization that is responsible for the creation of several programs and focusing on crime prevention through the creation of jobs and community revitalization, and the Barack Obama Foundation (created in January 2014 to lay the groundwork for the President and First Lady’s philanthropic activities in public service), Dig Deep Farms & Produce grows vegetables and orchards on about eight acres of land with five sites in the flatlands and the hills of San Leandro and Castro Valley throughout the East Bay area. One of the sites is located on land next to Camp Sweeney, an Alameda County Juvenile Justice facility. It is farmed partially by the volunteers from the facility. The Deputy Sheriffs’ Activities League provided the network to create this farm. When distributing the food produce to Community Supported Agriculture programs, Dig Deep Farms & Produce formed the relationships with local food businesses. By helping the food businesses attract more customers, Dig Deep Farms & Produce sells its farm produces to gain revenue to continue the
operation. As its purpose is revitalizing the local communities, Dig Deep Farms & Produce hired local residents who were from low-income households with at least one child. The crew was lacking in professional business and farming knowledge and experience at the startup phase.

4.5.1.4. Social capital on the site

Due to the lack of knowledge of and experience in gardening in the beginning, the crew showed mistrust into the future of Dig Deep Farms & Produce. Some participants expressed frustration and talked negatively about the revenue Dig Deep Farms & Produce could have the length of time it could last. They talked about the impossibility of achieving the farm’s goals. Dig Deep Farms & Produce faced challenges including attracting customers, financial techniques, conflicts and violence contributing to a tense atmosphere inside. As the Dudley neighborhood using the greenhouse and programs to be the growth machine of social capital, Dig Deep Farms & Produce fosters self-determination at both the organizational and individual levels to build up trust and cooperation.

The management team respects the mood of frustration by a publicly publishing the organization’s financial report, evaluating the sales strategy, and designing new ways to attract customers with the crew in several all-member meetings. Dig Deep Farms & Produce developed three strategies to compensate for deficiencies and to ensure the organization could honor customers’ orders: (1) encouraging the staff to learn part-time about business skills and tacit understanding of the land to build up the competency; (2) According to Katharine Bradley’s field notes for a meeting on March, 3rd, 2011, the farm manager collected and framed the ideas and opinions of the meeting participants in order to maximize the learning achieved from individual’s knowledge and experience about farming; (3) purchasing what it
doesn’t grow from Veritable Vegetable, a mid-size distributor in San Francisco specializing in local and organic produce to supplement its produce.\(^{75}\)

Among the wide range categories of social capital, respect is the significant produce of social capital creation on Dig Deep Farms & Produce’s farms. Iris Marion Yang defines respect as the ability “to be prepared to listen to what they have to say or do what they request because they have some authority, expertise, or influence.”\(^{76}\) “Respect, in this sense, and regarding the values of employees, allows Dig Deep to escape from ideology-imposing practices that might jeopardize self-determination.”\(^{77}\) Benefits happen not only to the organization, but also to the individuals. The continuous workshops provided by Dig Deep Farms & Produce support the sustainability of the pursuit of knowledge, as well as the self-improvement of participants. One crew member has earned high school elective credits by working at Dig Deep Farms & Produce.\(^{78}\)

The strategy of social capital building also includes seeking partnerships with other organizations and high-end restaurants in Alameda County to share the common value of local grown produce. Partners included: “(1) Alameda County General Services Agency, which selected Dig Deep as the Community Supported Agriculture (CSA) provider for a county-wide employee wellness program; (2) Tiburcio Vasquez Health Center, Inc., a non-profit social service provider that contracts with Dig Deep to provide weekly shares of produce to its pregnant clients, who are generally low-income Latinas from the unincorporated areas; and (3) the West Oakland-based food justice organization People’s Grocery, that, among other


\(^{78}\) Source from Katharine Bradley’s field notes.
projects, delivers produce bags to local, low-income customers." Dig Deep Farms & Produce negotiates high prices on the spring special serves that exceed those locally focused CSA.

4.5.2. **HOPE Collaborative (Oakland, California)**

![Image of HOPE Collaborative](image-url)

**Figure 34 Hope Collaborative**

### 4.5.2.1. Background

After high tensions between the black community and the largely white police force during the 1960s, and serious problems with gang-controlled dealing of heroin and cocaine during 1970s, Oakland was consistently listed as one of America’s most crime-ridden cities during the late 1980s and early 1990s. Oakland had an improvement during the mid-1990s with large development and urban renewal projects after the worst urban firestorm in American history on October 20th, 1991; however, the public policy of supporting downtown housing development caused

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80 Source from HOPE Collaborative.
potential rent increases and gentrification that would displace lower-income residents from downtown Oakland into outlying neighborhoods and cities.

Though the economic crises in 2001 and 2008 hampered Oakland’s economic recovery, Oakland has the fifth largest cluster of “elite zip codes” ranked by the number of households with the highest combination of income and education. 37.9% of residents over 25 years of age have bachelor’s degree or higher.\(^8\) Oakland ranks in the top 20 of American cities in median household income, with a 2012 value of $51,863.\(^2\) Oakland is one of the most ethnically diverse major cities in the country. Black residents maintained their status as Oakland's single largest ethnic group as of 2010, forming 27% of the population, followed by non-Hispanic whites at 25.9%, and Hispanics of any race at 25.4%.\(^3\) However, the results of meta-analyses and community survey of HOPE Collaborative suggest that there is no access to healthy and affordable food, and there is a lack of public facilities that provide safe spaces for families and children, even though the living condition has had a big jump.

### 4.5.2.2. Mission and vision

Funded by the W.K. Kellogg Foundation in 2007, HOPE Collaborative focuses health equity efforts in food systems, built environment, and community and youth engagement. Health for Oakland's People and Environment (HOPE) is one of the nine Food and Fitness Initiative sites in the United States. It is a collaborative of public agencies, community-based organizations, and Oakland residents working together to create a vibrant neighborhood with equitable access to affordable, healthy, local grown food; safe and attractive built environment for physical activities in Oakland; and youth programs to cultivate the leadership of community residents in creating policy and system change.

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\(^8\) Source from American Fact Finder.
\(^2\) Source from American Community Survey.
4.5.2.3. Supporters and operation

With the meta-analyses of previous studies related to food systems, the built environment and local sustainable economic development in Oakland, HOPE established a firm base of local knowledge for planning with an assessment protocol, which evaluates accessibility to healthy, affordable local food, the safety of the spaces for physical activities, and the sustainability of local economic development.

![Listening session, Garfield School](image)

Figure 35 Listening session, Garfield School

From 2007 to 2009, HOPE Collaborative conducted a community survey. The data collection and analysis process involved over 400 Oakland residents and 30 organizations. The six micro-zones assessment conducted by HOPE proposed to listen to the residents’ concerns straightforward about food access and cost, physical activity and play, and about the business ownership in the neighborhood. As a result, HOPE get the answer of what are people living everyday lives in Oakland, how to meet their most basic needs for healthy food, safe places, and economic growth by analyzing the collected data. For instance, HOPE gets information that residents cook at home and would like to shop at large grocery stores as well as the farmer’s market and fruit stands for fruits and vegetables. Some

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84 Source from HOPE Collaborative
residents grow vegetables in their backyards. All micro-zones reported that there is no access to healthy and affordable food. There is also a lack of public facilities that provide safe spaces for families and children. HOPE Collaborative developed a Community Action Plan (CAP) for the improvement of food and activity environments in east and west Oakland.

The planning process of HOPE Collaborative is an integration of bottom-up, grassroots approach with professional planning practices. The participants of the planning (participatory data collection, analysis, evaluation, and interpretation) includes local residents, government agencies, and nonprofits. Although the process was proved to be too long to maintain residents’ engagement, it did benefit to gain comprehensive insight into the food-related needs of the Oakland community and combine the scholars and grassroots together.

4.5.3. Share & Harvest Farm (Beijing)

![Image of Share & Harvest Farm](image)

Figure 36 Share & Harvest Farm

4.5.3.1. Background

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85 Source from Yan SHI.
Share & Harvest Farm first appeared in a suburban area of Beijing in 2012. It was built up in the wave of China's development that strives to push the economies forward. Land becomes a scarce commodity for agriculture as more factories and cities may occupy the land and result in more GDP numbers. However, the growth of the population, households' income, and urbanization produces a rising demand for healthy food. “Up to 30 million hectares of farmland is lost annually due to environmental degradation, conversion to industrial use or urbanization,” notes Olivier De Schutter, United Nations Special Rapporteur on the Right to Food in a report. This is the country with 20 percent of the world’s population but only 9 percent of its farmland and 6 percent of its water resources. The changing economic landscape has shifted Chinese lifestyles from the basic demand for cereals, such as rice and wheat, to an increasing demand for fresh vegetables and fruits. The threat from air, soil, and water pollution decreases the available land for farming. “Cabbage has doubled in price since last year,” says XU Shengru, “Everything is much more expensive than last year. We may be dissatisfied, but we still need to eat.”

Figure 37 A vegetable stand at a Beijing supermarket, May 2013

86 Source from United Nations.
87 Source from National Public Radio.
88 Source from International Business Times.
4.5.3.2. Mission and vision

Community Supported Agriculture might be the solution to the quest for food security in China. By providing seasonal organic vegetables, chicken, eggs, and pork directly to the customers and sponsors, Yan SHI and her crew expect to support peasants and protect their vital interests (e.g. fair and reasonable price for their produces, and social status) from being ground down by the industrial food system. Under the food crisis, Share & Harvest Farm is not only a food production base, but also a collaborative community-building engine which guarantees safety growth methods, sustainability in season, the minimum usage of pesticides, and the interaction and networking of the participants.

4.5.3.3. Supporters and operation

Yan SHI started her first business, Little Donkey Citizen Garden, with a diversity of partners after coming back from the U.S in 2008. Three years later, Yan SHI chose to leave Little Donkey Citizen Garden and pilot Share & Harvest Farm with her husband in 2012. As Yan SHI tells me, she could never imagine that she would become the founder of the Share & Harvest Farm, the first CSA program in China, and devotes herself into CSA with the previous experience of being an intern at a farm in the U.S.

Share & Harvest Farm is in the form of cooperative operation. The crew contains fifteen full-time staff living around the farmland with another four volunteers and a foreigner. The main services include food production, customer service, logistics, agricultural activities, and management. All working contents are happening in a common room that makes it possible to collaborate across the work types. Yan SHI and her crew have a selection criteria of peasants. Beijing local peasants mainly supply the fresh agricultural products such as vegetables and meat because the large daily consumption, a high requirement of transport, and short quality guarantee period. For other food
products as rice and apple, the crew will select based on the reputation and place of origin. Some peasants with a motivation of organic farming have proactively sought for collaboration with Share & Harvest Farm for the market expansion.

Once an organic apple farm household with six acres farm land in Shaanxi Province joined Share & Harvest Farm after having trouble with sales. After two years, the farm starts to balance the cost and revenue with an amount of profit. Share & Harvest Farm sent a team to investigate and analyze the utilization of fertilizers, pesticides, quality of irrigation water, and other farming methods on the apple farm which should meet the requirements of the selection of peasants. Yan SHI and her crew expect to build up a moral surveillance system to ensure the food security and support and protect the vital interests of these peasants with organic farming motivation.

![Figure 38 Share & Harvest Farm](image)

4.5.3.4. Social capital on the site

Over 500 members of Share & Harvest Farm receive boxes of fresh vegetables directly from the farm every week via prepayment method to fund the peasants.

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Source from Yan SHI.
Although the community is built up by words of mouth nowadays, a doubt and unwillingness arose when people who wanted to purchase food from Share & Harvest Farm were asked to prepay a certain amount of money and the unit prices of food staff were higher than market price at the beginning. Yan SHI explains the reason that the risk of food yield increases when peasants are encouraged not to use pesticides or any other chemical fertilizer to make sure the health and safety of the food products. Prepayment could create a risk-sharing arrangement as a way to encourage the peasants to utilize healthy growing methods and build up a healthy local food system. The prepaid money can be refunded when the food is in short supply. There are two kinds of membership with differences in membership price and quantity of food:

<table>
<thead>
<tr>
<th>Membership</th>
<th>Prepayment (RMB)</th>
<th>Vegetable (per kg)</th>
<th>Egg (per unit)</th>
<th>Chicken (per unit)</th>
<th>Pork (per kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Membership I</td>
<td>3000</td>
<td>34</td>
<td>3.5</td>
<td>160</td>
<td>120</td>
</tr>
<tr>
<td>Membership II</td>
<td>8000</td>
<td>30</td>
<td>3</td>
<td>150</td>
<td>110</td>
</tr>
<tr>
<td>Market</td>
<td>0</td>
<td>45</td>
<td>4.5</td>
<td>228</td>
<td>180</td>
</tr>
</tbody>
</table>

Figure 39 Share & Harvest Farm Market

Source from Yan SHI.
At present, Share & Harvest Farm has built up relationships with twenty peasants in Shunyi and Tongzhou. The trade process is designed to be of transparency and fairness to protect the peasants’ interests. Unlike the previous trade chain that purchases food products unfairly cheaply from the peasants, Share & Harvest Farm decreases the intermediate channels and concentrates more on providing fair and reasonable income of peasants. For instance, rice farmers double their income by selling organic food products with Share & Harvest Farm.

Share & Harvest Farm has set up a youth program called “Son of the Ground” which provides the opportunity for learning farming knowledge and practices for children. After years of experience in managing and collaborating with peasants and customers, Yan SHI recognizes the importance of the knowledge of a proper diet, and has started to prepare for a real education institute for farming activities and knowledge. Yan SHI and her husband have translated several books, such as “Farmers of Forty Centuries" by F. H. King, from English to Chinese in order to promote the benefits of the organic food system.

![Figure 40 Son of the Ground](image)

Figure 40 Son of the Ground

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9 Source from Yan SHI.
When the Food Project (TFP) staff and volunteers in the Dudley Greenhouse offer new cuisines and cooking methods to celebrate and keep alive the food and community cultures, the seasonal cuisine workshop in Share & Harvest Farm is called “Stone Canteen”. The menu and ingredients highly depend on the food produces in the farm. For instance, one of the most favorite workshop provides instruction for spicy cabbage.

Figure 41 Spicy cabbage workshop

4.6. Stories and interviews

For all of the cases, the stories and interviews of supporters, participants, public officials, and others provides strong support for the idea that greenhouses and community agriculture in urban areas builds social capital and can be an important component of support in communities under stress and undergoing community revitalization.

In Dudley Square, Anim Steel, the Program Director at the Food Project says, “Many of these youth would never have had a chance to meet each other before. They work together to produce food for people who need and want it, and that
creates a bond that wouldn’t have existed before. They feel responsible to someone else. They have to work together to live up to their responsibility. Food can be a vehicle for social change. It brings people in a way that very few other activities can.”

Lawrence Q. Barriner, an urban agriculture policy consultant and previous employee of The Food Project, describes his experience of social networking in the greenhouse with “several people whom I have seen around Dudley Square, but never knew exactly who they were. Eventually, I ran into one or two of them in the greenhouse and that gave us space to really acknowledge each other, introduce ourselves and get to know a little more about what we each were doing in the area. Without the greenhouse, we probably never would have introduced ourselves.”

Danielle Andrews, the Dudley Farm Manager, expresses her opinions from a manager’s perspective. “We have a whole community planning process. We have put a lot of time and energy in identifying gardener and people that would be interested in the project and try to get them on board. There is a story about a gardener who comes to the greenhouse every Saturday morning. She moved into this neighborhood in order to help her daughter to raise her granddaughter. Her daughter is a single mother who moved here from New York to raise her baby who is now seven-year-old. I think for her, the greenhouse plays a very important role in helping people develop relationship with someone else. For me personally, we have become very close friends. People get in touch with me because they specifically have questions about urban farming, and papers that are more relevant. Sometime they talk about stuffs about the greenhouse, sometime they are in touch with the residents’ cooking classes.”

In aspect of self-improvement through the networks, Lawrence shares his observation “when I worked at The Food Project as a Crew Leader, my crew of young people had one or two work days in the Greenhouse picking tomatoes. While they were there, they got to interact with Danielle Andrews and, while teaching
them how to identify and pick ripe tomatoes, she told them all sorts of stories about the history of the greenhouse and the neighborhood. My crew and I learned some valuable lessons about long-standing community spaces that afternoon.”

Danielle explains as “a number of our former users are working in the field of organic agriculture or social justice. I think they would agree with their experiences with The Food Project that help to shape they end up going and working. The participants of TFP can gain a lot of benefits for the future career. They also build up a relationship with the residents through the engagement. We are working on the balance between depending on me and empowering people to have their leadership. Right now a long-term gardener has taken the leadership on the community bays sharing knowledge of themselves. That is something we are always trying to figure out. We are going to put out photo walls to show who the people are, their plants, and their expertise.” – Danielle Andrews, the Dudley Farm Manager.

“As an administrative staff person,” Alex Brandy, the Grant Manager of the greenhouse, says, “I was not directly involved in building social capital at the greenhouse. Working as the Grants Manager, however, I did have an opportunity to collect and retell the stories of the staff and community members who had the opportunity to work there more often. For me, one of the most interesting recurring themes was the way that a number of the community groups working in the greenhouse used their space to run programs sharing and exploring elements of their culture. NUBIA, for example, used their beds to work with youth to grow crops used in Nubian (Sudanese and Egyptian) cuisine, connecting these young people to produce, dishes, and celebrations that they may have had little opportunity to engage with otherwise. For a number of groups, NUBIA included, this work was particularly meaningful because it would have been difficult to grow some of these crops in Massachusetts outside of the greenhouse, and they would be hard to find at a grocery store. By drawing on cultural traditions, the work helped young people not only learn more about their roots, but build inter-generational connections as
well, as they drew on the knowledge and experience of older members of the community.”
Chapter V: Conclusion and Recommendation

The reputation of the Dudley Greenhouse is overwhelmingly positive. The users of the greenhouse are excited to describe the progress they have made toward the goals in different stories. Although there are few data reports and statistical evidence to predict the future scenario of the greenhouse, the users are uniformly optimistic about the potential for personal and collective growth – which is sufficient to indicate that the greenhouses contribute to the wellbeing of the neighborhood’s residents and community. Greenhouse program participants are gaining increased food produces and access to them, building community through networking with others in the communal gathering space with multiple links to the outside areas. All the evidence points to the significance of social capital in the community-building process.

Social capital creation and its sustainability have always been one of the most important goals for governments and citizens at all levels all over the world. Social capital is somewhat foreign to most of the Chinese people although it has existed in traditional Chinese lifestyles for hundreds of years.

Social capital, as the resources embedded in social networks, are famous for making use of guanxi in China or instrumental personal ties\(^\text{93}\) for the acquisition of resources. The previous perception of such social ties generated by the interaction and trade through personal networks is pessimistic to some degree if it is not negative. Little attention has been paid to healthy and sustainable social capital creation during the whole education period until recently. However, we could believe that the social capital could be positively instrumental for community-building and individuals through the analysis of former cases. It is not too late to conduct researches on the social capital creation and the utility in the community-building process. Cases in my thesis demonstrate a wide range of social capital creation happening across the world to advance the local sustainable food system and

community revitalization. Common approaches, experiences, and lessons are shared in a different context as the eternal and lasting lighthouse navigating the coming efforts into the river of building community with social capital.

5.1. Food is a vehicle for community development.

Dudley Greenhouse in Boston, Dig Deep Farms & Produce in the East Bay area, HOPE Collaborative in Oakland, and Share & Harvest Farm in Beijing are all devoted to building a safe, healthy, local food system as an intervention to improve public safety, enhance cultural preservation and community economic development. In order to identify the needs from local residents, HOPE Collaborative exploits community surveys as an approach to engage respondents and gather data such as the vegetable and meat consumption budget, location, frequency, volume, and other indicators related to food growth and consumption. *Dudley Resident Gardens: Summer 2013 Survey Results* proves that The Food Project has chosen the dominant food demand in the neighborhood to encourage the local resident taking part in the community revitalization process.

5.2. Participatory activities and engagement methods catalyze the creation of social capital.

The formal meetings and research, and informal community engagement methods such as potluck, festivals, and member parties play a vital role in keeping the relationship sustainably warm and welcome. All programs implement cuisine workshops in the community food planning process as an opportunity to involve participants for the diffusion of cooking knowledge and benefits from gardening. Participants refer new participants to each other; the regular events and meetings also help to keep the relationship sustainably warm and welcome. The relationships among participants and institutions concentrate the structure of community on both place-based and people-based strategies with a bottom-up, resident-driven perspective.
5.3. Youth development programs are vital for the maintenance of social capital.

The engagement of the young generation energizes the communities and brings about social change. Every summer, teenagers from different backgrounds come to learn skills of sustainable agriculture, cultivate their farmland, serve their communities by distributing produces at reduced-price farmers’ markets, and participate in the workshops with local hunger relief organizations. They will gain expertise in the field, build up relationships with others and public speaking skills at the same time. The youth put their knowledge into action by partnering with staff and community members to engage in hands-on projects. The purpose is to create a new generation of leaders for their communities and a sustainable food system.

5.4. Cross-sector collaboration unfolds the envelope of benefits.

Given the requirement of participation from various sectors, and the wide influence of a local food system, all programs express the expectation of the strategic collaboration with other organizations. The institutions and organizations could come to a result of doing more, solving more, and influencing more with less. With the collaboration with local businesses, such as Meimei Restaurant, the approach that dividing the whole bays into two parts, community bays and enterprise bays, ensures both the essential meaning of Dudley Greenhouse as the engine for community revitalization, and basic revenue for a long term operation. Most of the cases above welcome the researchers from educational institutions that share the delicate survey and evaluation result based on the theoretical knowledge and cutting-edge research directions with the programs. It is necessary to test a well-defined causal theory about the mechanism of social capital though we have already receive the benefits generated within the relationships. Other sectors as government agencies, land use authorities, public health agencies, and design firms can help advance the relatively specific contribution to creating a comprehensive framework for the future efforts of a broader community development.
5.5. **Mutual learning from expertise and local knowledge exploits the existing resources.**

The programs highlight the importance of respecting the grassroots engagement in technical expertise’s environment. Local residents devote the participation in person, as well as the precious empirical knowledge and skills distilled from their daily life. Community-based organizations, such as The Food Project and Dudley Street Neighborhood Initiative, have a long history and rich experience in integrating the community activism campaigns with academic and technical expertise. The involvement of such organizations makes it possible to learn from the expertise and local knowledge mutually. The mutual learning process is a pathway of listening to the participants’ opinions and ideas to optimally meet their requirements with the existing community resources.

5.6. **Regular inspection and implementation are tools to track the performance and modify the focal points.**

Programs mentioned above have built milestones and momentums indicating that they achieved goals successfully during respective processes. The regular inspection makes it possible for organizations to be more intentional about their decisions and use of resources in ways that contribute to communities. The Food Project conducted an annual final report to measure the achievements and drawbacks to determine what it should pay more attention and what they should value. The evaluation contains both formal and informal discussions across organizations to create the foundation for more effective collaboration and relationships based on a shared vision of success and common values. TFP staff also provide a summary of the success, challenges, and growth potential of each community group re-applying for space in the greenhouse. The result of inspection could be the language for understanding and describing the existing relationships and strategies in the next step.
Appendix A


Although most of the activities in the greenhouse centered on the 8 groups with bed space, multiple events were open to the wider community, and The Food Project regularly support external groups and community initiatives. The following list – while not comprehensive – would provide a sense of the scope of this community work:

- **Garlic and Compost Day** – Approximately 75 people attended this seed garlic and compost sale, which also featured garlic tasting and a home composting workshop.
- **Public Kitchen** – The Food Project cohosted this week-long event with the Design Studio for Social Intervention (DS4SI). Greenhouse activities included a Meatless Monday cooking class, a potluck featuring dishes from local residents, and a celebratory feast. These activities attracted many people from both within and beyond the Dudley neighborhood and inspired multiple ongoing collaborations.
- **Thanksgiving Market** – Held the Tuesday before Thanksgiving, this event featured produce from the greenhouse as well as from The Food Project’s Lincoln and Boston farms. The presence of a food truck and soup made by The Food Project interns, as well as a variety of children’s activities, added to the feast atmosphere.
- **Informal community celebrations** – On multiple occasions the greenhouse welcomed casual groups of neighbors and friends for low-key events such as a French toast breakfast. Often, news of these events spread by words of mouth, and a variety of people stopped by to share food and enjoy one another’s company.
- **City Farm Fest (and associated seedling/compost distribution)** – This annual plant and garden supply sale draws more and more people to the greenhouse each May. In 2013, 350 people attended. Visitors were able to purchase seedling, participate in kid’s activities, and – for the first time – get their soil tested for contaminants. Approximately 55 people took advantage of this opportunity and brought in soil samples for testing. In
addition to this celebratory day, community members regularly stopped by the greenhouse throughout the spring to purchase compost and garden supplies sourced by The Food Project.

- **Jazz under Glass** – The greenhouse was transformed in June for a fundraiser featuring a buffet meal, a silent auction, and a musical entertainment provided by Fulani Haynes (herself a greenhouse grower). Greenhouse growers and other neighbors contributed dishes that celebrate their cultural heritage and incorporated produce grown in the greenhouse. Approximately 125 people attended, including several community members who volunteered their time at the event in order to waive the $25 ticket price.

- **Harvest Celebration** – To celebrate the end of another successful year, the greenhouse hosted a large gathering of community members, TFP interns and their families, and greenhouse growers. The interns prepared a series of dishes using TFP produce, and many guests brought dishes of their own to share.

- **Grow Well workshops** – Approximately 150 people participated in gardening workshops hosted in the greenhouse between September 2012 and August 2013. Many of those attending were new members of the Build-a-Garden program; others were long-time gardeners looking to sharpen their skills. At the end of each session, the majority of attendees reported that the workshop was helpful in expanding their gardening knowledge.

- **Classroom space** – TFP’s youth interns regularly taught their popular “Food for Thought” workshop series in the greenhouse, an ideal space for learning about local and sustainable food.

- **Individual beds** – For the first time, TFP reserved eight beds in the community bay for seniors and persons with disabilities in the Dudley neighborhood to grow food for themselves and their families. YouthBuild Boston elevated two of these beds to waist-height in order to enable community members with limited mobility to participate.

- **Regular volunteer opportunities** – Multiple volunteers helped to keep the greenhouse running by providing assistance watering, potting seedlings, and performing other labor-intensive activities on a weekly basis.

- **Field trips and tours** – The greenhouse manager regularly fields requests for tours from school and other local and national groups. September through June, an average of 4
groups per month was introduced to the greenhouse in this way; during the seven weeks of the Summer Intern Program, youth interns welcomed many additional groups.

- **Seedling space** – Community groups (both greenhouse growers and other groups) received bench space to grow seedlings through the spring, which they could then plant in outdoor gardens or distribute to home gardeners. In total, these groups grew about 5,500 plants. In addition, the Greenhouse Manager (with the help of community volunteers) grew 12,000 plants to be used on TFP’s farms and 14,000 plants to be sold to community members at City Farm Fest and throughout the spring.

- **Presence at community events** – A TFP representative hosted a booth at events such as DSNI’s Multicultural Festival and Dudley Children Thrive’s family days. These activities spread awareness of both the greenhouse and local food, helping us to significantly broaden our impact.

- **Dudley Branch Library art project** – Tomato plants from the greenhouse were incorporated into youth-designed artwork at the library.
Appendix B


Mason School

- Successes:
  1. Strength of the partnership hinges on (teacher) Lee’s dedication and commitment; even though she’s been working with TFP in some capacity for many years, she’s still looking for ways to improve.
  2. Weekly lessons with FoodCorps Service Member Marlie Wilson worked well; Lee and Josephine (teachers leading the project) pointed to specific benefits for their students, including increased vocabulary and awareness of where their food comes from, and raved about the quality of the lesson plans. Marlie extensively documented her curriculum, meaning that future Service Members will be able to devote their time to refining lessons rather than building from scratch.
  3. TFP-Mason partnership is becoming part of Mason School culture; several parents requested that their children be placed in the 2nd grade class that would be visiting the GH.
  4. 2nd grade “pilot” group did well with greenhouse activities, and in 2013 both 2ndgrade classes will participate.

- Challenges:
  1. Transportation and timing. Long walk from school to GH; can be difficult to fit a full lesson in.
  2. Getting classroom teacher buy-in. Goal has been to integrate GH work with regular curriculum, and some teachers are more receptive than others.

- Growth potential:
1. Would like to implement a regular post-session debrief with the classroom teacher present, so as to facilitate coordination between TFP and classroom work.

2. Incoming FoodCorps Service Member will be able to focus on refining and expanding existing lessons based on the experience of her predecessor.

Winthrop School

- Successes:
  1. Kids grew more adventurous in tasting new things. Almost seemed like they enjoyed tasting things they didn’t like! Especially appreciated the ability to vote on what they did or didn’t like.
  2. Curriculum was great; certain games (e.g. Plant Parts Twister) were requested week after week, and lessons tied in nicely with the science curriculum.
  3. One student with regular behavior problems liked coming to the greenhouse so much that he managed to improve his conduct in order to keep going every week.
  4. Marlie (FCSM) went above and beyond in her involvement with the school, including planning Earth Day activities and volunteering as a judge in their science fair.

- Challenges:
  1. Students’ behavioral problems; there were some extenuating circumstances (e.g. the classroom teacher went on maternity leave), and there also weren’t always enough adults in the room.
  2. Classroom teacher buy-in is mixed. One teacher was uninvolved, while another participated but seemed to think it was a burden at times.
  3. Cheryl (science teacher) would like to work side-by-side with the FCSM in Winthrop’s outdoor garden so that she’s more aware of what’s happening and continue to build her own gardening skills.
  4. Communication with Cheryl/the school was an ongoing struggle, as emails were often overlooked.
• Growth potential:
  1. Instituting a school-wide behavior system; optimistic that this will help reduce behavior issues.
  2. Cheryl is excited to build on the program now that she has a better sense of the curriculum.

_Baba Rumas/Life Symphony_

• Successes:
  1. Worked consistently with 2 groups (an independent school and a family of 6).
  2. Excellent GH ambassador in the community; great at bringing people in—this past year, about 20.
  3. Seems to be improving his confidence as a gardener and teacher; was very open to trying the square foot method this year.

• Challenges:
  1. Doesn’t necessarily adhere to a regular schedule; his programming tends toward the unstructured, so it’s difficult to measure the impact of what he’s doing.
  2. Has often expressed interest in learning more through TFP workshops but finds it challenging to attend.

• Growth potential:
  1. Opportunity for him to connect his gardening work to his food production work (BooBee Breads) and to involve participants in the full seed-to-fork experience.
  2. Seems excited to work with a group of neighborhood kids, which he didn’t start doing until the end of this year.

_The Village FEAT_

• Successes:
  1. Fulani did a great job involving the kids in all aspects of caring for the beds.
2. Incorporated signage and artwork; created a mini-classroom where she could conduct mini-lessons.

3. Made some headway in reaching parents of the kids involved (informally, through conversations and quick demos as she dropped off the children and vegetables).

- **Challenges:**
  1. Difficulty involving parents to the extent she had hoped (was originally interested in bringing them to the GH and/or hosting some sort of workshop).

- **Growth potential:**
  1. Could expand to additional families.
  2. Because she’s established a relationship with kids and parents involved, will be able to build toward more advanced topics and may be better positioned to engage parents.

**Vernell Jordan and friends**

- **Successes:**
  1. Improved her own gardening and teaching skills; Vernell is always willing to offer her expertise to other groups and GH visitors.
  2. Worked intensively with one woman over the course of the year.
  3. Regularly distributed food to several neighbors (including local elders).

- **Challenges:**
  1. Getting regular participants. Had about 5 people involved, fewer than she anticipated.
  2. Harvesting and distributing the food in a timely fashion; because of her schedule, wasn’t always able to get to GH in time to harvest.

- **Growth potential:**
  1. Has ideas for better scheduling (e.g. early morning sessions).
  2. With a better understanding of GH timing and yield, feels better prepared to create a harvest plan.
**FoodCorps**

- **Successes:**
  1. Food from the GH was incorporated in school lunches at both Orchard Gardens and Deerborn, giving hundreds of students the opportunity to taste it.
  2. Students expanded their palates and gained an increased understanding of the entire growing process.

- **Challenges:**
  1. Difficulty predicting the speed of plant growth, especially in the winter; made curriculum planning challenging.
  2. Lack of transportation kept them from visiting as often as hoped.

- **Growth potential:**
  1. Orchard Gardens and Deerborn won’t be participating in the upcoming year.
  2. Dan suggested that TFP reach out to them with info about the seedling RFP and said that he personally hopes to continue his involvement with the GH in his new role as the garden manager at Boston Day and Evening Academy.
  3. For future partnerships, encourage FoodCorps Fellow or Service Member to write the application, but make sure a school representative also signs off on it.

**Nubia and ISBCC**

Note: Although they applied separately and were each granted the use of several beds, Nubia and ISBCC have in practice operated as one group. When asked to explain the rationale for distinguishing between the two, group representatives indicated that it is a matter of where produce is distributed. All of ISBCC’s produce goes to the café at the mosque, whereas Nubia’s produce goes first to the Nubia community, and any surplus goes to ISBCC programs (such as the food pantry).

- **Successes:**
  1. Organized 3 field trips to the GH for students at the mosque elementary school.
2. Produce grown enabled local sourcing at mosque café.
3. Sayed is a key player in the GH community and contributes a lot through his knowledge and commitment.
4. Grew crops traditional to Nubia that are otherwise difficult to find in Boston.

- Challenges:
  1. Unable to develop partnership with a local Saturday school as planned, due to scheduling barriers.
  2. Some inconsistency in involvement of ISBCC volunteers; Sayed ended up being responsible for the beds of both groups.

- Potential for future growth:
  1. Recently identified a new volunteer; he’s a Malek Academy teacher whose involvement may help to strengthen the connections with the school.
  2. ISBCC’s outdoor garden will be dramatically expanded in the coming year; this may prompt increased interest in gardening among community members.
References


