Urban Agriculture as Revolution:
An Action Research and Social Movement Analysis of Food Production in Alameda County, California

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DISSERTATION

Submitted in partial satisfaction of the requirements for the degree of

DOCTOR OF PHILOSOPHY

in

Geography

in the

OFFICE OF GRADUATE STUDIES

of the

UNIVERSITY OF CALIFORNIA

DAVIS

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2010

DEDICATION

This work is dedicated to my grandfathers. To the memory of Joseph Arfi, Sicilian farmer and New York City grocer; and to Robert G. Reynolds, whose admiration of both his students and his grandchildren have always inspired me to continue my educational endeavors. Each of their legacies is present in this work.

ACKNOWLDEGEMENTS

Many people have provided advice, assistance, and support to me during the many phases of this process. I am honored to have had the opportunity to work with the members of my advising committee who provided me with much guidance and support throughout this process. Dean MacCannell, who served as chair of my dissertation committee, has long inspired me to challenge myself, and provided invaluable advice about how to conduct socially relevant research with integrity. This work would have been far less compelling without his guidance. Gail Feenstra's expertise, enthusiasm and support for agrifood systems work, as well as her constructive criticism at several key stages of research planning and writing, were also essential to this process. Mark Francis provided important perspectives on urban gardening and conceptualization of the research findings, and graciously agreed to coordinate my qualifying exam. Isao Fujimoto, Julie Sze, and Marita Cantwell were also part of my examination committee. Thanks to each of them for their advice, which was helpful to me as I thought through the many aspects of urban agriculture from both practical and political perspectives. I am also grateful for Carrie Armstrong-Ruport in the Geography Graduate Group, for her support over the past four years.

The University of California Small Farm Program and its dedicated staff members provided financial and logistical support, without which this research would not have been possible. The field research was hosted by the Program, where I was employed through the majority of my graduate student career. This research was also funded

through the Program as part of a USDA grant. In addition to funding and hosting the field research, Program staff members were enormously supportive of my efforts over the three years of research and analysis. I am grateful to each of the SFP directors with whom I was able to work during my time with the Program: current Director Shermain Hardesty, past Interim Director Marita Cantwell, and past Director Desmond Jolly. They, along with the Small Farm Program advisors, (Richard Molinar, Mark Gaskell, Ramiro Lobo, Manuel Jimenez, Benny Fouché), and other Small Farm Workgroup members shared their valuable time and perspectives on many aspects of urban agriculture. SFP staff members Linda Vieira, Birgit Hempel, and Brenda Dawson were also extremely generous and patiently provided me with needed support and assistance.

More broadly, I extend my thanks to the individuals and organizations in Alameda County that offered assistance and inspiration throughout this work. These include all of the key informants whose work motivated this research, whose names I cannot mention here, but whose ideas and passions are the fabric of this dissertation. I hope that this work can be of use to them at some level in their various agrifood system efforts. Thanks also to Lucrecia Farfan-Ramirez, director of Cooperative Extension Alameda County, for making documents accessible and for reviewing sections of this dissertation, and to Justin Watkins, and Kira Pascoe, also at UCCE Alameda. I am grateful to Ed Duarte of the Alameda County Department of Agriculture for his assistance identifying agricultural operations; Ryan Boynton for his GIS mapping expertise and expediency; and to Navina Khanna; Grey Kolevzon; Hank Herrera; Temra Costa; and Gail Myers with Farms to Grow for providing important advice and input as to how to make this research more

relevant to local stakeholders. Thanks, too, to Nathan McClintock for discussing theoretical aspects of urban agriculture, and to Damian Parr, for discussing action research over the past several years, and for reviewing sections of this dissertation.

Finally, am forever grateful to my parents, Terrie Arfi and Bob Reynolds, who have supported me in immeasurable ways throughout all of my years of education, and to my partner, Michael Barnes, who has always encouraged me to stay true to myself.

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ABSTRACT

This dissertation examines characteristics of urban agriculture as a social movement using Alameda County in the San Francisco Bay Area as a study context. The overarching goals of this study were: a) to add to the theoretical understanding of urban agriculture in the Global North; b) to assess urban agriculture practitioners' interest in receiving technical assistance from University of California Cooperative Extension, (UCCE); c) to assess the possibilities for, and take steps toward, expanding UCCE assistance for a diversity of urban agriculture practioners. The study was conducted using an action research framework. Distinct characteristics of action research are: its attention to process; its dedication to motivating social change through research; and its emphasis on the interplay between theory and social action.

Field research consisting of intensive interviews and site visits explored: social and geographic characteristics of 52 urban agriculture operations (farms, ranches, and gardens); challenges experienced by practioners; and types of assistance that would better enable operations to realize their goals. This information was analyzed using descriptive statistics and various social theories. GIS maps were created with site location and U.S. Census data. This enabled further geographic and demographic analysis. An additional data set consisted of UCCE agricultural advisors' perspectives on urban agriculture. This information was collected through participant observation from within the University of California Small Farm Program and Small Farm Workgroup, both of which are part of California's extension system.

In concert with the practical focus of this work, this dissertation draws from several theoretical frameworks for its analysis of urban agriculture as a social movement. David Harvey's (1973) work on revolutionary theory and Patricia Allen et al.'s (2003) study of California agrifood initiatives (AFIs) are central to this analysis. Discussion sections of this work center on a set of four themes derived from the field research. These themes are: a) community gardening; b) community food security/food justice/youth development; c) sustainable living/self-provisioning; and d) commercial agriculture.

Key findings and recommendations are presented in two chapters of this dissertation. Chapter 9 presents action recommendations focused on steps that could be taken to motivate and increase Cooperative Extension support for urban agriculture. A summary of overall findings and suggested topics for future research is then presented in the concluding chapter.

CHAPTER ONE

Introduction

The idea is almost revolutionary of growing, you know, basil, so that people [...], before dinner, they can stop by and pick some basil or, you know, they jog by or they walk their dog and they pick up a tomato and they eat the tomato […] so it's really to make people happy and have fun gardening.

–Alameda County urban gardener

"Hundreds of inspiring Oakland community members are leading a grassroots movement to revolutionize our failing food system."

–City Slicker Farms 2006 Annual Report

"The Black Panthers' call for 'land, bread, housing, education, clothing, justice, peace and people's community control of modern technology' [is] more bad ass than some white lady's 'delicious revolution' but it's rooted in the same concept."

–(Carpenter 2007)

It is not a revolution, it's an opportunity […] nobody's here trying to change the world.

–Alameda County urban gardener

Urban Agriculture as a Social Movement

Urban agriculture is a practice that dates to at least the 19th century in the United States. Historically, urban food production has been motivated by interests ranging from self-provisioning to social welfare; from education to socialization; from community development to national food security. It has been interpreted, during various eras, as large-scale public gardens, backyard gardens and farms (at times replete with hogs and dairy cows), educational projects, and commercial operations. The diversity of activities that have been described as urban agriculture over time has evolved with changing social realities and contemporary efforts to integrate the act of growing food into the urban environment.

Public interest in urban agriculture has waxed and waned over the past 150 years, and is currently gaining momentum once again. Today's urban agriculture practitioners include private residents wishing to grow their own food, collective projects aimed at providing fresh foods to low-income city residents, market gardens, and commercial farms. Farming in the city has even become stylish; Urban gardening and backyard chickens are regularly featured in the not only the home and garden sections of metropolitan newspapers, but in the fashion sections as well. (See Salkin 2008.) Moreover, enthusiasm about urban agriculture has spawned new commercial sector initiatives, including edible landscaping businesses (*MyFarm website* 2009), trainings for commercial urban farming (*Spin Farming website* 2009), and designs for skyscraper-greenhouses (Wooley 2007).

Institutional interest in urban food production has also been piqued in recent years. Most visibly, First Lady Michelle Obama's initiative to plant a kitchen garden at the White House in 2009 illustrated a degree of governmental acceptance of urban food production, This was followed by the establishment of an urban garden at the USDA headquarters in Washington, D.C. (Burros 2009; USDA 2009). Yet another example of institutional recognition of urban agriculture was the selection of a well-known urban farmer to receive a MacArthur Foundation's Genius award for his pioneering work with inner city farming (Royte 2009). From urban homesteading to symbolic governmental efforts, urban agriculture has become a contemporary social movement on a national scale.

One driving force behind this national movement has been the efforts of urban agriculture advocates, many of whom have aligned with the community food security (CFS)

movement, which, itself, aims to increase "the ability of all persons [to obtain], at all times, a culturally acceptable, nutritionally adequate diet through local, non-emergency sources" (Gottlieb and Fisher 1996). Although CFS activists have driven the national movement at a certain level since the late 1990s, urban agriculture leaders are also engaged with a variety of social and environmental initiatives. These include initiatives that attend to anti-racism, public health, climate change, food justice, and urban ecology. The range of interests represented within this movement demonstrates the many contemporary issues that can be linked to food production in an urban society.

Implicit in the diversity of urban agriculture practitioners and supporters is a widespread desire for agrifood system change. This drive for social change provides a backdrop for the image of urban agriculture-as-revolution, as such references have become almost commonplace. Urban farmer and author Michael Ableman has written about a "quiet revolution" engendered by urban food production and direct marketing (2002). Chef and activist Alice Waters has described garden-based education as a "delicious revolution ™" (Waters 2005). A film entitled "Homegrown Revolution" depicts urban homesteading (e.g., growing a significant amount of a household's own food in an urban setting) as a pathway to freedom (Dervaes 2007). Urban farmer Will Allen has also tied urban farming to a "Good Food Revolution" (2009). A national magazine recently included profiles of urban farmers, urging readers to "live the revolution now" (Cummings 2009; van Gelder 2009). These references to revolution illustrate the level of interest in urban agriculture as a venue for social change. It remains to be seen if such progressive ideals can be realized and sustained through the act of growing food.

Revolution or Just Gardening?

As illustrated by two of the comments that began this chapter, growing food in and near cities is, for some movement actors, understood as part of a revolution in terms of changing where, how, and by whom food is grown and eaten. For others, supporting local farmers represents resistance to the global agrifood system. However, some urban agriculture practitioners are content to do what critics might call "just gardening." Clearly, there are numerous interpretations of socio-cultural revolution, and proximity to a city does not necessarily cause individuals to seek social change. Moreover, there has not been a universal understanding of what constitutes "urban agriculture" in the Global North. How far, then, can the claim to an agrifood systems revolution be extended to encompass the various forms of urban area food production? To what extent might such a claim be unpalatable to various stakeholders? Iterations of these questions will be addressed throughout this dissertation.

Defining and Conceptualizing Urban Agriculture

Agriculture is most often identified with rural areas, which may make the concept of *urban* agriculture seem like an oxymoron. Several definitions of urban agriculture have been developed in the past 20 years, and are referenced widely within agricultural development literature. According an authoritative book on the topic, urban agriculture is defined as:

> the growing of plants and the raising of animals for food and other uses within and around cities and towns, and related activities such as production and delivery of inputs, and the processing and marketing of products. [Urban agriculture encompasses] a variety of production systems, ranging from subsistence

> production and processing at the household level to fully commercialized agriculture (van Veenhuizen 2006).

This rather broad definition draws from an international development context in which urban/urban edge agricultural production is considered a livelihood strategy for city dwellers in the Global South.[1] (See Mougeot 2005; Smit et al. 1996; van Veenhuizen 2006) In the United States, urban agriculture advocates, in particular, have incorporated the livelihood rhetoric into efforts to increase the visibility of, and support for activities such as urban gardening and commercial farming in and near cities (Brown 2002; Brown and Carter 2003; Kaufman and Bailkey 2000). However, an understanding of urban agriculture that encompasses the concerns of all urban-area farmers and gardeners in industrialized regions has not emerged.

One factor that has likely contributed to the lack of common understanding about what urban agriculture is, and what it is not, is the focus on the geographic element (i.e., being located in or near a city). In an era that has seen rapid increases in urbanization, there is not always a clear distinction between urban-, urban edge-, and rural areas. Moreover, commonly referenced works on urban agriculture have not consistently incorporated in-depth analyses of other characteristics, (such as how food cultivation is coordinated, or why operators choose to grow food in an urban setting), into their working definitions. This thesis will argue that a universalizing concept based on geography alone is less effective in increasing support for urban agriculture than a refined understanding of the

[1] The term "urban edge" is used throughout this work in place of the terms "urban fringe" and "peri-urban," (which is commonly used in international literature), to refer to agriculture located near cities.

similarities among, and differences between, various operations. An example of why this may be so is discussed next.

What is "urban" agriculture?

An oft-cited statistic indicates that 40 percent of the nation's fresh produce is grown in urban areas (Allen 2004). This implies that a large number of farms in the United States are in fact "urban." Since there are varied definitions of urbanity itself, however, statistical measures such as these can lead to confusion. Again, agriculture is still collectively imagined as a rural activity, even though the expansion of urban areas has meant that increasing numbers of farms and ranches are located near cities.[2] Moreover, even federal government agencies such as the U.S. Census Bureau and U.S. Department of Agriculture (USDA) use different definitions of "urban" in assembling statistical data about the nation's population and agricultural sector.[3] This may also contribute to a lack of common social understanding of what constitutes an urban- (or metropolitan) area with regard to agriculture.

Fresno County, California can be used as an example of how confusion can result from the lack of congruency between cultural understandings of agriculture and urban places. Fresno County is defined by the USDA as a metropolitan area. It is also ranked, first, nationally, in terms of the total value of agricultural products sold, and second in terms of vegetable production (Census of Agriculture 2007). Fresno County thus clearly weights

[2] Preserving agriculture at the urban edge is the subject of a separate analytical framework, which will not be discussed in detail in this dissertation. (Esseks et al. 2008; Sokolow 1996)

[3] Despite differences, both the Census Bureau and USDA base their definitions of urban on population.

the national statistics on urban vegetable production. While there is no official definition of an "urban farm," most Fresno County farms are *not* located at the center of the City of Fresno. As such, national statistics on the percent of produce grown in urban counties can be misleading as to the quantitative significance of food production within city limits. Given all of these variables, it is of little wonder that a common understanding of urban agriculture in the United States has been elusive thus far.

In addition to population-based definitions, urbanity can also be theorized with respect to morphological characteristics of a given place (e.g., a dense urban core), as well as to urban metabolism theory, which attends to flows and transformation of materials and human populations (Swyngedouw 2006). Related to these concepts, Mougeot has suggested that the differentiation of urban- from rural agriculture is based not solely on production location, but rather the "fact that it is an integral part of the urban economic, social and ecological system" (cited in van Veenhuizen 2006). Such a definition includes small farmers and ranchers who conduct direct distribution and sales in urban markets (Noble n.d.).

Definition of Urban Agriculture Used in this Study

This dissertation draws from each of the definitions discussed above to arrive at a conceptualization of urban agriculture as: *agricultural production that is located in and near urban centers, and that which is integrated in the urban economic, social, and ecological system*. Using this definition, this study focused specifically on urban food production, excluding urban agriculture operations that did not produce edible products.

(The study population is discussed further in chapter 5.) Moreover, although large-scale agroindustrial enterprises are included in the spectrum of urban agriculture types according to some sources, this study focused only on small-scale operations that were integrated into local urban systems through various commercial and non-commercial activities.

Motivations for this Study

This dissertation project was predicated on the beliefs that a) some urban agriculture can in fact be used to address issues of social justice in the urban agrifood system; and that b) additional technical assistance would better enable practitioners to realize their respective goals. To this end, past studies have suggested that increasing Cooperative Extension support for urban agriculture would be useful in terms of overcoming a diversity of challenges, ranging from need of technical assistance to lack of business skills (Brown 2002; Brown and Carter 2003; Kaufman and Bailkey 2000; Smit et al. 1996) (These and other challenges are discussed in chapter 2.) As noted in these studies, the USDA Cooperative Extension System (CE) is well poised to provide this type of assistance in the United States. The mission of CE is to provide research-based information to the public on topics such as agriculture, gardening, and nutrition. Yet, out of agricultural extension programs nationwide, only a few explicitly target urban agriculture in its many facets. (See chapter 2.) As such, this study was motivated by a drive to identify a set of specific steps that might enable agricultural extension services to reach a broader diversity of urban agriculture practioners, including those whose activities are focused on instigating social change.

Much of the research for this project was undertaken within the University of California Small Farm Program, a statewide extension program for small-scale farmers. This study thus focused on the intersection of urban agriculture and the Cooperative Extension System in California, with an interest in identifying ways to increase support for urban agriculture operators (i.e., urban area gardeners, farmers, ranchers, and apiculturists). Issues of justice and equality within the urban agrifood system were of particular interest to this study, particularly with regard to the level of public sector (e.g., governmental) involvement with facilitating social equality. The following section provides a brief overview of the agricultural extension system in California.

Overview of UC Cooperative Extension and the Small Farm Program

California's extension system is directed by the University of California Division of Agriculture and Natural Resources (DANR). Its programs include county extension offices, the Master Gardener Program, and 4-H. California's extension system does not have a statewide urban agriculture program. It has, however, included a number of Statewide Special Programs, which address certain topics and/or serve a specific clientele. The Small Farm Program (SFP) is one of these Special Programs and its purpose is to provide assistance to underserved small-scale farmers, including farmers from racial and ethnic minority groups.[5,6] The Program consists of an administrative

[5] The mission of the SFP is to meet the needs of the small- and moderate-scale farming community within the wider scope of California agriculture by "conducting applied research and outreach programs for the successful adoption, management and marketing of potentially profitable crops and enterprises" (www.sfc.ucdavis.edu. Accessed June 9, 2009).

[6] See addendum for a discussion of the future of the Small Farm Program.

Small Farm Center located in Davis, California, and five Small Farm Advisors located in counties throughout the state.

Despite the lack of a dedicated urban agriculture extension program, then, several of California's extension programs do work with topics related to small-scale urban farming and gardening. Again, a guiding motivation for conducting this research within an extension program (i.e., The UC Small Farm Program) was a belief that these efforts could be coordinated and expanded in order to reach wider array of urban area food producers.

Research Objectives and Guiding Questions

The objectives of this study were:

- to gather data that described urban agricultural producers in Alameda County and map their locations;
- to learn the various goals of urban agricultural producers in the study area, and what they would need in order to come closer to achieving and sustaining these goals;
- to learn if further university research and/or extension activities would be valuable to various urban agriculture operators in the study region;
- to learn to what extent urban agriculture operators had previously worked with select UC DANR/Cooperative Extension programs;
- to assess the potential to expand extension services for urban agriculture operators, and the willingness of UC DANR and Cooperative Extension staff members to participate in such an effort.

To work toward these objectives, the following research questions guided this study:

1. How do urban agriculture groups in Alameda County operate in terms of organizational structure, management, and marketing? Where are they located and how does this affect their operations?

2. What are the goals of urban agricultural groups in the study area, and what are the most significant barriers to achieving these goals?

3. What experiences have urban agriculture operators had working with UC DANR/Cooperative Extension? Do they feel that the extension system could be helpful to them in their efforts, or would it hinder their progress toward their respective goals?

4. Do UC DANR/Cooperative Extension staff members consider urban food producers a current or future clientele? What is their perception of urban agriculture, more generally?

5. In which ways might UC DANR/Cooperative Extension most effectively approach urban-focused research and extension?

Organization of This Dissertation

This dissertation is organized as follows. Chapter 1 has introduced the topic of urban agriculture and the focus of this work. Chapter 2 provides a historical overview of urban agriculture in the United States, and a literature review of urban agriculture research. Chapter 3 provides an overview of the action research approach within which this study was conducted, as well as the theoretical approaches used in analysis. Chapter 4 describes the context of the study site, Alameda County, California. This includes an overview of the county's agricultural system and demographics, as well examples of local community efforts and University of California initiatives that have addressed agrifood system issues. Chapter 5 describes the specific methodology used in the field research. Chapter 6 reports the most general level of findings from the field research. These findings include the organization of urban agriculture throughout the county, as well as characteristics of the various types of urban agriculture operations studied. Chapter 7 examines relationships between urban agriculture operations and the economic sector of which each operation was part. It also focuses on political factors that may have affected these relationships.

Chapter 8 explores the distribution of urban agriculture sites throughout Alameda County, as well as relationships between site location and demographics of the surrounding community. Chapter 9 turns to a more practical focus, and explores challenges and information needs reported by urban agriculture operators. It also examines various UC DANR/Cooperative Extension staff members' perceptions of, and past experiences working with, urban agriculture. Further, chapter 9 provides a specific set of action recommendations that could be used to motivate and inform future urban agriculture program development within Cooperative Extension. Chapter 10, the conclusion to this work, ties together the findings of the field research and participant observation to offer a set of recommended steps for future research. It also reflects upon the implications of the research vis à vis revolution and the theories explored throughout the work.

CHAPTER TWO

Histories and Research in the United States

Historical Developments

The proximity of agriculture to urban markets is well established in historical analyses of agriculture, and of cities. Agricultural evolution has been intertwined with the establishment of settled villages, as well as the development of cities and market economies (Sinclair 1967; Childe 1950). While knowledge about these types of relationships is widespread, however, the extent to which food has been grown *in* cities is less widely recognized. In the United States, urban food production has been practiced throughout the past two centuries, particularly during times of social and economic upheaval, and has included gardens, farms, and livestock. Urban agriculture is today an important part of the urban system precisely because it engages many aspects of urban life, including both market and non-market activities, as reviewed below.

19th Century through World War II

Gardens have long been used in the United States as a way to increase access to fresh foods, especially for poverty-stricken urban residents. Perhaps the first documented urban agriculture project was Pingree Potato Patches, named after the mayor of Detroit, who championed the gardens as a response to urban food insecurity in that city in the 19th century. During an economic crisis that spanned from 1893-1897, poverty-stricken families were allotted 1/4-1/2 acre (of some 455 acres) on which to grow food for their own consumption (Hynes 1996, p. x). Over 900 families participated in the program,

which was replicated in several other cities, but was short-lived as development took priority over garden space when the economy improved (ibid). Other late 19th century social reformers also established community gardening and school gardens as a way to protect rural values in the urbanizing society of the time (Lawson 2005). Thus garden efforts were often initiated in response to the social effects of industrialization, whether these were effects on basic welfare or on a set of idealized values held by certain members of society.

Cities of the 19th century were also host to livestock production. For instance, dairy cattle were raised within New York City in the 1840s providing residents with an estimated 13,000 gallons milk per day, a source of nutrition that would have otherwise been unavailable due to lack of refrigerated transport (Blecha 2007, 12; Tremante 2000). Thousands of pigs were also raised within New York City limits during the mid- to late-19th century, and this was a source of both class conflict and public health concern (ibid). While middle-class residents and city politicians sought to clear the way for development and a prescribed social order, poorer residents wanted to maintain the animals as a part of their livelihood (Blecha 2007). Public health concerns about urban livestock finally won out when a cholera outbreak in 1848 prompted the wholesale removal of pigs from NYC by 1890 (ibid).

Interest in urban gardening waned during the early part of the 20th century, then regained popularity during World War I, when the federal government promoted gardening programs that "enlisted" civilian effort in the war by way of food provisioning. The

Liberty Garden program, U.S. School Garden Army, and Women's Land Army of America were funded by the War Department as a response to concerns about national food security (i.e., producing enough food, nationally, to feed the U.S. population and military personnel abroad) (Hayden-Smith 2006; Lawson 2005). The gardens provided $520,000,000 worth of food in 1918 (Hynes 1996, xi). Garden projects were also supported, ideologically, by Progressive reformers who feared the "disastrous social consequences of excessive urbanization" (Hayden-Smith 2006, 4-5). The war gardens were thus intended to contribute to American food self-sufficiency, especially in urban areas; to teach agricultural and life skills through gardening; and to engender cultural reform and "shape cultural values" (Hayden-Smith 2006; Lawson 2005).

After the end of WWI, many of the garden program plots were plowed under for development, yet gardens were incorporated into some city planning efforts during the 1920s and 30s (Hayden-Smith 2006). During the Depression, the Works Progress Administration sponsored relief gardens for food production in urban areas, but these garden programs, too, were abandoned with the creation of the federal Food Stamp program for farm surplus in 1937 (ibid). Livestock were also visibly present in urban areas until the 1930s, though they were used more for landscaping than human sustenance or nutrition. For example, sheep were kept on lawns at the White House during the Wilson Administration, and in New York City's Central Park, until 1934 (Blecha 2007, 14-15).

During World War II, a nationalized gardening effort resurfaced. Most significantly, the Victory Garden campaign promoted gardening in rural, suburban and urban areas as civilians' duty to participate in the war effort. Americans were encouraged (by way of wartime propaganda) to grow their own food, allowing the products of the commercial agricultural sector to be sent to troops and Allies abroad (Victory gardens of World War Two 1999, 170-211; Lawson 2005). Nationally, the Victory Garden campaign was supported by four governmental departments: the Office of Defense, Health and Welfare Services; the Department of Agriculture; Office of Civilian Defense; and Office of Education (Lawson 2005, 175-181). During the war, up to 44 percent of the nation's vegetables were grown in Victory Gardens (Hayden-Smith 2006, xii; Hynes 1996). Livestock husbandry, though not a part of the national Victory Garden campaign, often accompanied families' self-provisioning of food during WWII (Blecha 2007; Bellows et al. 2000).

In the Bay Area, the San Francisco Victory Garden campaign brought together a wide spectrum of stakeholders. The San Francisco committee included representatives from local educational institutions, voluntary organizations, the Parks Commission, the Chamber of Commerce, newspapers, and gardening clubs (Lawson 2005, 180-181). This committee served as an information clearinghouse and organized to facilitate gardening in the city. Through its efforts, it succeeded in obtaining lower water rates for gardens of at least 100 square feet; easing regulations on small livestock in the city; and gaining authorization for gardening on unused city and county land (ibid). In the East Bay, at least one large Victory Garden was located on the UC Berkeley campus.

Urban Agriculture after World War II

Nationally, widespread interest in community gardens waned after World War II, when gardening transitioned from a patriotic duty to a leisure activity. Backyard landscaping trends turned toward manicured lawns as suburbanization surged in the 1950s (Hynes 1996, xiii-xiv; Lawson 2005, 205-207). Some of the Victory Gardens, however, remained as urban community gardens. Housing authorities in larger cities, such as New York and Philadelphia, also promoted gardening for neighborhood beautification (ibid). Still, urban gardening did not resurface as a national movement until the late 1960s (Hynes and Howe 2002). The practice of urban livestock husbandry continued throughout the 20th century, especially by immigrants who brought cultural practices and dietary customs from their regions of origin (Bellows et al. 2000; Blecha 2007, 14-15).

From the mid-1960s to early 1970s there was again a renewed interest in urban gardening, which emanated from a diversity of interest groups, including women's-, civil Rights-, peace-, environmental-, and "back-to-the-city" movements (Hynes and Howe 2002; Stephens et al. 1996). In contrast to earlier garden programs, many of these projects were community-controlled, rather than being promoted and directed by outside organizations or governmental departments (Lawson 2005, 206). Some also focused on the process of creating community among gardeners, in addition to the effects of the gardens themselves (ibid). Gardening organizations such as Philadelphia Green, and the New York City Green Guerrillas began during this time, and led some of the urban renewal activities in those cities (ibid). These and other similar programs emphasized "self-help" and reciprocity between organizations and practioners (Hynes and Howe

2002, xiii; Lawson 2005, 205-208). In San Francisco, a municipal garden program was established to manage gardens citywide. (This program lasted until 1980 when funding changes resulted in its termination (Lawson 2005, 248-249). Additionally, supporting organizations such as the American Community Garden Association (ACGA), were formed during this era (Kirschbaum 1998).[7]

Alternative Agriculture and Cities in the Sixties and Seventies

At the same time that urban gardening was experiencing a renaissance in the 1960s, the alternative agriculture movement was also gaining ground (Allen 2003, 29-30; Guthman 2004, 3-9). Farmers involved in this movement, (many of them located in rural or urban edge areas in California), sought more environmentally friendly production practices, and refocused their attention on direct marketing in nearby cities and towns (Allen 2003, 34-36; Guthman 2004, 53-57). Efforts to garner urban consumer support for small-scale agriculture brought farm fresh products to urban markets and eating establishments. In the Bay Area, restaurants including Alice Waters' Chez Panisse, (which opened in 1971), made their mark serving farm-fresh and seasonal products, while providing new markets for organic farm products (Guthman 2003). Public events such as the "Tasting of Summer Produce" also featured local farm products beginning in the early 1980s, and continued to widen the awareness of (and demand for) produce grown near the San Francisco and East Bay Areas (Kraus 2007).

In a sense, alternative agriculture movement actors were recreating the historical link between the rural agriculture and urban areas as *markets* for farm products, but the

[7] The ACGA is a non-profit organization and network that promotes the growth of community gardening and greening in urban suburban and rural areas; political organizing; and community development.

alternative farmers of this era also had urban corollaries. In the Bay Area, experiments in ecological urban living, such as the Integral Urban House in Berkeley, paralleled the 'back-to-the-land' movement occurring in rural areas (Lawson 2005, 216). A book entitled *The City People's Book of Raising Food* encouraged integration of urban living with the natural environment including urban food production ranging from gardening to small livestock (ibid). Given these connections, urban and rural homesteading initiatives appear to have shared the ideological drive to live more ecologically sensitive lifestyles. However, these efforts did not necessarily reach all sectors of society.

While Bay Area haute cuisine linked alternative farmers with an affluent urban clientele, food insecurity and hunger remained the reality among less privileged urban residents in the 60s and 70s. Many of the urban garden programs discussed above began within this context, often as a response to intertwining issues of poverty, hunger, and racial segregation. These efforts were presumably aligned more with civil rights and basic survival than with upscale dining. Thus, while a focus on growing food in and near urban areas grew within several social sectors, these activities were motivated by fundamentally different concerns at this time.

Government Support in the Sixties and Seventies

Governmental support for urban agriculture also resurfaced in the1960s and 70s. Legislation and government-sponsored programs envisaged gardening as a tool for low-income residents to supplement their diets.[8] For instance, the Massachusetts Farm and Gardening Act of 1974, (sponsored by a Black activist politician), made it possible for

[8] Stephens et al. (1996) remarked that these efforts began only after the failure of other anti-hunger programs that were part of President Johnson's War on Poverty.

low-income residents of that state to farm and garden on vacant lands for their own sustenance ((Hynes 1996, xiii-xiv; Massachusetts Farm and Garden Act 1974). Several USDA gardening programs also began during this era, notably the Master Gardener and Urban Gardening Programs. These offered technical assistance to urban gardeners and livestock producers through the nation-wide Cooperative Extension Service. (See section below for a more detailed discussion of these programs.) Thus, government programs were involved in urban agriculture at various levels, often as a response to social need.

Urban Agriculture from the 1980s to the Present

Practioners and Supporting Organizations. In a sense, the urban gardening movement has shifted from a government-driven to a community-based activity over the past three decades. Urban food production has also been increasingly integrated into projects focused on community renewal and food security for low-income city residents (Lawson 2005), as well as environmental justice (Hynes and Howe 2002). Contemporary urban agriculture projects build upon many of the themes of the past, including education and life skill training for youth and adults, and even a renewed interest in victory gardening. Moreover, widespread public interest in urban food production has been fueled most recently by the global food crisis, the rising price of petroleum, and the economic recession. This has meant that longtime urban gardeners and farmers are being joined by a growing number of urban residents motivated to produce their own food.

Current urban agriculture practioners include community and backyard gardeners, food access programs, and entrepreneurial ventures, among others. Additional networks have

also joined older supporting organizations such as the ACGA. The San Francisco League of Urban Gardeners (SLUG), for instance, was formed as a gardening organization in the 1980s. SLUG eventually metamorphosized into a more extensive program focused on assisting low-income and underserved communities through food production, job training, and entrepreneurial activities (Lawson 2005, 248-249). The Urban Agriculture Network (TUAN) was founded in 1992 to "focus attention on food production, economic development, and environmental enhancement" (Smit 2005). City Farmer, an online resource, began posting urban agriculture information on the Internet in 1994 (*City Farmer website*). The umbrella organization Community Food Security Coalition (CFSC) began in the mid-1990s in order to facilitate efforts toward food security in communities across the United States. (The CFSC includes the Urban Agriculture Committee.) Most recently, new organizations, such as the MetroAg Alliance (a North American urban agriculture network) and Growing Food and Justice for All (a national anti-racist and food justice network) have emerged with goals of increasing information exchange and furthering national efforts on these topics. These and other organizations comprise an additional layer of the contemporary urban agriculture movement.

Governmental Support for Urban Agriculture Projects. In addition to public interest in urban agriculture, food production in cities has also recaptured the attention of some government agencies in recent years. One example of this was a demonstration "victory" garden that was built at San Francisco's City Hall in 2008 in conjunction with that year's Slow Food Nation gathering. This project was widely publicized as a symbolic gesture intended to demonstrate urban food production on city property. Whether this was

achieved on a societal level is debatable, but it may have helped bring the contemporary importance of urban gardens to the attention of other governmental entities, as both the White House and the USDA followed suit. In 2009, the USDA planted a demonstration garden on its grounds in Washington, D.C., and, as mentioned in chapter 1, First Lady Michelle Obama oversaw the planting of a kitchen garden on the White House lawn.

These examples illustrate the symbolic support for the contemporary urban garden movement that government agencies have shown in California and at the national level. However, there are also notable cases of government agencies' disregard for community-based gardens. One example of this took place New York City in the late 1990s, when then-mayor Guiliani ordered the bulldozing of hundreds of community gardens that were located on city-owned land to make way for housing development (Schmelzkopf 2002). Another recent case of city government antagonism toward urban gardens involved the 14-acre South Central Urban Farm in Los Angeles. This community garden provided hundreds of low-income families the opportunity to grow food from 1992-2006. In a complex suite of land sales and backroom deals, ownership of the garden site was transferred between the City of Los Angeles and a developer over a period of several years. The developer eventually issued an eviction notice to the community gardeners, and after an intense legal case, the garden ended in 2006 (Barraclough 2009; Hamilton Kennedy 2008). This case demonstrates that despite some government agencies' apparent enthusiasm for urban gardens, this has not been consistent in all cases.

USDA Urban Agriculture Programs

Of particular importance to this study is the involvement of the USDA, and particularly Cooperative Extension, in promoting and supporting urban agriculture. As mentioned above, USDA programs have supported the development of urban gardens for both food production, and community building since the Victory Garden campaign of World War II. The first involvement of Cooperative Extension in urban-specific agriculture programs, however, may date to the mid-1960s.

Master Gardener Program (MGP). In 1964 a Cooperative Extension director in Philadelphia helped start community gardens on vacant lots in neighborhoods in the aftermath of national race riots of that decade (Stephens et al. 1996). Eight years later, in 1972, another Cooperative Extension agent began the Master Gardener Program (MGP) in Washington State, which trained volunteers to provide horticultural advice to home gardeners (Malakoff 1994). The program eventually expanded to 45 states with funding from both state departments of agriculture and the USDA(Geisel. P. n.d.; Gibby et al. n.d.) . The MGP still exists in most states. In California, the first Master Gardener programs began in Sacramento and Riverside Counties in 1980, and the Alameda County MGP was established in 1981 (Geisel. P. n.d.)The purpose of the UC Master Gardener Program is to "extend research based knowledge and information on home horticulture/pest management issues to the residents of California (ibid).

Urban Garden Program (UGP). At the federal level, legislators initiated the USDA Urban Garden Program (UGP) in 1976. In contrast to the Master Gardener Program,

which relied on volunteers for community outreach to home gardeners in general, the UGP employed Cooperative Extension agents to "assist in teaching and demonstrating gardening and 4-H type work, as well as nutrition assistance for low income families" in large cities (Stephens et al. 1996). This program also involved volunteers from the MGP and related "master" programs (e.g., Master Composter, Master Food Preserver).

During its first year of operation, the UGP created opportunities for growing and preserving vegetables in six cities—New York, Chicago, Los Angeles, Philadelphia, Detroit and Huston (Hynes 1996). By 1989 over 3,000 in UGP volunteers and staff worked with 200,000 low-income urban gardeners, producing $22.8 million worth of produce on a budget of $3.5 million (Hynes 1996, 90). The program expanded to 23 cities over time, until funding changes in the 1994 federal budget transferred the UGP's then-$3.6 million UGP budget into the Extension Service's general funds (Malakoff 1994). (See also Hynes and Howe 2002; Lawson 2005; Stephens et al. 1996.) This change essentially distributed the program's funding (which had also been reduced to $2.7 million) among 50 states, as well as D.C., Puerto Rico, Guam and the Virgin Islands. Further, funds were distributed based on rural population and the number of farm families, meaning that the more urban states received a smaller proportion of the budget (Malakoff 1994). These changes essentially brought an end to the USDA Urban Garden Program.

Since the UGP's *de facto* elimination, the Master Gardener Program has continued to train volunteers to provide assistance to home gardeners throughout the country.

However, some of the UGP's key features, (such as the explicit focus on transmitting skills to low-income urban residents; creating market- and community development gardens; and providing assistance with urban livestock agriculture), are absent from the MGP mission. Moreover, the MGP relies on volunteer efforts, rather than a paid staff. A few county Cooperative Extension offices across the country still operate urban agriculture programs.[9] Still, the reach of the UGP has not been replicated.

Community Food Project Grants. Two years after the end of the Urban Gardening Program, in 1996, the USDA Cooperative State Research, Education, and Extension Service (CSREES) began a Community Food Projects Competitive Grant Program, intended to "promote self-sufficiency and food security in low-income communities" (http://www.csrees.usda.gov/funding/cfp/cfp_synopsis.html, accessed July 2009). The CFP grant program has provided funding for many urban agriculture projects nationally (USDA CSREES 2007). It is currently the only national USDA program that provides financial support to urban agriculture operations (those which are selected for grant funding.).

Research on Urban Agriculture

Academic research about urban agriculture in the United States has been somewhat limited. In her recent dissertation on urban livestock, Blecha (2007, 31-37) suggests that three factors may contribute to the lack of academic attention on urban (livestock)

[9] Examples of current urban garden programs these are Cornell Cooperative Extension in New York City; New Jersey's Cooperative Extension at Rutgers University; the University of Georgia; Iowa State University Extension; Ohio State University; and the UCCE Los Angeles County Common Grounds Gardening Program.

agriculture in the Global North. These are: a) a focus on international development (which typically takes an applied, rather than theoretical, approach); b) a persistent dualism in Western thought that opposes urban to rural and built environment to wilderness rather than integrating (or deconstructing) such binaries; and c) the invisible economic productivity of urban agriculture. (This last point assumes that agriculture is of greatest interest to academic researchers when it involves economic activity.) While the most of the authoritative literature about the topic has indeed focused on developing regions of the Global South, (Koc et al. 1999; Mougeot 2005; Smit et al. 1996; van Veenhuizen 2006, for examples), a body of U.S.-focused literature is beginning to emerge. This section reviews past research on urban agriculture, and sets the stage for the current study with a summary of past recommendations for addressing challenges to urban agriculture through university research and extension.

Urban Agriculture in Developing Regions of the Global South

Benefits and Governmental Initiatives. As noted above, by international development organizations and governments in some developing countries have promoted urban agriculture in recent decades. In many regions urban agriculture represents a response to food insecurity among poverty stricken urban residents. It is used as a waste disposal remediation tactic, and as a gender equity strategy that provides opportunities for women to feed their families and earn an independent income. Benefits of urban agriculture that have been identified in the international development context include improved food security, nutrition and health; urban environmental management; local economic

development; social inclusion and gender equity (Koc et al. 1999; Mougeot 2005; Smit et al. 1996; van Veenhuizen 2006).

Governmental support for urban agriculture has also grown in response to major economic crises as a way to decrease dependence on petroleum for transporting food to local populations, in addition to the alleviation of urban food insecurity (Smit et al 1996; van Veenhuizen 2006, Kof, Mougeot). Cuba is perhaps the most well known example of government-run urban agriculture systems. Its nationalized program began in the early 1990s, following the collapse of the Soviet Union and subsequent economic crisis. Faced with a food shortage, the Cuban Agricultural Ministry began to provide technical support and physical inputs to urban residents (Altieri et al. 1999; Caridad Cruz and Sánchez Medina 2003; Moskow 2000), and one study found that urban agriculture accounted for 60 percent of all vegetable production in Cuba, (Premat 2005).

In Argentina, a governmental program called Pro-Huerta was formed in response to that nation's economic crisis, which began in 1991 (*Programa Pro-Huerta website* 2009; Casale 2005). The Pro-Huerta Program includes trainings and technical assistance in sustainable agriculture techniques (ibid). In West Africa, one study found that urban food production provided a significant number of jobs or sole sources of income for practioners, and met up to 80 percent of demand for fruits and vegetables (Cissé et al. 2005). These case studies are just a few examples of how urban agriculture has come to play an important role in alleviating the effects of economic crises and poverty in the Global South.

Drawbacks and Challenges. Past studies have also documented several possible negative effects of urban agriculture in developing regions, as well as challenges that limit the ability of practitioners to fully experience the benefits of urban food production. Potential negative effects include improper use of chemicals and domestic waste in urban farming; contamination of crops from polluted soils and irrigation water; and the spread of infectious disease from animals or insects that are attracted to crops (ibid). Moreover, in some areas urban agriculture is illegal, which has lead to inadequate regulation of covert practices and potential for health and environmental hazards (Smit et al. 1996, 199-205). Challenges to urban agriculture vary by region, but a few general themes have been recognized internationally. In Cuba, barriers have included limited land access and theft, in addition to general agricultural challenges such as limited water during dry periods, crop disease, pests and weeds (Altieri et al. 1999). In West Africa, the perceived "excessive dichotomy between city and countryside" was found to lead to marginalization of urban agriculture within the wider agrifood system (Cissé et al. 2005). In their compilation of international information about urban agriculture systems, Smit et al. categorized barriers to urban agriculture as: constraints on access to resources, inputs and services; "special risks" of farming in the city (such as theft); post-production constraints in processing and marketing; and organizational constraints; and socio-cultural biases/institutional constraints (1996: 211). The potential for positive and negative effects of urban agriculture, as well as significant technical and socio-cultural challenges illustrate the importance of information exchange between regions, globally. Moreover, the differences between social contexts of the Global South and the Global North necessitate information exchange about urban agriculture in industrialized regions.

Urban Agriculture in the United States

Many of the studies on urban agriculture in the Unites States have focused on entrepreneurial and/or community gardens. Feenstra et al.'s (1999) national study of entrepreneurial urban gardens focused on the community economic benefits of 27 gardens, and concluded that entrepreneurial urban gardens had the potential to create economic, educational, and community opportunities for low-income urban residents. Another national study, Kaufman and Bailkey (2000) explored the characteristics, obstacles and opportunities of for-market urban agriculture. Their study found 70 such projects nationally (in 2000), and offered action steps for proponents of urban agriculture might take to increase the potential of for-market urban food production. Subsequent reports discussing the benefits, challenges, and potential steps for supporting urban agriculture have since been published by members of the Community Food Security Coalition (Brown 2002; Brown and Carter 2003). Each of these studies documented benefits, challenges, and opportunities for urban agriculture in the United States, as summarized below.

Benefits. The potential benefits of urban agriculture in the United States may be similar to those in developing regions, but, again, with variations due to the differences in social contexts that exist between developing and industrialized regions. Similar benefits include those related to basic livelihoods—access to fresh food, monetary savings realized by producing one's own food, and economic development (Monroe-Santos 1998). The increased availability of garden produce may be particularly important to urban residents whose access to healthy foods is constrained by income, transportation,

and/or location of grocery outlets. Other physical and economic needs that may be addressed through urban food production in industrialized societies include increased exercise, as well as job training and employment opportunities for socially marginalized groups (such as "at-risk" youth, homeless adults, and former offenders) (Monroe-Santos 1998).

In addition to the tangible contribution of urban agriculture to residents' daily needs, the potential psychological benefits of "nature in the city" have been explored in several U.S.-based studies. Francis found that community gardens in Sacramento, California provided participants with accessibility to, and control of, public space (Francis 1989), and that neighbors and other passers-by appreciated the gardens for their visual appeal and provision of open space and safety (Francis 1987). Similarly, a study of community gardens in the San Francisco Bay Area found that community gardening brought emotional, spiritual, community, and stress relieving/relaxation benefits to gardeners and neighbors (Ashton 2003). Moreover, McGrew's study of Hmong gardens explored the cultural importance of gardening to immigrant and refugee communities living in California (1999).

In her nation-wide study, Hynes (1996) documented the personal- and community development benefits of inner city-, prison-, and homeless gardens. Further, Blecha (2007) found that that food provision was *not* the motivating reason for the urban livestock keepers in her study in three U.S. cities. Rather, these practitioners were motivated by a set of philosophical beliefs about the agrifood system. Thus, beyond its

contribution to basic livelihoods, which is a benefit held in common with developing regions, urban agriculture appears to address psychological needs within industrialized society.

Drawbacks. As in developing regions, urban agriculture in the United States also has risks, particularly related to public health. Risks can result from improper or excess pesticide use, as well as improper waste disposal due to lack of knowledge about, or access to, proper disposal facilities (Kaufman and Bailkey 2000). Health issues may also arise from keeping livestock, particularly if practitioners or others that come into contact with animals are not familiar with proper management or sanitation techniques (ibid). The use of contaminated sites, (brownfields, former industrial sites, or abandoned city lots) pose particular concern regarding health, since heavy metals (e.g., lead, cadmium, nickel, mercury) are among commonly found on these types of sites (Dufour 2009; Kaufman and Bailkey 2000). Moreover, land, and time, money, and knowledge required to remediate the soil may be unrealistic for community-based groups (Kaufman and Bailkey 2000). Clearly, these and other risks counterbalance the benefits of urban agriculture discussed above.

Challenges and Constraints. Of particular importance to this study are the various challenges faced by urban agriculture practitioners. Challenges to commercial farms, community gardens, and backyard gardens have been summarized in several of the studies mentioned above. For instance, in their study of entrepreneurial urban agriculture

Kaufman and Bailkey (Kaufman and Bailkey 2000, 56-62) grouped obstacles into four categories:

- *site-related* (e.g., site contamination, security, and land tenure);
- *government-related* (e.g., government control and regulations, or lack of political support);
- *procedure-related* (e.g., inadequate financial resources for operations, lack of sound business planning, or losing touch with original objectives); and
- *perception-related* (negative perceptions of cultivating food in cities; echoes of slavery and sharecropping for African-Americans).

Building upon Kaufman and Bailkey's findings, two resource guides published by the CFSC Urban Agriculture Committee noted similar barriers to success of urban agriculture projects (Brown 2002; Brown and Carter 2003). Among these were: land tenure; start-up costs; access to markets; knowledge and skills; seasonal limits; health risks; urban planning; vandalism; and crime. Further, Feenstra et al. suggested that a lack of financial self-sufficiency and reliance on grants for a majority of project funding might threaten the long-term sustainability of entrepreneurial community gardens (1999, 16-19). This study also found that the integration of food production with other objectives, such as community development or youth education, was a common challenge among many of the gardens studied.

Zoning has been found to pose particular challenges to urban agriculture operations, and is linked to many of the barriers mentioned above. Zoning affects and is affected by city planning; It has impacts on land values, and, ultimately, the long-term sustainability of urban farms and gardens (Brown 2002; Brown and Carter 2003; Kaufman and Bailkey 2000; Noble n.d.). It also dictates which types of activities are allowed in urban communities, placing restrictions on animal husbandry, beekeeping, and even edible

crops in some cities (Maynard 2007; Pollin 2008) Thus, zoning can place major constraints on the types, stability, and significance of food production as a long-term urban activity.

Finally, as in developing regions, the association of agriculture with rural areas and the related perception that agriculture does not "belong" in urban settings has been cited as a challenge in U.S. contexts (Kaufman and Bailkey 2000). This can affect the level of governmental support for urban food production, as well as the degree to which urban agencies and residents view urban agriculture as a legitimate land use within cities (Smit et al. 1996). Thus, the challenges faced by urban agriculture practitioners can range from practical (e.g., skills and knowledge) to financial (e.g., lack of funds; land values) to social (e.g., perceptions of growing food in urban places.) The complexity of these barriers suggests that multi-faceted approaches are needed to address these challenges.

Proposed Solutions to Challenges. In the interest of helping practioners mitigate some of the above challenges, proponents have focused on raising public and political awareness of urban agriculture. Such efforts have included documentation of potential benefits, as well as political lobbying at local and national levels. Several studies have also recommended possible steps toward increasing the level of societal-, political-, and technical support. Recommendations about expanding technical support, including agricultural extension services, to urban agriculture practitioners are of particular relevance to this study. These recommendations have included:

- *Information exchange*. Research and extension services for urban agriculture could facilitate information exchange between cities and between countries (Smit et al. 1996, 252).

- *Extension of agricultural support and training to urban areas*. Entities such as land-grant universities could extend "appropriate farm-related services and opportunities" such as production and business advice, soil testing, and other tools (Brown and Carter 2003, 19-20). Promotion and development of production training for urban farmers could also include "expansion and return of Cooperative Extension at local universities, especially in urban agriculture, food system specialists and nutritionists" (ibid). Programs could also focus on helping urban farmers gain skills, including business planning and marketing, (Kaufman and Bailkey 2000, 72).

- *Education about environmental and public health risks of urban agriculture*. Extension services could help protect urban citizens from environmental health risks by assisting in the identification of alternative sources of water and safe integration of organic waste into urban production (Drescher 2002, 299). Education about these risks, as well as the health risks of heavy metals and contaminated soils could accompany these efforts.

- *Integration of urban food system topics*. Universities could sponsor and publicize "research that integrates health, nutrition, food production, access and economics." Suggested areas of research include: the most appropriate crops to grow in urban areas; community-based leadership development for urban agriculture and community food security; urban soil remediation demonstrations; expanding urban production and markets for culturally-acceptable foods; and environmentally friendly rooftop gardening techniques (Brown and Carter 2003, 20-21; Feenstra et al. 1999).

- *Applied research on urban ecology and agriculture*. New research could fill in gaps in scientific knowledge such as the quantification of nutrient balance and organic material flux in urban agriculture systems, or the short- and long-term effects of using various water and nutrient sources for urban food production (Schertenleib et al. 2002, 223; Feenstra et al. 1999).

- *Current urban agriculture extension models exist and could guide future developments*. To this end, Kaufman and Bailkey concluded that it is important that the urban profile of state extension services continues to expand, so that valuable support services from skilled university outreach personnel can be more available to the city farming movement. Extension agents working for state land grant universities, in particular, should be encouraged to promote urban agriculture in cities. The examples set by Cornell University in New York City and the University of Georgia in Atlanta […] serve as good models for other state extension services (2000, 80).

Clearly, these and other suggestions pertaining to agricultural extension helped motivate the current study as an action research project within the University of California system.

Recent Analyses of Urban Agriculture Systems

In addition to the case studies and action-oriented literature reviewed above, two recent dissertations have delved into more theoretical analyses of urban agriculture in several U.S. metropolitan areas.

Jennifer Blecha's (2007) dissertation examined the recent re-emergence of small-scale urban livestock agriculture (ULA) in Seattle, Portland and Detroit. Blecha's research used these cities as case studies to examine beliefs that motivated urban livestock agriculture. Her work explored ways in which a set of imaginaries regarding animal husbandry were enacted by those raising livestock in cities, as well as some difficulties that were faced in raising livestock in contemporary cities. Blecha found that pre-existing notions about animals motivated ULA practitioners to keep livestock, but that these notions were further defined by their interactions with the animals. As mentioned above, the livestock keepers in Blecha's study were not primarily motivated by a desire for food. Rather, she argued, their ULA activities were "undergirded by a dissatisfaction with the dominant food and agriculture systems, a concern for the environment and for animal welfare, and a desire for young people to learn compassion, care, and critical thinking" which reflected "alternative imaginaries" of a different (and presumably better) urban system (265). Suggested areas for future research included: quantitative studies of ULA in the United States; practical research on food safety issues related to ULA; and further research on the therapeutic role of urban livestock.

Another recent dissertation written by Efrat Eizenberg (2008) examined the system of community gardens in New York City, describing the process of production of garden spaces as taking place at individual, collective and institutional levels. Eizenberg's analysis drew from the work of several critical urban scholars to "re-imagine the city with a politics of hope." She envisaged the gardens in her study at three levels: individual, collective, and institutional, and examined how each of these levels were related and contributed to the production of urban space. Eizenberg concluded from her research that "in the case of community gardens, space is not only a product, but a productive force." She found that gardens gave community residents both a sense of ownership and control over the urban environment. Through participation in gardens, traditionally marginalized residents also gained power to express and celebrate cultural differences, including different expectations from the environment, and "to have their urban identity recognized and their right to the city asserted." Eizenberg thus suggested that that community gardens in her study used nature as a political and politicizing means, offering gardeners a certain freedom from top-down governmental structures and opening a door for urban citizens to enact changes in the relationships between urban residents and environment. Several of the themes in Blecha's and Eizenberg's dissertations are touched upon in this dissertation. Comparisons of urban agriculture in the United States to that in the Global South, as well as relationships between urban agriculture and urban social justice, were of particular relevance to this study, and will be explored in subsequent chapters of this dissertation.

Chapter Conclusion

This chapter has reviewed numerous historical aspects of urban agriculture, and recent empirical studies on urban gardening and livestock agriculture globally and in the United States. The limited number of academic studies about urban agriculture suggests a need for more in-depth analysis in the United States context, and the most recent studies reviewed in this chapter have delved more deeply into this realm. Recommendations from past studies have also pointed to a need for a solutions-oriented approach to urban agriculture research, which was among the motivations for this research. These will be addressed in the next chapter, which describes the theoretical and action research approaches that guided this study.

CHAPTER THREE

Theoretical and Action Research Approaches

"Research that produces nothing but books will not suffice."

(Lewin 1948, 203)

This chapter provides an overview of the theoretical concepts and research principles that guided this study. (Specific field research methods are described in chapter 5.)

Social Movements and Theories of Change

Urban agriculture can be envisaged as part of a movement that seeks to instigate social and environmental changes within the agrifood system. In addition to definitions based on location or interdependency with cities (see chapter 1), urban agriculture can thus be conceptualized with respect to that which motivates its practitioners. Whether it is practiced as a strictly commercial activity or aligned with one or more social movements, a more in-depth understanding of urban agriculture in the United States might be developed using the lens of several social movement theories.

In his early work *Social Justice and the City,* geographer David Harvey noted that "a social movement becomes an academic movement and an academic movement becomes a social movement when all elements in the population recognize the need to reconcile analysis and action" (1973, 149). If urban agriculture has in fact advanced to the stage of being a social movement, it might also be conceptualized as part of a wider set of

alternative agrifood movements that have developed as "legacies of and in reaction to traditional conceptualizations and practices" in the system (Allen 2004, 21).

Alternative agrifood movements have incorporated a wide range of issues, including those focused on environmental and social justice, and specific activities have been led by a diversity of social actors. Among scholars, activities have included analyses of agrifood system activities such as farmers markets and farm-to-school programs. Among community groups, actions have included the use of research to inform food justice activities. Within the governmental sector, agencies have commissioned studies to inform policy related to public health issues. The fact that initiatives to change the agrifood system have developed both within academic settings and among the wider public suggests that a 'need to reconcile analysis and action' has been recognized by various social groups. Still, the joining of social movement participants working to change specific elements of the system has not itself guaranteed social change within its *structure*, as discussed below.

Evolutions, Alternatives, Oppositions, and Revolutions

Research about the evolution of alternative agrifood and environmental movements has uncovered inconsistencies in the steps taken toward sustainability, an idealized state which is presumed to be "better," environmentally, economically, and socially, than the existing one. Patricia Allen, for example, has written extensively about the exclusion of social issues from alternative/sustainable agriculture movements. She has observed that environmental issues have overshadowed social aspects of the agrifood system in at least

the past two decades (Allen 1994, 2004, 2008). Other scholars have argued that a middle/upper class White cultural legacy has been transferred from the mainstream environmental movement to alternative agriculture- and community food movement ideologies and practices (Guthman 2003, 2008; Slocum 2006). Meanwhile, referring to the mainstream environmentalism, Dorceta Taylor, has written about that movement's grounding in a notion of environment which was socially constructed by evoking images of an idyllic 19th century that were not a reality for most people of color during that time (Taylor 2000). (Agricultural slavery, as well as other forms of 19th century racial exploitation, is clearly implicit in this observation.)

If alternative agrifood movements, like the environmental movement, have in fact been imbibed with a White cultural legacy, this has likely contributed to the exclusion of social issues, specifically those affecting communities of color, from agrifood movement agendas. In short, the coming together of various social actors in environmental-, and subsequently, alternative agriculture movements, has not added up to an ideological investment in equality or justice for all. This weakens the wholesale association of agrifood movements with socio-cultural revolution, and from a theoretical standpoint, it requires critical analyses of these initiatives.

Alternative/Oppositional Agrifood Initiatives. The examples above demonstrate ways in which deeply embedded cultural values may allow social movements for change to actually reinforce existing structures. This may occur in part when efforts to create alternatives fail to address structural causes of the very issues that movement actors hope

to affect. To this end, Allen et al. (2003) have questioned the "celebration" of alternative agriculture movements as agents of social change through an analysis of California "alternative agrifood initiatives" (AFIs)—initiatives which share a political agenda to "create food systems that are environmentally sustainable, economically viable and socially just" (ibid). (Examples of AFIs in their California study included such activities as building support for small-scale family farmers through farmers' markets, as well as "organizing and empowering marginalized communities" through urban food production projects.)

Following sociologist Raymond Williams, Allen et al. suggested that there is a distinction between initiatives that seek *alternative* agrifood systems, which would make changes at the edges of political-economic structures constituting the system, and *oppositional* ones, which would "seek to create new structural configurations" in the same. Examples of alternative agrifood systems might include farmers' markets in wealthy neighborhoods, which often provide important marketing opportunities for small-scale farmers, but fall short of directly challenging the capitalist society in which they are embedded (Allen 2003; cf. Harvey 1973). Examples of oppositional systems might include legislative reforms affecting farmworker civil rights that confront the system of exploitation upon which American agriculture has been based (Allen 2003; Guthman 2003; Williams 2005). Allen et al.'s analysis of California AFIs enabled a refined understanding of initiatives that they hoped would motivate critical reflection within the alternative food movement more widely.

Revolutionary Theory. Just as AFIs can be viewed as alternative or oppositional, academic work on urban agriculture can also occupy various positions with regard to social change. Harvey's (1973) writings on revolutionary theory thus lend another perspective on the spectrum of change-oriented ideologies. Building upon ideas set forth in Thomas Kuhn's (1962) *Structure of Scientific Revolutions* and an article by economist H.G. Johnson, Harvey proposed that there were three types of theory: *status quo*, counter-revolutionary, and revolutionary. As explained by Harvey, *status quo* theory is grounded in a reality that it seeks to portray, but ascribes to a universal truth status and can thus only result in perpetuation of the *status quo*. Counter-revolutionary theory may not appear grounded in reality that it seeks to portray, but "obscures, be-clouds or generally obfuscates (either by design or accident) our ability to comprehend that reality." Such theory, Harvey wrote, "automatically frustrates either creation or implementation of viable policies." The third type of theory, revolutionary theory, is

> grounded in the reality it seeks to represent, the individual propositions of which are ascribed a contingent truth status. A revolutionary theory is dialectically formulated and can encompass conflict and contradiction within itself. [It] offers real choices for future moments in the social process by identifying immanent choices in an existing situation. The implementation of these choices serves to validate the theory and to provide the grounds for the formulation of new theory. A revolutionary theory consequently holds out the prospect for creating truth rather than finding it (ibid, 150-151).

Following these concepts, if urban agriculture can be discussed as a revolutionary social movement (as discussed in chapter 1), it is also of interest to examine if there is, or if there could be, a meaningful reconciliation of the academic with the social in this regard. For instance, how might the image of urban agriculture as revolution relate to the lived experiences of urban farmers and gardeners? To this end, scholars engaged in

revolutionizing the agrifood system through research might be grounded in Harvey's third type of theory because it allows for the problematization of the very social arrangements in which many academic institutions are based.

Intersecting Analyses of Theory and Social Action

This study was conducted within an action research framework. As will be discussed below, action research rests upon the contention that theoretical understandings and social actions inform each other in order to realize progress toward some social change. To this end, the intersection of Allen et al.'s agrifood movement analysis and Harvey's theory of theories provides an interesting tension that can be used to explore both practical and theoretical aspects of urban agriculture. One way to conceptualize the ways in which these two constructs overlap is presented in Box 1:

Box 1.
Intersection of Harvey's (1973) and Allen et al.'s (2003) Analytical Frameworks

Status quo theory (Harvey) is theory that functions within an existing system, and does not seek to appear different or achieve a different outcome.

Alternative agrifood initiatives (Allen et al.) are initiatives that seek to create alternatives within the existing agrifood system, but without changing the basic structure of the system. Initiatives that purport to make systemic changes, but actually only offer alternatives within the system might relate to Harvey's *counter revolutionary theory*, or that which appears to support systemic change but actually reifies the *status quo*. However, in the case of AFIs, it is presumably not the intent of AFI leaders to underhandedly maintain the *status quo*. Rather, as discussed by Allen et al., it is generally easier to gain support for alternative approaches within conservative societies. According to Harvey, authoritative structures are more likely to support "alternatives within" (rather than oppositional activities) because they maintain the *status quo* while appearing to be progressive.

Oppositional agrifood initiatives (Allen et al.) are initiatives that seek to oppose existing agrifood systems and social arrangements, at times through political struggle or debate, and at times by creating a new system entirely. This overlaps most closely to Harvey's revolutionary theory.

Box 1.

The intersection between analytical frameworks presented in Box 1 is useful to the action research approach, with its attention to the dialectic between theory and action. As discussed above, urban agriculture is most generally defined by its location, yet the similarities between agricultural operations located in metropolitan areas may be as much (or even more) related to practitioners' worldviews and motivating philosophies. Clearly, the visions of urban-agriculture-as-revolutionary practice are more complex than the simple use of the term by movement actors, and this is where social theory can be usefully applied. Moreover, in terms of the 'reconciliation' of academic and social efforts to bring about systemic change, frameworks which give credence to the dialectic between theory and action are important to building sustainable social movements. Action research is one such framework, and is discussed next.

Action Research Framework

This section reviews the evolution of action research and its use in this study.

Concepts and Traditions

Action Research (AR) generally encompasses a broad set of research approaches aimed at empowerment of research participants and social change (Reason and Bradbury 2001). The theoretical origins of AR are often traced to the work of Kurt Lewin, a social psychologist who, in the 1940s, aimed to build bridges between social action and social theory, (Lewin 1948; *Ecology Center website* 2009). Lewin believed "that knowledge should be created through problem-solving in real life situations" (cited in Herr and Anderson 2005, 11) and defined action research as "comparative research on the conditions and effects of various forms of social action and research leading to social

action" (Lewin 1948, 203). One of the more lasting of Lewin's AR concepts remains that of a research process consisting of a "spiral of steps, each of which is comprised of a circle of planning, action, and fact finding about the result of the action" (ibid, 206). (See Figure 1.)

Many types of action research have been inspired by Lewin's early work. Contemporary approaches include *business-oriented* action research (designed to increase productivity); *action science* (designed to generate theory based on observations of the introduction of social changes); and *action research in education* grounded in the work of pragmatist John Dewey (Argyris et al. 1985, 18; Herr 1995; Herr and Anderson 2005, 18). Since the 1990s, *participatory action research* (PAR) has become one of the better-known approaches to AR, particularly among community development professionals in the Global South. (See Bacon et al. 2005; Fals-Borda and Rahman 1991 for examples.)

The PAR movement originated in the late 1960s, as activist-researchers developed new forms of field research aimed at producing "radical transformations [that were] necessary and urgent in society and in the use of scientific knowledge" (Fals-Borda and Rahman 1991, 24-25). The PAR approach emphasized participation, education, and community empowerment through research aimed at improving community well being, and a process designed to decrease future dependency on outside researchers. In the 1970s, founders of this movement (many of whom were university researchers) sought to create a balance between the activism and radicalism that had driven the early PAR movement on one hand, and the theoretical aspects of research that are typically the domain of the social

sciences (ibid). PAR thus drew originally from philosophies of Karl Marx, Antonio Gramsci, Paolo Freire, and Jürgen Habermas, among others (Fals-Borda 2001; Fals-Borda and Rahman 1991; Herr and Anderson 2005; Reason and Bradbury 2001). Critical philosophies have also been instilled in other current action research approaches.

General Characteristics of Action Research

Action research can be considered an approach to applied research. However, there are several characteristics of AR that distinguish it from other applied research frameworks. These include attention to process, a specific conceptualization of praxis, and integration of participatory approaches. Additionally, as opposed to positivist approaches that are defined by their belief in neutral objectivity, action research emphasizes an overt motivation to enact social change, as elaborated below.

- *Attention to process*. Action research projects typically place importance on noting and evaluating the processes of the project, in addition to the research methods and their outcomes. Drawing from Lewin, AR processes are often described as a spiral of cycles consisting of four steps:
    - Developing a *plan* of action to improve what is already happening;
    - *Acting* to implement the plan
    - *Observing* the effects of action in the context in which it occurs;
    - *Reflecting* on these effects as a basis for further planning, subsequent action (Herr and Anderson 2005, 5-9).

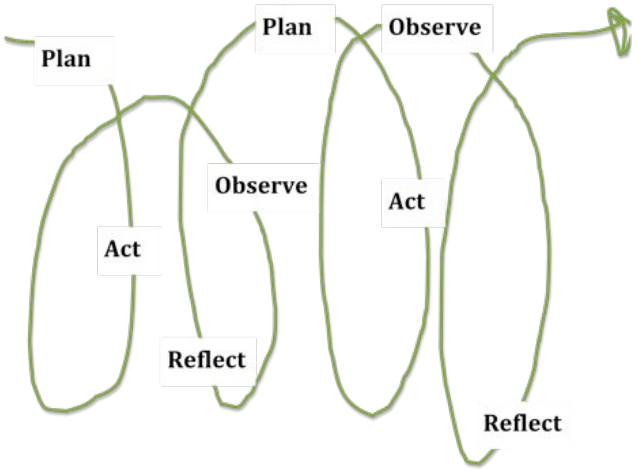

Figure 1. Action Research Spiral (Image created by author.)

- *Praxis*. Within the action research framework, the term praxis generally connotes an intertwining of theory (or knowledge) and action (Kemmis 2008; Reason and Bradbury 2008). While praxis may be understood more generally as "social practice," Karr and Kemmis explicitly distinguish praxis from *practice*, the latter meaning everyday action, and the former meaning "informed or committed action" (1986, cited in Kemmis 2008). As suggested by Reason and Bradbury, "action without reflection is blind, just as theory without action is meaningless" (2008, 4). As such, the concept of praxis, in which theory and action are devised dialogically, is at the core of most AR approaches.

- *Participation*. Participation of stakeholders is also central to most action research processes (Herr 1995; Herr and Anderson 2005; Lewin 1948). Many AR projects described in the literature integrate participatory techniques throughout the entirety of the research process (from planning through to evaluation). However, participation of

community members or other stakeholders is sometimes not feasible or appropriate for stakeholders during certain stages of the process. This can be due to timing or the research methods used. In these cases, the professional/outside researchers may implement more traditional, (i.e., non-participatory) research techniques during some stages of the project, and rely upon stakeholder participation when appropriate (Ospina et al. 2008).

- *Overt motivation to enact social change*

  Action research is generally conducted in order to realize changes in a given social structure, often related to social and environmental justice, and emancipation. (See Fals-Borda and Rahman 1991; Freire 1993; Reason and Bradbury 2001.) In contrast to other research paradigms (i.e., positivism), according to which valid research must be grounded in "value-neutral" objectivity, action research begins with an overt desire to implement informed changes in some existing social arrangement. The AR framework thus tends to reject the predominance of objectivity as a requisite component of valid research.

Objectivity and Validity in Action Research

In conjunction with the focus on structural social change, knowledge generated through the action research process tends to be "practice-driven rather than theory-driven" (Herr and Anderson 2005, 52). These two tendencies can provoke critique from the positivist school of thought pertaining to the effect that a commitment to social change through research has on scientific objectivity. However, action research is not the only research

paradigm that has dealt with such critiques. Scientific objectivity has long been debated by critical social scientists including Habermas, who observed that objectivity in effect removes "the knowing subject [from its position as] the system of reference" (1987, 68). Habermas also argued that "knowledge production is never neutral but is rather always pursued with some interest in mind" (cited in Herr and Anderson 2005) and that "objectivism deludes the sciences with the image of a self-subsistent world of facts structured in law like manner; [and] thus conceals the *a priori* constitution of these facts" (Habermas 1987, 69).

Action research encompasses each of Habermas' points above. It explicitly steps away from the positivist paradigm to: recognize and return value to the "knowing subject" within the research process; acknowledge that all research is motivated by social beings; and attempt to peel back the layers of reality that lie beneath superficial research findings. In so doing, action research joins other approaches to critical social science that reject the idea that objectivity is an appropriate singular claim in evaluating the social world (Fals-Borda and Rahman 1991; Reason and Bradbury 2008; Lofland et al. 2006, 16, 83).

The belief in, or questioning of, objectivity remains a matter of debate among social theorists, and will not be further explored here. However, the links between objectivity and validity are germane to the action research process. It is thus worth noting that questionable or "invalid" data have the potential to misguide steps of the AR spiral and may therefore be antithetical to the action-oriented goals of the process. Since the goal of many action research projects is to guide efforts at social change, it is in both researchers'

and project participants' best interest to conduct valid research that produces accurate data and findings.

In order to evaluate validity, action researchers have developed various metrics for evaluating the scientific merit of their work. Fals-Borda and Rahman, for example, discussed social verifiability as a measure of "objectivity of *knowledge*" (emphasis added) (Fals-Borda and Rahman 1991, 15). Likewise, Herr and Anderson have argued that "action research should not be judged by the same validity criteria with which we judge positivistic and naturalistic research," and have proposed five alternative criteria to evaluate validity: *outcome, process, democratic, dialogic,* and *catalytic*. These criteria are linked, respectively, with: the achievement of action-oriented outcomes; a sound and appropriate research methodology; results that are relevant to the local setting; the education of both the researcher and participants; and the generation of new knowledge (Herr and Anderson 2005, 53-54). These are discussed further below and in the concluding chapter of this dissertation.

Cooptation and Integrity of Action Research

Action research is clearly infused with critical philosophies that challenge the *status quo* of both social arrangements and scientific methodologies. This can present challenges to university-based action researchers who strive to maintain a critical perspective throughout a project (Herr and Anderson 2005, 24-28; Reason and Bradbury 2008). Harvey's work on revolutionary theory, as well as Fals-Borda and Rahman's account of PAR, can be aptly applied to this dilemma. Harvey observed that universities, in their

role as 'organizers of knowledge,' serve to "perpetuate society in its existing state", and that the "organization of knowledge [therefore] has an inherently *status quo* or counter-revolutionary posture" (1973, 147). Meanwhile, in their experience with participatory action research, Fals-Borda and Rahman observed that as the successes achieved through PAR approaches in the Global South were understood and appreciated by mainstream development agencies, "many officials and researchers began to claim that they were working with PAR, when in actuality they were doing something quite different," which was *not* grounded in the critical philosophical traditions of PAR described above (Fals-Borda and Rahman 1991, 27-29). Thus, the integrity of university-based action research can be compromised by:

a) An expectation that university-based researchers conform to a *status quo* within the institution, on one hand, and action researchers' commitment to retain a critical and action-oriented stance on the other.

b) The cooptation of participatory and/or action oriented approaches by the host institution.

When action research is co-opted or used to reinforce the *status quo*, it can effectively work *against* the fundamental social changes that it proposes to address by failing to address structural issues. In Habermas' words, this "conceal[s] the *a priori* constitution of facts," and in Harvey's words, this "generally obfuscates […] our ability to comprehend […] reality" (Harvey 1973, 150). Because of these possibilities it is essential to action research processes that researchers retain a critical stance that recognizes and attends to the replication of *status quo* social arrangements.

Researcher Positionality

The position of the researcher vis à vis the research participants takes on a significance in action research beyond that of more traditional social science frameworks, again because of the focus on social change. Based on a thorough review of AR studies conducted in numerous disciplines, Herr and Anderson devised a continuum of six positionalities in which action researchers may situate themselves. These are summarized in the table below, based on a more detailed description found in Herr and Anderson (2005).

Insider 1----------2---------- 3 ---------- 4----------5----------6 *Outsider*	
Positionality	**Summary**
1. *Insider (s)*	Insiders alone or with other insiders study own practice and/or practice setting.
2. *Insider in collaboration with other insiders*	Insider conducts a collaborative research project with other insiders, not necessarily on own practice/setting.
3. *Insider(s) in collaboration with outsiders*	Insider(s) (e.g. community members) invite or contract outside researchers to collaborate on research.
4. *Reciprocal collaboration (insider-outsider teams)*	Full partnership between outside researchers and community members—an "ideal" form of PAR. Often the result of years of prior negotiation among all stakeholders.
5. *Outsider(s) in collaboration with insider(s)*	Outsiders initiate a research project with insiders, with varying levels of commitment/participation among insiders.
6. *Outsider(s) studies insider(s)*	Traditional outsider position taken by qualitative and quantitative researchers. Included here because it may include one or more of the following: participation with actors in the field; study of AR projects; scholarly work on AR as a methodology; collaborative research among outsiders.

Figure 2. Adapted from Herr and Anderson 2005, 31-45.

Clearly, these categories may overlap in practice, and action researchers may also take on multiple and changing positionalities over the course of a given project. For instance,

Ospina et al. noted that in their large-scale action research project, their positionality was "complicated by the competing demands [they] faced from the three major interests [they] wanted to honor." These were: the conventional academic perspective of their institutions; their interpretive approach and demands of the research participants; and funders of the project who had outlined a particular set of questions to be investigated (2008, 422-423). Ospina et al. identified with one positionality early-on in their project, but felt obliged to readjust this stance in response to "the interests of the various parties involved and the particular kind of knowledge most useful to each" (ibid). Thus, Herr and Anderson's continuum is not prescriptive, but rather demonstrates the range of positionalities that professional researchers may take vis à vis the other participants in an action research process. What is important in terms of identifying outside researchers' relationship to "insiders" is the recognition of how positionality influences both subjectivity and objectivity of the research findings. To this end, the following section describes the personal motivations that led to the use of action research for this study.

Positionality and Approach Taken in This Study. I chose to undertake this study as a hybrid project (i.e., partially participatory, partially traditional), akin to Ospina et al.'s example above. As the main researcher, I integrated stakeholder input when possible and appropriate, but managed and directed the project largely without stakeholder participation. I chose to use a hybrid approach for two main reasons, each related to the fact that I was a graduate student. First, I felt that the level of flexibility required to conduct a fully participatory project (i.e., timing; adjusting methodology in response to stakeholder capabilities) would make it difficult to complete my graduate program in a

timely manner. Conversely, I feared that the depth of analysis required for completing my dissertation might (justifiably) frustrate research participants if they had dedicated substantial amounts of time to this project with the expectation of uncovering directly applicable information.[10] For these reasons, the project was not participatory in the tradition of PAR (wherein participants are involved in defining the problem, designing and conducting the research, and analyzing and reporting results. (See Fals-Borda and Rahman 1991, 8.) Still, all reasonable attempts were made to involve local stakeholders—urban agriculture practitioners, non-profit organizations, and SFP/Cooperative Extension staff—during each phase of the study, from planning to reporting.

My position as the researcher in this project was no less complex than the one described by Ospina et al. As it did for these authors, my own positionality evolved over the two years of the project. This evolution was based upon knowledge and insight gained through the field research and participant observation, as well as my employment status at SFP. (The latter of these factors was itself affected by funding and budget issues beyond my control.) I, too, needed to balance the competing demands of the academic perspective, a sincere commitment to uncover useful information for research participants and stakeholders; institutional politics of the DANR/CE system; and the desire to finish my doctoral degree in a timely manner. Moreover, I felt that my personal ability to affect changes actually declined over time, again due to issues beyond my control.

[10] In order to provide timely information to research participants and other stakeholders, I did write a preliminary research findings article, which was mailed to key informants and posted on the SFP website for public accessibility.

In terms of the validity and authenticity of the AR approach, the five validity criteria described above were useful over the course of the project. Five questions helped guide each step in the AR spiral:

- Did the project achieve action-oriented outcomes?
- Were sound and appropriate research methodologies used?
- Were results relevant to the local setting?
- Were both the researcher and participants educated [through the project]?
- Was new knowledge generated?

These criteria will be revisited in the final chapter of this dissertation. The following chapter describes the study context, Alameda County.

CHAPTER FOUR

Study Context

Alameda County was chosen as a study site because of its demographically diverse population and its historically dynamic agrifood system. Alameda County is located on the East San Francisco Bay and is bordered by five counties: Contra Costa to the north, San Francisco to the west, San Mateo to the southwest, Santa Clara to the south and San Joaquin to the east. The land area is 738 square miles, of which 45 percent remains undeveloped. Alameda County consists of 14 incorporated cities and six unincorporated places, including the prominent cities of Oakland and Berkeley in the western portion. The eastern portion of the county consists of parklands and cattle grazing, and rapidly-expanding communities such as Livermore and Pleasanton, which mirror areas in the Central Valley where new housing developments and ranchettes (i.e., residences built on lots of 1.5 acres or more) are on the rise (American Farmland Trust n.d.).

Figure 3. Map of California Highlighting Alameda County. Benbennick, M. 2006. Public domain image accessed at http://commons.wikimedia.org/, December 15, 2009.

Agricultural production in the county has continually evolved in tandem with urbanization and demographic transitions. Although it is no longer a major agricultural region, recent trends in commercial agriculture, food insecurity, as well as initiatives to affect each of these made the county an interesting study site. This chapter provides an overview of each of these aspects.

Countywide Demographics

There are 1.45 million residents in the county, at least 83 percent of whom lived in cities of 50,000 or more in 2002 (Cozad et al. 2002). Population densities average 2,069 people per square mile (Bray 2008), and no single ethnic group comprises a majority, as shown in Figure 4.

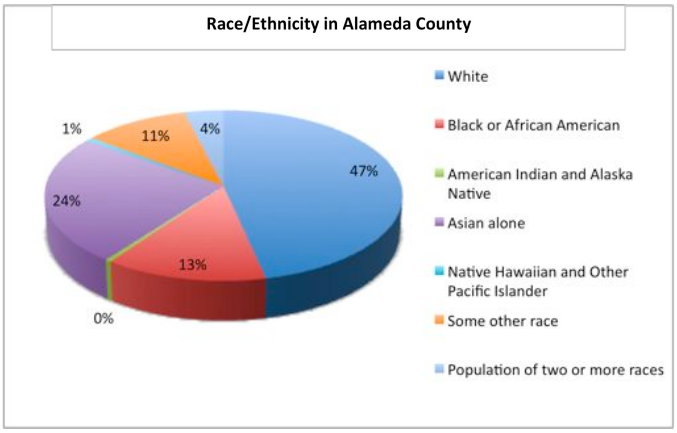

Figure 4. Calculated from U.S. Census Bureau 2005-2007 American Community Survey.

Median household income in the county was $57,659 in 2004 (U.S. Census Bureau 2006), yet wealth discrepancies have been segmented geographically, as well as by

race/ethnicity.[11] While the wealthiest areas had median household incomes between $94,001 and $167,000 in 2000, the least wealthy areas had median incomes between $2,499 and $31,000 (U.S. Census Bureau 2000). Meanwhile, 11.2 percent of the population lived in poverty (Byers 2008: 41-54) and, as shown in Figure 5, poverty was experienced by a greater percentage of African-American and Latino groups than by White and Asian groups.

Percentage of Children Under Age 5 Living in Poverty by Race/Ethnicity, Alameda County

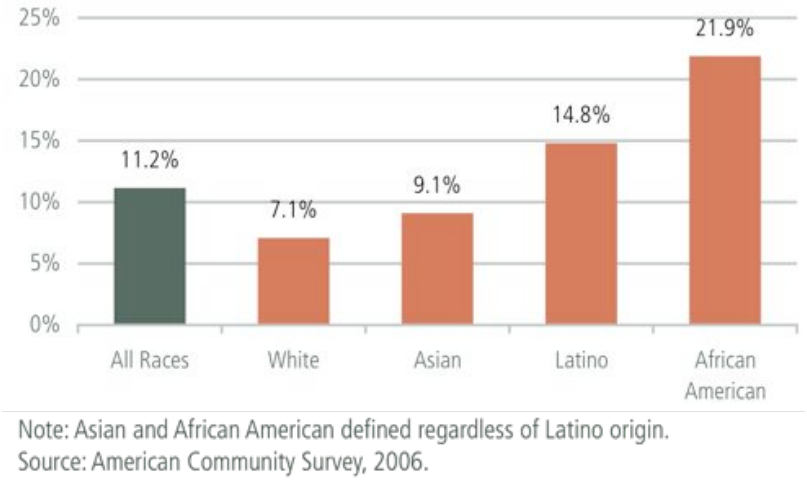

Figure 5. Source: Beyers et al. 2008, 44.

Evolutions of Agriculture in the Alameda County Region

From Early Civilizations to Urban Edge Agriculture

Food provision in Alameda County region began with hunting, gathering, and fishing practiced by the Chochenyo tribes as early as 4000 B.C.E. The Chochenyo peoples ate a

[11] Median household income in 2007 was $68,263 (U.S. Census Bureau, http://quickfacts.census.gov. Accessed June 2009). The 2006 figure is reported for comparison with other income statistics reported in this dissertation.

wide variety of native plant and animal products, and except the dog, the Chochenyo tribes are not known to have domesticated other species (coloredreflections.com). At the time of Hispano-European contact with Chochenyo (later referred to as Ohlone) people, there were 1.5 million people who belonged to this or one of the other surrounding tribes in the region (Levanthal et al. n.d.). Native populations declined to 20,000 by the early 20th century (ibid).

Spanish colonists arrived in the East Bay Area around 1770, and in 1797 founded Mission San Jose (Alameda County Government n.d.) .Cattle and sheep husbandry were established by Franciscan Fathers at Mission San Jose around 1797, and were the first documented agricultural operations in the region (Bradley 1915). Grain production (barley, wheat, and oats) was established in the valleys during the 18th century, and livestock husbandry moved to the hills. The region was divided into counties during this era (Bradley 1915; Walker 2004).

The County of Alameda was formed out of portions of neighboring Contra Costa and Santa Clara Counties in 1853 (Alameda County Government n.d.), and its agriculture evolved alongside urban areas during the mid-to late 19th century (Walker 2004, 41). In his historical account of California agribusiness, Walker notes that "gardening and truck farming for city tables took hold under the stimulus of high food prices, trucked around the bay flats and in San Francisco itself" (ibid). Alameda County's agricultural products during the second half of the 19th century were varied, and included market vegetables, cattle, hay, and dairy products (Bradley 1915). The leading agricultural areas in

California at that time were along the Bay-Delta axis, and in both 1869 and 1899 Alameda County ranked in the top ten farm counties (Walker 2004, 42-43). An early 20th century report also noted that "most of the farms [in Alameda County were] within easy trucking distance from the Oakland markets," and that others were located close to railroad lines (Bradley 1915). Thus, the links between urban areas and high value crops took hold in the county's early history.

By the turn of the century, agricultural production, as well as employment in the industrial sector, was often segmented by ethnic group (Walker 2004, 41). Significant populations of Chinese, Japanese, and Portuguese immigrants lived and farmed in the region during this era (Chinn et al. 1969; Walker 2004, 136). Meanwhile, African-Americans living in the East Bay were more involved with the industrial sector, beginning just after the Civil War. West Oakland became the home of many railroad porters and their families during the first part of the 20th century(Alameda County Department of Public Health 2001). World War I brought the shipbuilding industry to West Oakland, which soon became one of the most diverse districts in Oakland. Americans of African, Italian, Dutch, Mexican, and Portuguese descent lived and worked in West Oakland during this era (ibid).

Agricultural regionalization had also begun in the county by the early 20th century (Walker 2004, 41), as specialization among the various ethnic groups intensified. For example, Portuguese-American communities, which were concentrated in San Leandro, practiced market gardening and livestock husbandry as part of a "subsistence-commercial

agricultural system" (Graves 2004). San Leandro was also known as the center of the cherry growing industry, and Bay Farm Island was entirely devoted to vegetable cultivation for markets in Oakland and San Francisco (Bradley 1915). Garlic was grown by Chinese market gardeners, and citrus was grown in all parts of the county, as were strawberries, the latter of which were grown mainly by Japanese sharecroppers. Vineyards were established in Livermore, and floriculture, seed cultivation, and nurseries located in the South Bay area gained national prominence during this era (Bradley 1915; Walker 2004).

Agricultural production continued to be tied to markets in nearby urban centers during the early 20th century, but producers were also forced to respond to increasing urban growth and rising land costs. In a sense, the proximity of agriculture to cities defined Alameda County's agrifood system during this time, and high market prices for produce allowed farmers to purchase land despite the rising costs of land. Fruits and berries were grown for sale to nearby urban consumers, as well as to the 10 large canneries operating in the county (Bradley 1915). Hayward and Castro Valley were particularly intense regions of poultry production, again because the "proximity to markets composed of city dwellers in rapidly growing Bay region cities gave assurance of larger profits because of the cheapness of delivery charges" (ibid). Some urban residents kept "family cows" that provided dairy products for household consumption, but by 1915 sanitary regulations and compact building had "banished these cows until the sole source of supply for [dairy products became] the regular [*sic*] dairy farms" (Bradley 1915). The "regular" dairy farms in San Leandro were subsequently pushed to the Livermore valley due to the

spreading of urban populations, as well as the increased the market demand for dairy products that resulted from the removal of dairy cows from the center city (ibid).

Bay Area agriculture peaked in the 1920s then declined. Alameda County's agriculture declined further than that of surrounding counties, as vegetable production and floriculture moved elsewhere and urbanization ensued (Walker 2004, 42). By 1940, nursery products and cut flowers were the major crops in the county, followed by vegetables/truck crops; field crops; and fruits/nuts (Laing 1940). During the 1950s and 1960s, truck crops were the top commodity, especially cauliflower, strawberries and lettuce in the 50s, in addition to canning tomatoes, "Chinese vegetables", mustard greens, and turnip greens in the 60s (Laing 1950; Strobridge Jr. 1961). In addition to commercial operations, there were also at least two institutional farms in Alameda County during the mid-20th century, both located in San Leandro. The Arroyo del Valle Sanatorium Farm was used to raise hay and alfalfa for the county dairy, as well as vegetables and fruit for patients as early as 1922 (Homan 2006). The County Prison Farm operated on 265- acres adjacent to the nearby Fairmont Hospital until being replaced by the Santa Rita Prison Farm in 1947 (Alameda County Sheriff n.d.).

Generally, the same types of crops have been grown in the county since the 1970s, although their economic importance has varied. Nursery and cut flowers have been the leading products in terms of economic value, while economically important vegetables have included cauliflower, lettuce, mustard and turnip greens, Chinese vegetables, cabbage, cucumbers, tomatoes, pumpkins and sweet corn (Green 1980, 1990; Whitaker

2000). Wine grapes and berries—both high-value products—have dominated fruit production. There have also been a handful certified organic mixed vegetable farms and vineyards listed in the commissioner's report since 1990 (ibid).

From hunting and gathering to certified organic production, Alameda County has thus had a long and ever-evolving agricultural history, which has continually involved ethnic specialization and an interdependency between agriculture and cities. The following section builds upon the historical data and provides an overview of the current commercial agriculture system in the county; demographic and related agrifood system dynamics; and as well as some recent agrifood initiative efforts.

Current Commercial Agriculture System

As part of the San Francisco Bay Area, Alameda County is no longer the major commercial food production region of the past, and the conversion of land from agricultural to non-farm uses has ensued. Still, agriculture has not disappeared from the landscape. As of 2006 there were 254,240 acres of agricultural land in Alameda County (see Figure 6 below), although 3,788 acres had been converted to non-agricultural use between 2004 and 2006. According to the 2002 USDA Census of Agriculture there were a total of 424 farms[12] (including pasture, cropland and other uses), and the average farm size was 514 acres (USDA 2002). While farm size had increased by 25.6% between 1974 and 1997, and the number of farms had remained stable (Cozad et al. 2002), these trends seem to have been shifting more recently. By 2007, the Census of Agriculture counted

[12] The USDA defines a farm as "any place from which $1,000 or more of agricultural products (crops and livestock) were sold or normally would have been sold" under normal conditions in a given year. (USDA Economic Research Service website, http://www.ers.usda.gov/data/farmincome/Sizedefinition.htm. Accessed December 19, 2009.)

525 farms with an average farm size of 390 acres (USDA 2007). This represented a 24 percent increase in the number of farms, and a 24 percent decrease in average farm size as compared with the prior agricultural census.

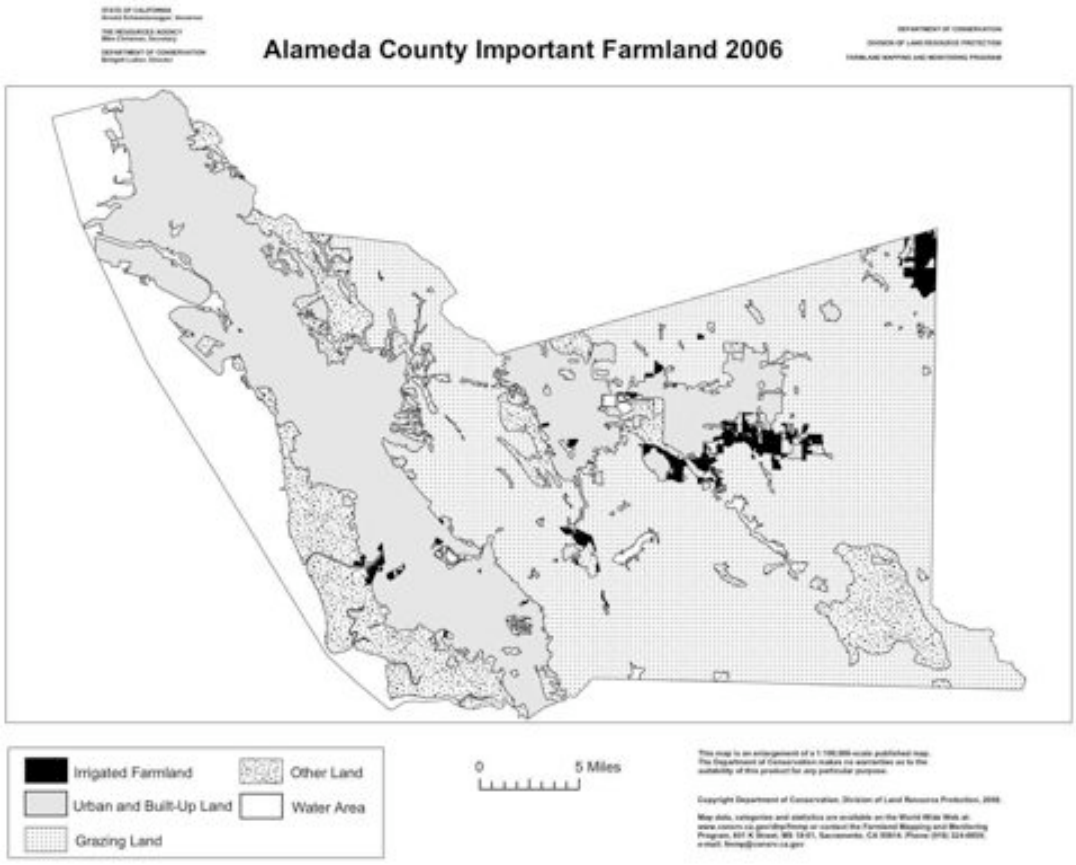

Figure 6. Map used with permission from California Department of Conservation Farmland Mapping and Monitoring Program.

Alameda County's agricultural industry is currently dominated by products that are not for direct human consumption. As of 2007, the total economic value of all agricultural products in the county was $42.4 million. This included nursery products, cut flowers, field crops, fruit and nut crops, livestock, poultry and apiary products. In 2007 ornamental nursery production totaled $20.39 million, comprising over 50 percent of the

market value. Range/pastureland totaled $3.2 million, and the market value of wine grapes totaled $6.45 million. These three commodities totaled 70 percent of the agricultural products in the county's agricultural economy in 2007 (Bray 2008). Conversely, all other fruits, nuts, and vegetables reported in county agricultural statistics amounted to roughly 1.5 percent of the economic value (ibid). Thus, Alameda County commercial agriculture is currently characterized by production of nursery, livestock (mainly cattle), and wine grapes, with a smaller presence of commercial produce operations. These data do not include many of the urban agriculture sites identified in this study, due to the way that agricultural operations are defined and measured in the agricultural census (i.e., commercial operations grossing over $1000 annually).

Agrifood System Dynamics

Food Access

Although Alameda County food production has greatly declined since its heyday in the late 19th century, the recent increase in farm numbers and specialty marketing suggests that local food production and consumption could increase in coming years. However, as suggested by Cozad et al., this may not be experienced equally by all county residents, (2002). For example, while wealthier areas have seen an increase in specialty stores, while less-wealthy areas of the county lack access to basic foods (ibid.) Moreover, links between race/ethnicity and poverty have extended to food insecurity and diet-related health issues in Alameda County (Beyers et al. 2008, 97-103), as discussed below.

Findings from one study conducted in the late 1990s indicated that 74 percent of West Oakland residents lived in poverty and that almost one-fourth of the entire West Oakland population had sought emergency food at soup kitchens, food pantries, shelters (Farfan-Ramirez and Kelly n.d.; Farfan-Ramirez n.d.). The study also reported high numbers of iron-deficiency anemia and lead poisoning cases, the latter of which particularly affects children who are undernourished (ibid). Seventy-four percent of West Oakland residents were African-American at that time, yet the Southeast Asian population had increased 286 percent in the ten years prior to the study (ibid). This demographic shift can be attributed to the wave of post-Vietnam immigration, which saw an "unprecedented exodus" of refugees from Cambodia, Laos, and Vietnam (Asian Community Mental Health Services (b) n.d.). More broadly, Asians and Pacific Islanders have had the highest increase in population in Alameda County as a whole in recent years (Asian Community Mental Health Services (a) n.d.), and many have experienced poverty, social isolation (Asian Community Mental Health Services (b) n.d.), which suggests that this group is likely among the "food insecure" in the county today.

A separate study conducted in East Oakland and South Hayward identified nine major barriers to buying nutritious foods among low-income study participants, the majority of whom were African-American and/or Hispanic women. These were: cost; poor quality produce/meat; abundant fast food restaurants; in-store marketing; lack of time; lack of access; attitudes toward public assistance; lack of nutrition knowledge; and family/social environment (Tsai 2003). More recently, a countywide health assessment summarized health inequalities as follows:

> In Alameda County, access to proven health protective resources like clean air, *healthy food*, and recreational space, as well as opportunities for high quality education, living wage employment, and decent housing, is *highly dependent on the neighborhood in which one lives* (emphasis added) (Beyers et al. 2008).

Despite the obvious connections between food access and social class suggested by these studies, some low-income communities of color have been found to have more ready access to fresh foods. For example, one recent study found that select low-income Latino neighborhoods in East Oakland had numerous small grocers and street vendors that sold fresh produce (Short et al. 2007). Clearly, the complex relationships between poverty, race, food, and culture have yet to be fully understood.

Retail Food Outlets and Social Forces

One factor that has been found to contribute to food insecurity among low-income populations is a lack of nearby retail establishments stocking healthy foods (Jetter and Cassady 2005; Agricultural Issues Center 2005; Hendrickson et al. 2006; Morton et al. 2008; Short et al. 2007). Data on various types of food outlets suggest that these, too, were distributed unevenly in Alameda County. For instance, the total number of food retailers (grocery, supermarkets, convenience stores and specialty food stores) in the county *increased* by four percent between 1997 and 2002 (U.S. Census Bureau 1997, 2002). During this time, specialty and organic food products were available in wealthier sections of the county and in predominantly White communities (Alkon 2008; Cozad et al. 2002). Meanwhile, some low-income areas in the county have lacked basic grocery stores for decades (Beyers et al. 2008; Cozad et al. 2002), a void which has often been

filled by liquor stores stocking few, if any, fresh products (Alkon 2008; Beyers et al. 2008; Jetter and Cassady 2005).

Clearly, the location of retail outlets has impacted food access in the county. However, at a systemic level, deeper historical trends have created some of the food system inequities described here. They have also motivated efforts to deal with them. For example, the lack of food outlets in certain areas has been traced to racial discrimination, including residential redlining and segregation beginning in the 1930s (Beyers et al. 2008; Fuller n.d.). Moreover, decades of food insecurity in districts such as West Oakland have been well documented (Fuller n.d.; *People's Grocery website* 2009; McClintock and Cooper 2009; HOPE Collaborative 2009; Alkon 2008), and community-led efforts to deal with food insecurity date as far back as the 1960s when the Black Panther Party began a free breakfast program for African-American children in Oakland (Fuller n.d.; Heynen 2009). Meanwhile, other portions of the county have seen the creation of California Cuisine, with its emphasis on farm-fresh products, particularly through the Chez Panisse restaurant in Berkeley. Guthman (2003) has described these developments as the result of an "unlikely connection between early [Bay Area, White] culinary history, the 1960s counter-culture and the *nouveau riche* of the 1980s." The side-by-side existence of the BPP's breakfast program and California Cuisine exemplifies the dichotomous agrifood system trends that have long been present in Alameda County.

Agrifood Systems Initiatives in Alameda County

In response to some of the issues described above, local government agencies and community groups have worked to protect farmland, increase urban sustainability, and to address food insecurity through community organizing and urban agriculture. Due to the number of agriculture and food-related initiatives in the Bay Area, the section below summarizes only a selection of Alameda County initiatives, although it is noted that there are many other organizations working on similar issues in the county and the Bay Area more widely.

Agricultural and Food Systems Initiatives

Agricultural initiatives in Alameda County have included efforts to protect farmland from non-farm development; to link urban consumers with farm products; to promote education about agriculture; and to address food and health inequities through various projects. In eastern portions of the County, for example, a committee of agriculturalists, community members, and business and government representatives released a regional working landscape plan in 2005, called "Vision 2010." The plan sought to identify new ways to protect and enhance the region's agriculture and open space (*Tri-Valley Business Council website* 2008). Meanwhile, another non-profit organization, Sustainable Agriculture Education (SAGE), has led the development of an agricultural park in Sunol, which gives opportunities to individuals and groups lease small parcels of public land for food production (*Sustainable Agriculture Education website* 2009).

Additional non-profit organizations are involved in various direct marketing programs aimed at increasing support for small-scale farmers. The Ecology Center in Berkeley coordinates many of the local farmers' markets and farm stands, the latter of which sell low-cost produce in low-income neighborhoods (*Ecology Center website* 2009; Alkon 2008). Mo' Better Foods operates farmers' market in West Oakland which focuses particularly on supporting Black farmers (*Mo' Better Food website* 2009; Alkon 2008); the Mandela Foods Cooperative has initiated several efforts to bring fresh foods and local grocery stores to West Oakland neighborhoods (*Mandela Foods Cooperative website* 2009); and the non-profit organization Peoples' Grocery has focused on food access through a mobile market and long-range planning for a cooperative grocery store in West Oakland neighborhood (*People's Grocery website* 2009).

Efforts to integrate issues of urban sustainability, food access, support for local agricultural production, and public health have also emerged recently in Alameda County. For instance, the Oakland Mayor's Office of Sustainability commissioned an Oakland food system assessment intended to assist in the development of a local food policy and plan for 30 percent local food production in the area (Unger and Wooten 2006). An umbrella organization, Health for Oakland's People and Environment (HOPE) was funded by the W.K. Kellogg Foundation to address health and environmental concerns related to food and the built environment (*HOPE Collaborative website* 2009). Smaller organizations such as Oakland Food Connection and the Ecology Center's Farm Fresh Choice program in Berkeley also tie together issues of food, nutrition, and social inequities through locally based activities and youth education in low-income

communities of color (*Oakland Food Connection website* 2009; *Ecology Center website* 2009). These examples illustrate the types of efforts aimed at creating change in Alameda County's agrifood system that have evolved in recent years.

Alameda County Urban Agriculture Efforts

Within the context of the AFIs discussed above, Alameda County has also been home to a diversity of urban garden projects since the 1980s. Examples in Berkeley include the Strong Roots Youth and Intergenerational Garden project, which began in the mid-1980s with goals of engaging youth in constructive activities with older community members (Shabaka 2008). School garden programs began at King and Willard Middle Schools in 1994, and the Berkeley Community Gardening Collaborative was organized the following year. Several urban food security gardens also began during the 1990s in Berkeley. (See *Berkeley Youth Alternatives website* 2008; Ermachild-Chavis 1997; Feenstra et al. 1999.)

In Oakland, the city's Community Garden program officially began in the early 1990s, but includes gardens that date to the 1970s (*City of Oakland Community Garden website* 2009). Several organizations also began working on food and social issues through urban agriculture in the 2000s. Most of these efforts have been concentrated in West Oakland, although there are increasing numbers of youth educational gardens in East Oakland. The garden projects mentioned here are just a few of the recent urban agriculture activities operating in Alameda County. The scope of these activities was explored through this study and will be examined in subsequent chapters of this dissertation. The following

section provides an overview of UC DANR /Cooperative Extension program engagement with urban agriculture, with a focus on Alameda County.

UC DANR and Cooperative Extension Program Efforts

University of California extension programs and staff members have spearheaded several agrifood initiatives in Alameda County. Between 1995 and 2000, collaborative research and extension projects proposed to link economic and social research about urban food production with education/community outreach about gardening techniques, marketing, health, and nutrition. Among the extension programs involved in these efforts were Alameda County Cooperative Extension, the Small Farm Program, UC Sustainable Agriculture Research and Education Program (SAREP), and the Statewide Extension Food Stamp Program. . Some of the proposals (which were submitted to various UC and DANR units for funding) also included the participation of local community organizations (Farfan-Ramirez 2009).

UCCE Alameda County also began a pilot community supported agriculture project with UC Berkeley's Environmental Science and Policy Management program (ESPM). The goal of this project was to feed 30 low-income Berkeley families, while assessing the feasibility of this model as a way to work with urban food insecurity (Farfan-Ramirez 2009). In 2002, UCCE collaborated with SAREP conducted a countywide foodshed assessment (Cozad et al. 2002), which provided an overview of the regional agricultural and food system. Subsequently, in 2005, a Food Systems Analyst position was created at

UC Cooperative Extension in Alameda County (Khanna 2008). UCCE Alameda also helped form the HOPE Collaborative discussed above.

Other UCCE agrifood system statewide programs include the Master Gardener Program, nutrition education, and 4H (*Alameda County Cooperative Extension website* 2008). Beyond Alameda County, the Los Angeles County Master Gardener Program has also been incorporated into the Common Ground Garden Program a program, which has specifically targeted low-income city residents and traditionally underrepresented families since 1978 (*UC Common Ground Garden Program website* 2009). In Ventura County, the Cooperative Extension county director has also focused on expanding knowledge about "victory gardening" for food security through research, community outreach, and online venues (Hyden-Smith 2009). Thus, while urban agriculture extension programs are limited to select regions in California, it is clear that there has been a strong interest in urban agriculture and agrifood systems among a small group of UC DANR/CE staff for nearly over thirty years.

The UC Berkeley Gill Tract

Somewhat apart from the efforts of UC DANR/CE staff members, there has also been considerable public interest in an agricultural research facility owned by the University of California and situated in an urban center. UC Berkeley is one of the three land-grant campuses in California, and the only one in the Bay Area. One of UC Berkeley's agricultural research sites is the Gill Tract, a 14-acre parcel of farmland located near Downtown Berkeley that has been used for agricultural research and teaching since the

1930s (*Gill Tract/Village Creek Farm and Gardens Project website* 2009; McClintock 2009). This land was the site for the community supported agriculture project begun by UCCE and UC Berkeley ESPM, which was noted above.

The Gill Tract has been slated for development into university housing for several years. In 1997, a coalition of community organizations and individual university faculty members proposed that the UC Berkeley create a research, education, extension center on sustainable urban agriculture and food systems, to be named the "Bay Area Center for Urban Agriculture" (Bay Area Coalition for Urban Agriculture (BACUA) 1997) (BACUA 2007). The BACUA proposal was not accepted, and the current plans to develop the tract for university housing have been met with additional community resistance (*Gill Tract/Village Creek Farm and Gardens Project website* 2009; Brenneman 2009). This tension between community members and the university/land owner over the use of urban land for food production is demonstrative of the challenges that land tenure has posed to urban agriculture in the study area.

Chapter Conclusion

As mentioned at the beginning of this chapter, Alameda County was chosen as a study site because of its agricultural and demographic diversity; a certain level of institutional interest in urban agriculture; and a dynamic history of community-based organizing around agrifood system issues. The community-, government-, and university initiatives described here demonstrate the multi-tiered efforts to create agrifood system change in

Alameda County. Still, within the university, a state- or system-wide urban agriculture extension program has been elusive.

There are also many urban agriculture operations in the county today. These operations formed a part of the study population for this research and their characteristics will be described in subsequent chapters of this dissertation. The following chapter describes the methods used in this study.

CHAPTER FIVE

Methods

Study Design and Data Collection Protocols

Multiple methods were used to gain a more holistic understanding of urban agriculture in Alameda County, and how it was perceived within Cooperative Extension and the Small Farm Program. The methodology is described in four phases. Phase One describes project planning. This is included due to the importance of process in the action research approach. Phase Two describes intensive interviews—identification of the study population, development of the survey instrument, key informant interviews, analysis of interview data, and mapping. Phase Three describes the interventions used for participant observation throughout the course of the study. Phase Four describes analysis methods used.

Phase One: Planning

Introducing Urban Agriculture to the Cooperative Extension Dialogue. The decision to conduct this research through the Small Farm Program was motivated by my own desire to provide agricultural extension assistance to urban farmers who had the potential to contribute to the food system in Alameda County. In 2006, while employed with SFP, I spoke with the program director about the development of an urban agriculture project within either the Program or the related Small Farm Workgroup.[15] He suggested that I present the idea to the Workgroup at the statewide meeting that spring. I subsequently

[15] The Small Farm Workgroup consists primarily of UC DANR staff members who collaborate on research, outreach, and trainings related to small-scale farms and ranches in California.

presented a brief proposal that included an overview of urban agriculture, its benefits and challenges, and possible short-, medium- and long-term activities in which the Program (or Workgroup) could engage to address urban agriculture through its existing structure.

Organizing an Urban Agriculture Tour for Extension Staff. While some Workgroup members were skeptical about the idea of working on urban agriculture through the Small Farm Workgroup, others were interested, and suggested that we conduct a tour and assessment of urban agriculture issues before taking further steps. During the fall of 2006 Workgroup funds were made available to take a tour of urban sites in the San Francisco Bay Area, which I took responsibility for organizing. (See itinerary and report in appendices.)

My own vision for the tour was to educate Workgroup members about various agricultural production operations in cities, but I began by conducting an email survey to assess topics of interest to the group. Based these responses, the itinerary was expanded to include marketing and consumer education. The one-day tour included visits to two urban farms, one independent produce market, and a luncheon meeting with farmers' market managers in the East Bay, as well as the Center for Urban Education about Sustainable Agriculture in San Francisco. Thirteen workgroup members and affiliates attended.

After the tour, I conducted another informal email survey of participants, which yielded only 3 responses, but provided interesting comments. (See report in appendices.) Shortly

thereafter, an urban agriculture project was included as part of a one-year USDA grant proposal submitted by the SFP. This grant funded the field research that I conducted in Alameda County, which formed phase two of this study.

Phase Two: Intensive Interviews

This section details the methods employed to design and conduct key informant interviews, including when and how stakeholder input was included in the process, as well as follow-up communication with key informants.

Study Population. The study population consisted of urban agricultural operations that: a) made their edible products available to community members and the wider public by sales/no-cost distribution; b) provided land to urban residents for food production; and/or c) consisted of household members producing a significant part of their own food needs at their place of residence (i.e., urban homesteads, see below).

*The urban homesteads were included in the study population because they provided a unique perspective on food self-provisioning within the urban setting. The distinction between these and individual backyard gardens related to the diversity of items produced, and the extent of the households' reliance upon these products for daily food consumption throughout the year. Homesteaders typically produced a diversity of animal products, in addition to fruits and vegetables, and aimed to prepare most of the meals that they cooked using products they had raised themselves. This included fresh products, as

well as foods that household members had preserved during periods of seasonal abundance.

Exclusions. Apart from the urban homesteads, individual backyard gardens were not included in the study. School gardens were also excluded from this study, though their significance and reputation within the study area are noted, (i.e., The Edible Schoolyard in Berkeley is a model for school garden programs nation-wide). When defining the study population, it was assumed that school garden programs focused mainly on nutrition and science education, and that school gardens were not accessible to the general public.

Nurseries, vineyards, and olive operations were also excluded from the study population because of the focus on fresh products and small-scale operations, which are generally underserved by mainstream agricultural programs. Specifically, nursery products are not directly edible, and both wine and "artisanal" olive oil require processing and have considerable industry support. Moreover, an underlying focus of this study was healthful foods in the context of community food security, and alcohol does not fit this type of criterion. Cattle producers, whose main sales destinations were livestock auctions in other counties, were also excluded from the study population, as were all other operations that produced non-edible products (such as hay and other animal fodder).

Limitation of excluding school gardens. Over the course of the study the assumption about the role of school gardens in the wider food system proved to be inaccurate for two reasons. First, several of the urban agriculture operations that <u>were</u> included in the

population used school grounds for gardening space and/or greenhouse production. Thus, the schools may have hosted gardens that were operated by outside organizations. Second, afterschool farm stands were being pilot tested at several schools in the county during the time of the field research. Farm stands opened for few hours in the mid-afternoon, and sold some of the produce that had been grown as part of the school garden curriculum. School gardens were therefore more integrated into other urban agriculture operations than previously assumed. According to the Alameda County School Garden Directory, there were 184 school gardens in 2006 (Watkins et al. 2006). Given the number of school gardens, their potential contribution to the urban food system remains an opportunity for future research, but was beyond the scope of this study.

Identification of Urban Agriculture Operations. The unit of analysis was the garden, farm, or ranch, which are referred to generally throughout this dissertation as "operations." Key informants representing the operations in this study were urban and urban edge gardeners, small-scale farmers, and small-scale ranchers who grew, raised and harvested one or more of the following edible products:

- Fresh produce (i.e., fruits and vegetables)
- Nuts
- Honey
- Culinary mushrooms
- Small livestock, including chickens (for eggs and meat), goats, sheep, hogs, rabbits and other meat birds. (These livestock species can be legally slaughtered and processed, to a limited extent, without the use of a USDA- certified slaughtering facility. Since there was no such facility in the county, this limited the amount of livestock that could be raised and sold through direct markets.) [16]

[16] At the beginning of the study I had focused on fresh produce, nuts, and honey, but *not* livestock operations. After about half of the interviews had been conducted, dialogue with local stakeholders brought me to realize that the omission of livestock products overlooked foods that are important in several of the cultures in Alameda County, (e.g., African American, Mexican cultures). Livestock operators were thus

Due to the variety of production types present in the county, multiple methods were used to identify key informants, as described next.

a) *Gardens*. Urban gardens were identified through the Internet and the snowball sampling methodology. Internet searches were conducted for each of the 14 cities and six unincorporated areas in the county using the search terms "urban agriculture," "urban garden," "community garden," and "urban farm." The resulting list was sent to local individuals and agencies engaged with urban agriculture for review. Agencies contacted included the Ecology Center in Berkeley, UCCE Alameda, the City of Oakland Office of Parks and Recreation, as well as several urban agriculture practitioners in the study area. Additional names of public gardens, as well as private individuals with extensive urban agriculture operations (i.e., not small or hobby backyard gardens), were added based on this feedback until no new operations were identified. Over the course of the study several additional operations were added to this list as key informants suggested other urban producers that had not been previously identified.

b) Farm and Ranch Operations. Accessing useable information about farm and ranch operators in Alameda County was a somewhat labor-intensive process. Some farm- and ranch-scale (i.e., larger than one acre) operations were identified using official pesticide permit- and organic certification registers, as well as certified farmers market lists. Others were identified through networks and producer organizations.

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added to the study population according to the same criteria used to identify the population of produce/nut/apiary operators.

The Certified Farmers Market producers list was obtained from the CDFA, and provided useable information about operators who sold products at farmers' markets in the county. (Only producers whose production sites were located in Alameda County were included in the study population.) Lists of certified organic producers and pesticide application permits were readily obtained from the Alameda County Agricultural Commissioner. While the certified organic list was straightforward, the pesticide permit list included all individuals and businesses in the county (agricultural as well as non-agricultural entities) that were registered to apply pesticides. For this reason, it was not always obvious whether the permit holders were agricultural operations. Moreover, some permit numbers were issued for crop types or varieties, resulting in many permits belonging to a single enterprise. This necessitated database sorting in order to identify individual fruit, vegetable and nut operations.

Identifying livestock producers was more complicated. No official list of livestock producers was maintained by state or county agencies at the time of the study. Thus, numerous livestock producer organizations were contacted in an effort to identify producers who fit the study population characteristics. (A list of the organizations contacted is found in the appendices.) This activity yielded few names. In some cases (e.g., cattle) organizations were not willing to share their member lists, but for most livestock types, the respective producer organizations had no listing of producers in Alameda County.

Due to the nature of the agricultural producer lists, sorting and preliminary screening (a short phone questionnaire) were used to identify operations that fit the study population described above. Each producer was contacted by telephone, the screening survey was administered, and interviews were scheduled when applicable. Some of the livestock organization representatives offered to contact members whom they thought might be willing to participate in the research, but only one producer was identified through this process. (See Appendix for questionnaire.)

Development of Interview Guide. The interview guide was developed in consultation with several of the eventual key informants, as well as staff members of the Alameda County Cooperative Extension; Small Farm Program advisors; a staff member from the Bay Area chapter of Community Alliance with Family Farmers; and other local community organizations. This stakeholder input was gathered between April and July 2007 via email, phone, and in-person consultations.

The questionnaire consisted of open- and close-ended questions. Some questions were identical for all key informants, while others were worded slightly differently depending on the type of operation. For example, questions about production management used wording pertaining to the "principal operator" for farm-scale operations, while questions about management of urban gardens used wording pertaining to the "director" or "garden coordinator," as appropriate.

The questionnaire was pilot tested with several urban and urban-edge operators outside of the study area, and adjusted according to feedback received. A description of the research and a sample of survey questions were submitted to the University of California Institutional Review Board (IRB) for approval. (See appendices for questionnaires.)

Conducting Key Informant Interviews. Sixty-five key informant interviews were conducted between August 2007 and July 2008. Interviews were conducted in person at garden/farm/ranch site when possible, and two of the interviews were conducted by phone. As a result of the information gathered through the interviews, 13 of the interviews were excluded from the final analysis because it became clear that these operations did not fit the study population. Thus, fifty-two operations were included in the final analysis.

Several of the operations had multiple key informants who were interviewed either together (at the same interview), or separately as time permitted for each individual. In some cases a single operation had two coordinators/managers, each with distinct roles and limited time availability, thus two separate interviews were conducted. In other cases an overall coordinator oversaw multiple community gardens, but each garden also had its own coordinating system. In these cases both the coordinator and gardeners from each site were interviewed during separate interview sessions. Similarly, one garden consisted of gardeners who did not speak English. In this case, both the English-speaking coordinator and a group of gardeners were interviewed, the latter of which occurred with the help of a translator hired from within the community.

Interviews were recorded using a digital recorder (except for the phone interviews), with key informant permission. At each interview, a brochure about the UC Small Farm Program, the most recent SFP newsletter, and an informational flyer about an upcoming small farm conference were distributed in an effort to inform participants about various informational resources and educational opportunities available to them.

Digital photographs were taken only of the production/garden operation, and not of key informants themselves in order to maintain confidentiality, and because the unit of analysis was the operation, not the individual key informant. The location of each site (intersections and/or street address and zip code) was noted and entered into a spreadsheet for use in GIS mapping (described below). Brief field notes were taken following the interview. The interviews and field notes were transcribed and questionnaire responses were coded for analysis.

Interview Follow-up. In April 2008, after the majority of the interviews had been conducted, a letter was mailed to key informants, updating them on the status of the data collection. This type of on-going communication was considered an important part of the action research approach because it kept research participants involved, with the study process as it evolved.

In June 2008, the computer containing interview transcripts and contact lists was stolen. Although this theft posed a potential breach of key informant privacy, most of the contact information had been obtained through public sources, so the threat to informants was

minimal. Moreover, the interview questions pertained only to the operations, not the key informants themselves, thus no additional personal information had been collected or stored on the computer. Fortunately, files had been regularly backed-up on a secure server at the Small Farm Program, and a third external hard drive, so recovery of the data was relatively straight-forward (i.e., transfer of files from the server). A second letter was sent to key informants explaining this situation.

Phase Three: Participant Observation and "Action" Interventions

Again, one of the goals of this study was to assess the possibility and utility of expanding Cooperative Extension-based urban agriculture programming. Interventions were used to initiate dialogue about urban agriculture within UC DANR programs, and to assess the wider public interest in obtaining information about urban agriculture from the Small Farm Program. These actions allowed for participant observation from within the UC DANR system. Interventions included: presentations given to Small Farm Program staff members and the Small Farm Workgroup; the Small Farm Workgroup urban agriculture tour (described in footnote above); and short articles about this study and urban agriculture more generally that were published in the Small Farm Program newsletter and posted on the SFP website.

As mentioned above, twelve-page article with preliminary findings from the study was written in late 2008. This report was intended to provide timely information to key informants and Cooperative Extension staff without compromising the integrity of the

final analysis. The article was sent to three key informants, the five Small Farm Program Advisors, and three additional Cooperative Extension/DANR staff members for review. The completed article was mailed to research participants, posted on the SFP website, and distributed at a local urban agriculture conference hosted by a community-based organization.

Phase Four: Analysis and Mapping

Data analysis followed standard social scientific procedures appropriate for each type of data collection. Key informant interview responses were coded for analysis using SPSS. Qualitative analysis of participant observation was accomplished by reviewing field notes made over the course of the project. Data that related demographic information to site location within the county were obtained the US Census American FactFinder website (www.census.gov). A consultant was hired to create maps using ArcGIS software.[17] These maps were used for geographic and demographic analysis.

The findings of these research and observation processes are presented in the following four chapters.

[17] Data sources for the GIS map layers are found in the appendices.

CHAPTER SIX

Characteristics and Roles of Urban Agriculture Operations

The goal of the farm is to grow and sell vegetables…make a little money…make a living at it.

–Urban edge farmer

It surely does [have an impact on the local food system.] People remember that Black people grow food too. People of color grow food too. And the information is still here.

–Organization director

Our goals are to be able make a living and keep everybody working. Also to produce good quality organic vegetables.

–Urban edge farmer

"In third world countries where people really need to derive value every possible way that they can because of poverty, this type of thing really makes sense. And that's why it makes sense here, where we are, in the inner city. We are actually in third world conditions. Our community really doesn't have a huge or the necessary input of value coming from collective society.

-Organization director

This chapter presents findings about the characteristics of the 52 urban and urban edge agriculture operations studied using descriptive statistics. The term "operation" is used to encompass the diversity of urban and urban edge agriculture types existing in Alameda County; that is, urban gardens and farms, as well as urban edge farms and ranches. These operations were the unit of analysis except where noted.

Urban Agriculture Operations throughout the County

Number of Sites and Local Entities Involved

As shown in Figure 7, operations were identified in 10 of the cities/incorporated places of the county. In total, there were 59 production sites, operated by the key informants in the study population. (The number of farm/garden production *sites* was greater than the number of *operations* because some operators managed multiple production sites.)

Forty-two of the sites identified in the study were located on land owned by either city or regional governmental agencies ("Public Production Sites"). This included public gardens, as well as farms operated on land that was leased from either the East Bay Regional Parks District or the San Francisco Public Utilities Commission. Thirteen of the production sites were operated by individuals or families on privately owned land ("Private Production Sites"). Four sites ("Other Sites") were not under production at the time of the study. Two of these were public operations that were in planning stages, and two were private operations that had recently ceased production after generations of farming at that site.

Figure 7 also lists the main entities involved with the urban agriculture operations studied. These entities were involved through land ownership, supply of irrigation infrastructure and water, and/or management and operation of production sites throughout the county.

Alameda County Cities and Unincorporated Places with Urban Agriculture Sites

City/Place	Population	Private Production Sites	Public Production Sites	Other Sites*	Total Production Sites	Residents per site	Residents per Public Site	Main Entities Involved
Oakland (a)	397,067	3	17	1	**21**	18,908	23,357	City of Oakland/City Office of Parks and Rec.; non/ not-for profit organizations; private commercial operators; private landowners; city residents/gardeners.
Berkeley (a)	101,555	2	13	1	**16**	6,347	7,812	Non-profit orgs; City of Berkeley; University of California; BART; private commercial operators; private landowners;city residents/gardeners.
Livermore (a)	79,438	4	1	0	**5**	15,888	79,438	Livermore Area Recreation and Park District; private commercial operators; city residents/gardeners.
Alameda (a)	70,699	0	3	1	**4**	17,675	23,566	Non-profit org.; City of Alameda/Housing Authority; US Dept. of Housing and Urban Development; city residents/gardeners.
Pleasanton (a)	66,397	3	1	0	**4**	16,599	66,397	City of Pleasanton Department of Parks and Community Services; private commercial operators; city residents/gardeners.
Emeryville (b)	9,353	0	2	0	**2**	4,677	4,677	Non-profit orgs; City of Emeryville; city residents/gardeners.
Fremont (a)	201,691	1	1	0	**2**	100,846	201,691	Private, commercial operators; Regional Park District.
Union City (a)	69,477	0	1	1	**2**	34,739	69,477	City of Union City/ City Department of Leisure Services; private commercial operators; city residents/gardeners.
Hayward (a)	140,606	0	2	0	**2**	70,303	70,303	Non-profit org; Hayward Area Recreation and Park District; city residents/gardeners.
Sunol (b)	1,344	0	1	0	**1**	1,344	1,344	San Francisco Public Utilities Commission; Non profit orgs; Private commercial operators.
TOTAL	1,137,627	13	42	4	**59**	19,282	27,086	

**Four sites were planned but not yet operating (2) or recently ceased operation (2) at the time of the study.*

Source for population data: a) Quickfacts.census.gov (2006 estimates based on 2000 Census) and b) City-data.com (2007). Accessed May 29, 2009.

Figure 7.

The third type of data shown in Figure 7 relates to the number of sites per resident in the city. Population for each city is listed in this table, and this was used to calculate the number of city residents who would have effectively "shared" each site. Even at this general level of analysis, one can see that the proportion of sites to population varied widely between cities. For instance, there were 1,344 residents in Sunol, which had one site, and 201,691 residents in Fremont, which also had one site.

The 10 cities and unincorporated areas in the county that are omitted from Figure 7 did not have public or commercial private sites. These are shown in Figure 8, which also shows the population of each city. As shown, several cities with sizeable populations had zero urban agriculture sites. (The uneven distribution of urban agriculture sites in the county will be explored further in chapter 7.)

Alameda County Cities and Unincorporated Places *without* Urban Agriculture Sites*

City	Population
Albany (b)	15,974
Ashland (b)	20,986
Castro Valley (b)	57,825
Cherryland (b)	13,965
Dublin (a)	41,840
Fairview (b)	9,558
Newark (a)	41,891
Piedmont (b)	10,479
San Leandro (a)	78,030
San Lorenzo (b)	22,102
TOTAL	312,650
*At time of study.	

Source for population data:
a) Quickfacts.census.gov (2006 estimates based on 2000 Census); and b) City-data.com (2007). Acessed May 29, 2009.

Figure 8.

Land Access

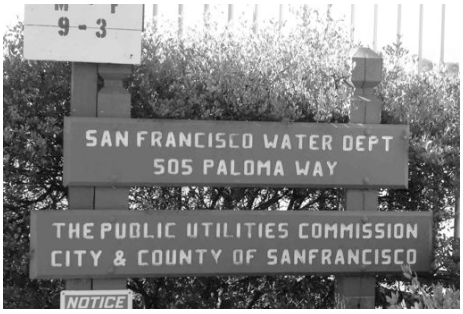
At the time of this study, urban agriculture operators accessed land through one or more of the following arrangements:

- Ownership (by individual operators or organizations);
- Lease/use agreement with individual landowners/landlords;
- Arrangement with, or part of, University of California (Berkeley);
- Arrangement with elementary school;
- Use for nominal fee from utility company (PG&E);
- Use for nominal fee from regional transit authority (BART-Bay Area Transit Rail);
- City-owned land/park (when part of community garden programs);
- Leased directly from East Bay Regional Parks District
- Leased indirectly from San Francisco Public Utilities Commission as part of an agricultural park project (*See Box 2, below*);
- Land owned by the North Oakland Land Trust; and
- Use of land owned by non-profit organizations not involved with managing garden at that site.

Box 2. Agricultural Parks

Three operations in this study leased land through an agricultural park project in Sunol. The purpose of this project is to preserve land for agriculture and make the land available for lease by area farmers. The Sunol Agricultural Park is administered through the non-profit organization Sustainable Agriculture Education (SAGE), which holds a master lease on 18 acres of land owned by SFPUC. SAGE subleases smaller parcels to individual operators and community groups. At the time of this study, the fee structure was $1,600 per acre for land, and a flat rate of $600/A for water. In addition to water, lease agreements in 2008 included land use, SAGE programming (a general farm manger salary at 6-8 hrs per week), liability insurance, education, cover cropping, and occasional hiring of a weeding crew. Land rent paid by farmers was used to provide the services mentioned.

Box 2.



Sign outside Sunol Water Temple.

Field of vegetable beds at Sunol Agricultural Park.

Production Arrangement

Three general production arrangements were identified from key informant responses about the way that operations were managed. These were: community sites with individual plots; family or household operations; and farms or gardens operated by community organizations, as described below.

a. Community gardens/orchards with plots or areas assigned to individuals

These are perhaps the most familiar form of a community garden in which members are assigned plots of public land that they cultivate individually or with family

members. At some community gardens in this study gardeners worked together on a large area, or with fluid boundaries between areas, rather than having defined plot assignments. Most were part of an organized network supported (at least in part) by a city agency. In some cases this occurred in conjunction with management by a non-profit organization. However, a few of the community gardens were independently managed and operated by local residents.

Community garden plots in Berkeley.

b. Family or household operations

These were operations managed and operated by a family or household at one or more sites. Some were commercial operations, while others produced food mainly for household consumption. Some of the operations had employees and/or volunteers, and some did not. The key characteristic of these operations was that families or households, rather than city agencies or non-profit organizations, organized, managed and operated all aspects of production.

Family-managed operation in Union City.

c. Farms or gardens operated by community based organizations

These were operations directed, managed and operated by community-based organizations (CBOs). Field (i.e., garden or farm) work was accomplished by a mix of organization employees, (adult and youth), and occasional and/or regular volunteers. Some of the organizations managed up to five production sites within their respective city.

Raised vegetable beds at organization site.

Of the fifty-two operations studied, twenty-seven were community gardens/orchards with plots managed by individuals or families; eighteen were private operations managed by

families or households; and seven were organization-run farms or gardens, as shown in Figure 9.

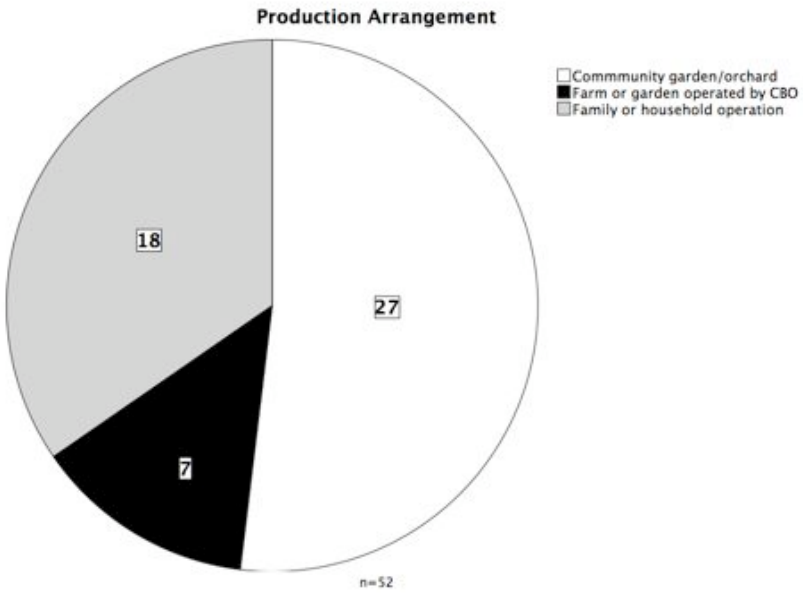


Figure 9.* See Box 3 below for note on unit of analysis.

Box 3. Note on Unit of Analysis in Figure 9.

The chart above suggests that the majority of urban agriculture operations were community gardens. However, this is somewhat misleading since individual community garden sites were treated as one operation, while organizations with multiple sites were treated as one operation (rather than several). The reasons for this are as follows.

- In Oakland and Berkeley, multiple community garden sites were part a citywide program that was managed by either a non-profit organization and/or city departments. The gardens thus shared certain resources, including one paid coordinator, but each garden had its own committee consisting of one or more of the participating gardeners. These committees coordinated activities such as spring clean-ups, harvest festivals, maintenance of compost piles, and communication with the paid coordinator. The resulting autonomy, along with differences in inter-garden dynamics, justified treating them as individual operations.

- Two sites were owned by regional governmental bodies and leased to urban agriculture operators. The East Bay Regional Parks District leased land directly to a farming family. The San Francisco Public Utilities Commission leased land to a non-profit organization, which, in turn, subleased parcels to several individual farmers and urban agriculture organizations. (See Box 2, *Agricultural Parks*.) Each of these operations (not the land on which they were located) was treated as an operation.

- In a few cases single organizations managed multiple production sites as a part of their urban agriculture programs. In these cases, the same individual or group managed all production sites. Therefore, the organizations (not the sites) were treated as one operation.

Figure 9 thus refers to the number of distinct production operations.

Box 3.

Business Type

Urban agriculture operations in the county were part of governmental, commercial and non-profit sectors. Of the 52 operations in the study population, 19 were operated by not-for-profit or non-profit 501(c)(3) organizations; 11 of the operations were part of a city program (e.g., parks and recreation department); 15 were for-profit businesses. Additionally, seven operations did not have a business or official organizational status. These operations consisted of individuals and families who had personal relationships prior to beginning their urban agriculture activities. As with the production arrangements described above, some operations received financial or in-kind support (e.g., use of land or water) from both city agencies and non-profit organizations, but even in these cases, the urban agriculture operations were coordinated by one main entity. The distribution of each type is displayed in Figure 10.

Sector of Coordinating/Managing Entity

	Frequency	Percent
Non-profit/not for profit	19	36.5
Government (city agency)	11	21.2
For profit	15	28.8
Informal cooperative or no official status	7	13.5
Total	52	100.0

Figure 10.

Commercial versus Non-Commercial

One of the fundamental differences among the various urban agricultural operations studied was whether they were commercial or non-commercial. Commercial is understood here to mean that agricultural production was undertaken in order to grow products for sale in the commercial market. Some of the non-commercial operations did

sell their products, but their sales activities were tied with other social goals, as has been found in past studies of entrepreneurial urban gardens (Kaufman and Bailkey 2001:10; Feenstra et al. 1999; Lawson and McNally 1998). One informant also mentioned having begun a social enterprise[18]. Despite the sales aspects of these operations, however, they were considered non-commercial in this analysis for reasons that will become apparent in subsequent sections of this dissertation. As shown in Figure 11 below, 15 operations were commercial and 37 were non-commercial.

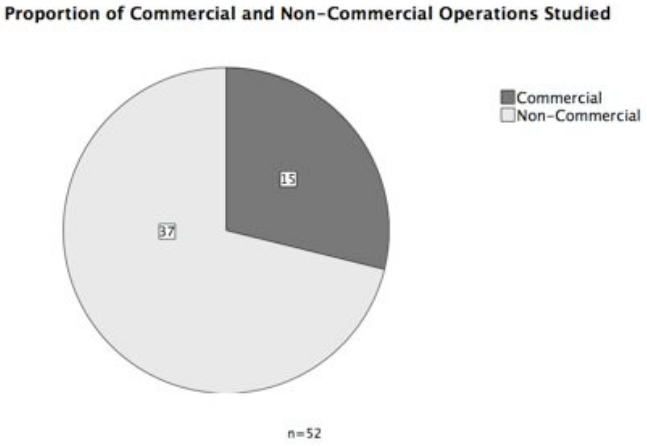


Figure 11.

This section has described the urban agriculture types in Alameda County, ways in which operations differed in terms of coordination, management, business/organizational structure. The following section builds upon this general level of data in order to develop

[18] A social enterprise is an organization or venture that achieves its primary social or environmental mission using business methods (Social Enterprise Alliance website, www.se-alliance.org/about_movement.cfm. Accessed October 15, 2009.)

a better understanding of the complexities of the operations and their contribution to the agrifood system in Alameda County.

Goals and Main Purpose of Urban Agriculture Operations

Diversity of Goals

One of the objectives of this study was to assess the various goals of urban agricultural producers in Alameda County, and what they would need in order to come closer to achieving and sustaining them. To this end, respondents were asked to identify the main goals of their farm, ranch, or garden operation. Previous studies have found that urban food production is often just one of many activities conducted by organizations focused on a variety of social goals (Feenstra et al. 1999; Kaufman and Bailkey 2000). Likewise, the diversity of responses to this question illustrated the multiple and interrelated goals of both commercial and non-commercial urban agriculture operations.

a. Commercial operator goals

Goals mentioned by commercial operators are displayed in Figure 12. Not surprisingly, the most frequently mentioned goal among commercial operators was to make a living or to sustain the operation (financially). Still, only nine of the fifteen commercial operators indicated this as a goal. Informants also mentioned goals of producing high quality, fresh and culturally important products for themselves and their target customers. One third of the commercial operators indicated at least one of these goals, and almost as many mentioned enjoyment, recreation, relaxation, leisure or adventure as a goal of their operation. Thus, the commercial operators in this study were not *solely* motivated by

profit or even financial sustainability of the operation. Quality and personal fulfillment were also important goals.

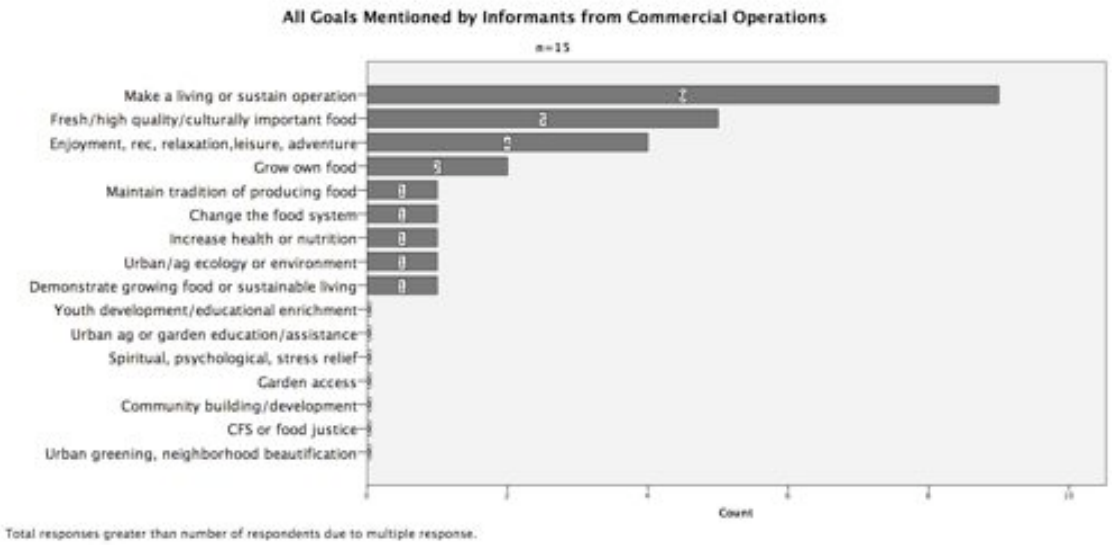


Figure 12.

b. Non-commercial operator goals

Respondents from non-commercial operations also mentioned numerous goals, as displayed in Figure 13. Access to gardening was a goal of over half of the non-commercial operations. (This was clearly influenced by the fact that half of the informants in this study represented community gardens whose official mission was to provide gardens to city residents.) Other frequently mentioned goals were growing ones' own food; community building and development; producing high quality fresh and culturally important products for gardeners' own consumption; and enjoyment, recreation, leisure or adventure.

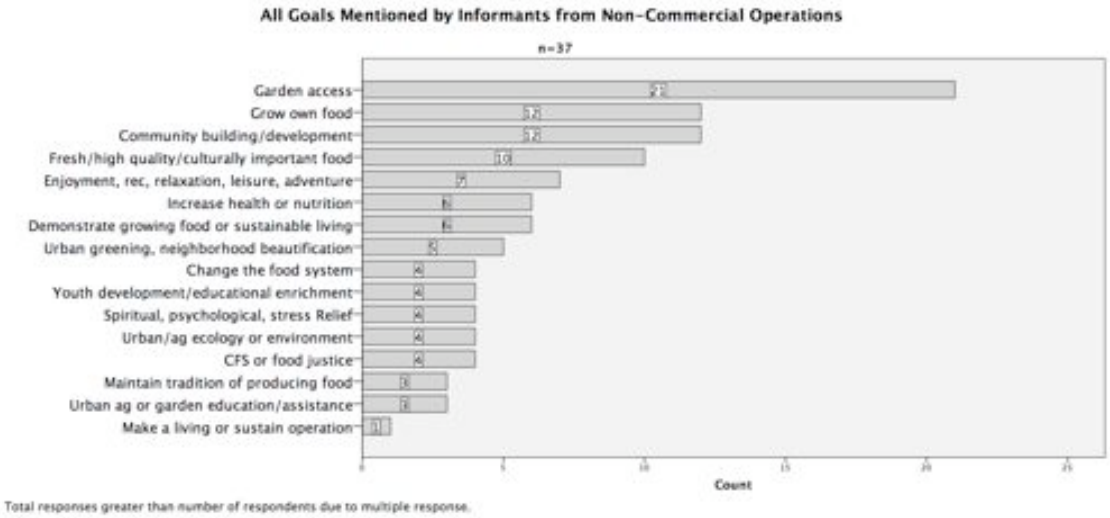


Figure 13.

c. Common goals

As suggested in Figures 12 and 13, commercial and non- commercial operations also had a set of common interests, despite their fundamental differences. Figure 14 more specifically compares the top four goals of commercial and non-commercial operations relative to the other operation type's ranking of the same goal. Although the goal that was most frequently mentioned by each group was either low ranking or not mentioned by the other group (i.e., making a living was the top goal for commercial operations, but ninth for non-commercial operations), the other three main goals were held in common by both groups. Producing fresh/high quality/culturally appropriate foods; growing one's own food; and the enjoyment/recreation/leisure/adventure aspects of food production/harvest were each among the top four goals mentioned by both commercial and non-commercial operations. These common goals are set in boldface within the table. Beyond their

differing levels of engagement with commercial activities, key informants had many similar interests related to qualities of life and food, and these were transferred to their urban agriculture operations.

Comparison of Goals Mentioned by Commercial and Non-Commercial Operators				
Goal	**Commercial Operations**	Rank by Non-Commercial Operations	**Non-Commercial Operations**	Rank by Commercial Operations
#1	*Make a living/sustain operation*	9	*Garden access*	n/a
#2 (Two topics tied for non-commercial operations)	***Produce fresh, high quality, and/or culturally appropriate foods***	3	*Community building/ development* ***Grow own food***	n/a 4
#3	***Enjoyment, recreation, leisure, adventure***	4	***Produce fresh, high quality, and/or culturally appropriate foods***	2
#4	***Grow own food***	2	***Enjoyment, recreation, leisure, adventure***	3

Figure 14.

Main Purpose of Operations

Beyond the similarities and differences between commercial and non-commercial operations, there were also important differences among the non-commercial operations themselves in terms of the main purpose of their urban agriculture activities. These differences were sufficiently distinct to allow a characterization of non-commercial operations according to what motivated them to engage in urban agriculture. To this end, data collected from key informants were corroborated with operations' printed materials

(such as mission statements, when applicable), to derive a set of themes that reflected the main purpose of each urban agriculture operation.

Four themes emerged through this analysis that characterized the operations. The three themes which characterized the non-commercial operations studied were: community gardening; CFS/food justice/youth development; and sustainable living/self-provisioning, with commercial production considered as the characteristic "theme" of the commercial urban agriculture operations These themes are explained in detail below.

a. Community gardening (CGs)

Community gardens and orchards (CGs) provided garden space to community members to grow food for themselves and family members; sales of garden produce were prohibited in most cases. As mentioned previously, most community gardening programs in this study were supported by city agencies, regional government districts, and/or non-profit organizations.

Informants from community gardens/orchards articulated a wide variety of goals for the garden they represented, as summarized above in this chapter. These goals included those held by gardeners, in addition to the overall program goals established by coordinating entities (e.g., city departments), as discussed above. Goals of the agencies tended to be more general and reflected in gardening program mission statements, such as "providing garden access to city residents." Goals of the gardeners ranged from a singular purpose to several overlapping and/or distinct sets of goals. For instance, one respondent reiterated

the mission of the community garden that he represented, explaining that "the only goal is to give [gardeners] the opportunity to garden through spring, summer and fall." Many gardeners, however, articulated more a broader spectrum of goals, such as food, herb and flower production for sustenance and for the cultural/historical significance of growing food. One African-American gardener spoke of the personal importance of the garden that she represented:

> *I grew up on a farm with my mom, and we raised the stuff that we ate then, and [so, now] I like to see it grow. And I just like to be out, you know, and then all that I can't eat, I like to share with other people too. And it's fresher. And it's fun, harvestin', you know, when the tomatoes is ready to pick, you know, it's fun [to say] 'This is what I grew in the garden.*

Another respondent summarized the goals of the garden that he coordinated as follows:

> *This garden is essentially established to be help to the [local residents.] The food production value of it, or entertainment value of it, or the stress relief value of it […] All of them apply, actually, here. For some people it helps them in terms of their day-to-day living, in terms of making their own foods, low income [gardeners], basically, this is a help to them. For some people it's a help in terms of stress relief. […] So, these are essentially the two most important [goals.] One is food, leisure—entertainment, and the other is stress relief.*

Thus, the purpose of community gardens was articulated differently by participants and coordinating entities, when applicable. (Again, not all community gardens studied were part of a city program.) Among gardeners, the purpose of the garden generally included an intertwining of food production and community. For instance, two community gardens consisted largely of Mien gardeners for whom growing food in the community setting was a way to access culturally important vegetables.

Many community garden respondents mentioned community-building/development as a goal, however, several of the comments suggested that there were both different *concepts*

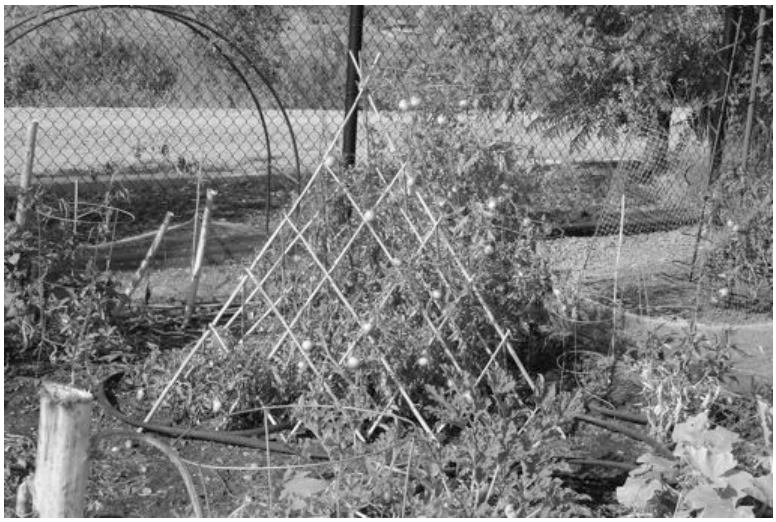
of community, and *differing levels of interest* in community-oriented work. This field research did not probe the in-depth meanings of "community" held by gardeners, but informants' responses gave a clear indication that there were different perception of the meaning of "community garden". This was evident both in terms of involvement of the community *surrounding the garden*, as well as the "community" that may have existed among participants *within the garden*.

Issues pertaining to the surrounding community were exemplified by the comments of one (White) key informant, who mentioned the lack of participation by neighborhood residents in the context of challenges faced by the garden:

> *[A challenge is to] make it a* community *garden. Not just a word, but in reality, you know, where we wouldn't have to lock it up, people in the neighborhood felt responsible for it, and felt like it was their garden, and that none of us had to be here, and they could be here.*

As this comment suggests, this community garden (which was located in a relatively low-income community of color) was not used by the residents in the surrounding neighborhood, and had been started by gardeners from other neighborhoods. The informant from this garden indicated a genuine interest in involving gardeners from adjacent homes, but participating gardeners had apparently not been successful in attracting neighborhood residents. In fact, several community garden informants echoed this experience. For instance, many community garden programs specifically prioritized providing low-income urban residents with access to garden plots, but had experienced limited success in achieving this goal, despite the location of gardens in low-income neighborhoods. As one respondent put it, *"It's supposed to be for low-income people; it's right in front of low income housing, but it's hard to get low-income people involved."*

Nor was the "community" spirit always a driving aspect *within* the garden. Gardeners in a few of the community gardens studied were almost entirely focused on their individual garden plots. This was illustrated by one community garden coordinator's observation about gardeners' interest in maintaining common areas: "People don't wanna take that extra 10 minutes," she commented, "A few times people have chosen to leave just because they can't handle the time commitment of the garden." Other respondents also mentioned a lack of enthusiasm among gardeners for what they called "collective work."



Community garden plot in eastern Alameda County.

Some community gardens had made explicit efforts to achieve the community building (within the garden) and community development (in neighborhoods surrounding the garden/ with other gardens) goals. Seasonal public events (such as harvest festivals), door-to-door outreach, and casual invitation of passers-by to participate in the garden were used as a way to actively work on creating a rapport with the neighborhoods surrounding the garden site. This was somewhat effective for some gardens, and less so for others. Efforts to create a community *within* the garden (i.e., among gardeners)

included garden potlucks, spring/fall clean-ups, and cooperative management of common areas (e.g., paths, trees, plots used to grow vegetables for donation to food banks.) One garden was managed and operated by a small group of Mien families whose personal relationships preceded the garden project. For these families, cooperation between gardeners was a fundamental part of growing food. Thus, among community gardens and orchards, goals varied in terms of the relative importance of food, recreation, and "community." Still, these operations were fundamentally similar in terms of working toward a general goal of providing access to food production space to urban community members, however defined.

b. Community food security; food justice; youth development (CFS/FJ/YD)

Several of the urban agriculture operations focused on urban social justice, of which food production for local communities was one part. These community-based urban agriculture operations differed from the community gardening operations described above in that they articulated a *de facto* critique of the social system through their activities. These groups were engaged in producing food specifically for food insecure communities, fostering youth development among underprivileged youths, and/or providing job training to local residents.

Three distinct concepts formed a set of interrelated goals among respondents in this category. As noted in a preceding chapter, *community food security* (CFS) is considered as a state when healthy, affordable and culturally acceptable foods are accessible in a given community. The concept of *food justice* (FJ) considers social and economic

inequities that give rise to food *in*security among various social groups, emphasizing local community control (*People's Grocery website* 2009; Levkoe 2006). *Youth development* (YD) "can be seen in three different ways: as the natural process through which youth grow into adults; as a set of principles underlying youth programs that encourage thriving among youth; or as a set of practices that foster the development of young people" (Heck and Subramaniam 2009). The YD programs in this study worked mainly with youth of color in underprivileged communities to develop a sense of personal empowerment and responsibility. Education about life skills such as healthy eating, seeking and maintaining employment, and community leadership, was incorporated into food and agriculture activities including food production, produce sales, and peer nutrition education.

Mural at CFS/FJ/YD site in Berkeley.

Garden beds at CFS/FJ/YD site in Oakland.

Each of the CFS/FJ/YD operations mentioned at least two of these three concepts as the main goals of their urban agriculture activities. Moreover, these goals were grounded in a critique of the urban agrifood system that reached beyond the act of producing one's own (organic) food. For instance, one operator articulated her organization's position urban agriculture as follows:

> *I really think that in the whole market for food, you know, the food economy, unless the macroeconomic conditions change in the food economy, truly low income people will not be able to purchase organic food anytime soon…that we can envision…[though] people are working to try to change that…So I really think that what we're doing is taking food out of cash economy altogether in order to serve the truly low income people and working class people with organic produce. Right now that's the only way to do it, i.e., there has to be a subsidy. For us, that subsidy is we grow the food on volunteer labor so we don't have to charge money for it, or as much money for it. And we also have people working on self-sufficiency, auto consumption, rather than try to figure out how to get these people to purchase in the market.*

The coordinator of another of these groups noted that goals of his operation were to

> *strengthen the local food network for people who live right in this neighborhood, especially as related to health and the lack of grocery stores. The City [health status] report found that residents of this area had 10 years less life expectancy than rest of area…a lot of it related to poverty, but this report attributes 15 percent of it to preventable disease, which can be directly addressed through nutrition and exercise.*

One CFS/FJ/YD informant, whose operation worked with local teens, explained how her program integrated community food security and youth development:

> *This is in a low-income neighborhood, and serves a low-income community, and a lot of the health issues are related to nutrition. So there's like diabetes and heart disease and those issues […] we're trying to teach the youth and the kids how to eat more healthy, and at least know, be able to make educated choices about what they eat […] The garden program […] is a way to get teenagers involved, and also to provide services to them. It's also a work-training program. So the teens come and work after school, and also during the summer. They're basically learning what it means to hold a job, and what it takes. […] And then, within the garden [the goal is] for them to learn about nutrition, to be connected to their food and the natural cycles, […] to have a sense of responsibility, and to do something positive for community, because goal of the produce that we grow is to get it back to the community.*

Although these operations were firmly grounded in the communities in which they worked, their worldview was distinct from (though potentially complimentary to) that of the community gardens. Indeed, one of the CFS/FJ/YD informants positioned her operation's concept of "community market farms" in a certain middle ground between community gardens and commercial agriculture:

> *We call them [that] to make a distinction with community gardens. But if you just say that they're market farms, that implies that they're a purely commercial endeavor, which would mean that you'd be marketing it at as high a price as you could. 'Community market farms' means it's run like a market farm as much as possible in terms trying to be as productive as possible and as efficient as possible, but the food benefits—is* for *the community. And there's a lot of community involvement.*

The act of food production for CFS/FJ/YD operations was thus motivated principally by a drive to confront social inequalities in the urban system through community-based urban agriculture. For the YD operations, urban agriculture was one of the activities used to teach local youth about the skills listed above. The CFS/FJ/YD operations in this study resembled many of the urban agriculture operations that have been described by academics and advocates in the context of community food security and entrepreneurial

urban gardens. (See Brown and Carter 2003; Feenstra et al. 1999; Kaufman and Bailkey 2000.)

c. Sustainable living/self-provisioning (SLSP)

In addition to the non-commercial operations whose main purpose involved community and social aspects (community gardening or CFS/FJ/YD), several key informants practiced urban agriculture as a personal effort to live sustainably, and/or engage in urban homesteading, (e.g., the production of a majority of one's own food in an urban setting). These urban agriculture operators generally questioned the ecological sustainability and/or social equity of the agrifood system, and, as a response, opted to produce a majority of their own food using what they understood to be more sustainable methods.

Dairy goats at SLSP site in Oakland.

The SLSP operators engaged in a form of backyard food production that stepped beyond the realm of leisure, as they sought to contribute more substantially to their own food supply. Moreover, two of three kept an impressive variety and number of livestock for

personal consumption. Each of these respondents also expressed an interest in demonstrating sustainable living or sustainable agriculture to other urban residents who might be able to replicate these practices at their own homes. Still, the extent to which these respondents sought to position themselves as alternatives to the mainstream agrifood system varied. For instance, the goal of one of the operations was to "meet our needs and heal the Earth—to be an example of producing what is needed in an environmentally friendly and sustainable way." However, another respondent refuted the idea that urban food production represented a new/alternative agricultural paradigm as she explained her operation's goals:

> *I think people get really hooked on this idea of self-sufficiency and 'we're gonna grow all our own food, and support ourselves, and sell to restaurants' or whatever. [I]t's kind of like, nobody's gonna make money doing this, so why don't you just give it away, and make it like a hobby, and a fun thing, and then […] some people get to eat fresh vegetables and get to meet each other, you know? That's kind of the philosophy.*

The operators in this category thus articulated a critique of elements of the mainstream agrifood system by engaging in personal lifestyles that they considered to be more environmentally sustainable and/or more community-oriented. Urban food production was not only a "leisure" activity for these informants, since each sought to produce a substantial part of her/his daily food and to help others learn about doing so. Nor was it the case, however, that SLSP operators sought to increase their personal food *security*—none of these informants mentioned a lack of personal access to fresh or healthy products as a factor motivating their urban agriculture activities. That SLSP operators were not as motivated by a personal or community *need* for access to healthy foods set them apart from the CFS/FJ/YD groups, although their critique of the existing agrifood system

represented a shared discontent with that system. These operations also had much in common with some of the community gardens whose activities bridged between individual and collective aspects of urban food production and ecology.

d. Commercial operations

The commercial urban agriculture operations studied were privately held, small-scale urban- and urban edge farms, ranches, apiculture, and mushroom hunting operations whose main activities were production, harvest, and sales through various channels.

Again, although a profit motive is commonly assumed to be the goal of commercial operations, only some (nine of fifteen) of the commercial operators in this study indicated that their main goal was to sustain their operations and to support themselves through commercial agriculture. The other goals of commercial operations were discussed above, and the different philosophies underlying these goals were reflected in comments made by several key informants. For instance, one operator smiled as he explained that his goal was "to grow and sell vegetables…make a little money…make a living at it." Likewise, another commercial operator cited his operation's goals as "to be able make a living and keep everybody working…also to produce good quality organic vegetables." Still another operator stated that she began producing organic produce when many of the small-scale organic farmers who had supplied her restaurant establishment were "bought out by larger agricultural conglomerates" in the 1990s. For this operator, the motivation behind urban production was a need to guarantee access to an affordable supply of high-quality, organic ingredients for her own retail outlet.

Commercial field in eastern Alameda County.

Several commercial operators were driven by philosophical beliefs in alternative agriculture. One such informant tied his goals to an interest in agroecology and a drive to "infect the local community with the idea of supporting local, organic farmers." Yet another commercial operator stated that he was "very adamant in not being interested in what I would consider 'production farming'." This respondent added: "We're really farming for quality. We're sort of doing the 'artisanal' farm." Thus, although the commercial operations in this study were by definition involved in for-profit agriculture, this did not preclude them from having other goals such as farm family sustainability, agricultural ecology, and what have been termed "post-productivist" agricultural values—those which are focused on quality as well as (or in place of) quantity (Ilbery and Bowler 1998; Lowe et al. 1993).

Using the themes described here, Figure 15 summarizes the proportion of each type of urban agriculture operation. These themes are used to frame the analyses below and in subsequent chapters.

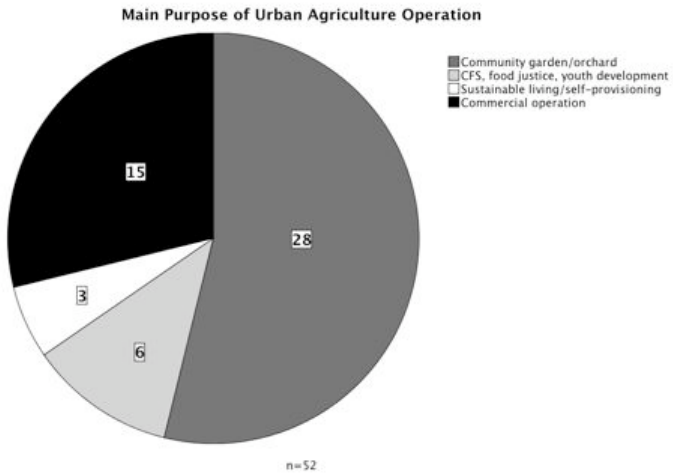


Figure 15.

The following section turns to products and distribution aspects of the urban agriculture operations.

Products, Yield, and Distribution to Target Groups

The diversity of goals discussed by key informants was useful in characterizing the urban agriculture operations. Beyond goals, of course, were the more tangible contributions that gardens, farms, and ranches made to the urban agrifood system—food products and their consumption. The types of products grown by urban agriculture operators, and how they reached urban consumers are discussed next.

Products and Yield

Statistics that summarize agricultural production are collected regularly by county agricultural commissioners and the USDA, and were not the focus of this study. However, it was of particular interest to assess the diversity of products grown, raised and harvested by key informants, especially because data on many of the operation types in this study (e.g., non-commercial farms and gardens) are not typically captured in the national Census of Agriculture or county statistics. Key informants were thus asked to identify the types of food products that they grew, raised and harvested, as well as the ways in which these were distributed and sold throughout the urban community.

Nearly one-fourth of the urban agriculture operations produced vegetables, vining/cane fruits, and/or berries. About one-fifth of operations in this study produced tree crops (including tree fruits and nuts) and one-fifth produced herbs or tea. Nearly 15 percent produced nursery products (natives species, flowers and ornamental seedlings), *in addition to* food products[20]. Smaller percentages of the operations grew and/or harvested a variety of small animal/bee products; (meat, eggs, goat milk, honey); grains; and mushrooms. A few of the operations also raised horses or grew animal fodder in addition to food products. Figure 16 summarizes the percentage of urban agriculture operations that produced each of the agricultural products listed.

[20] As explained in chapter 4, this study focused on producers of edible food products.

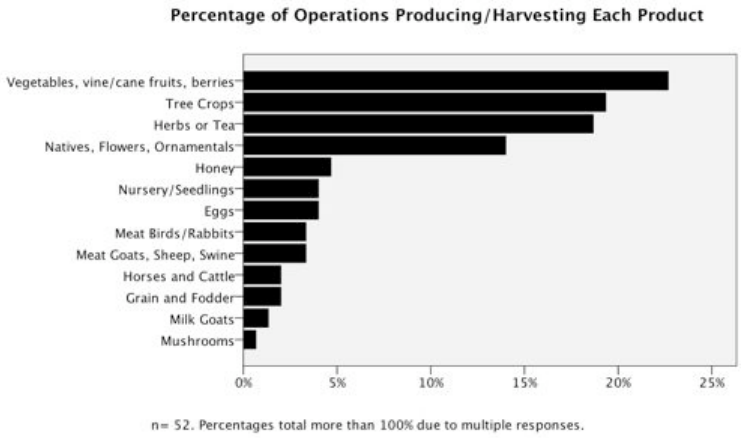


Figure 16.

Although not depicted in Figure 16, most operations had a diverse product mix, and even among the operations that produced only one product type (e.g., only vegetables or only fruit), most grew a diversity of species rather than a monocrop. The product mix depended on the type of operation and was generally based upon who was to consume the products. Not surprisingly, the products grown in community gardens and sustainable living/self-provisioning operations were selected according to the personal preferences of community gardeners and SLSP operators. This meant that a broad diversity of fruits, vegetables and herbs were grown, in addition to animal products raised at some operations. Several of the CG and SLSP key informants specifically mentioned growing native plants, including non-edible vegetation, that were well-adapted to the environment of the East Bay in general, and to the specific micro-climate where the garden or farm was located.

Both commercial- and CFS/FJ/YD operations selected the products grown based on the preferences of their respective target clientele and the ability to sell/distribute these products to these consumers. Many of the commercial operations in this study grew one to a few main crops, including strawberries, cooking greens (e.g., collards, kale, chard, mustard greens), tomatoes, or jack-o-lantern pumpkins. One commercial farmer bred and grew special tomato varieties, which he sold in high-end markets (such as upscale restaurants in San Francisco and Berkeley). Another commercial farmer explained the surrounding community's appreciation for his farm's cooking greens, "We were growing soul food, so the people, the neighbors liked it."

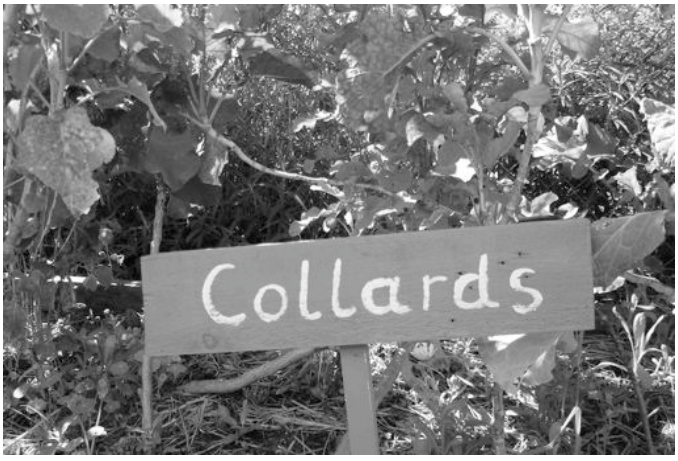
Poultry and goats at commercial site in eastern Alameda County.

The CFS/FJ/YD operations tended to select a product mix that reflected the cultural preferences of the communities that they served. Some informants from these operations also experimented with new crop varieties in order to increase sales to restaurants (as part of the social enterprise activities that helped fund their urban agriculture programs),

and/or to give participating youths an opportunity to experiment with a wide variety of produce. One farmer in this category described her operation's product mix as follows:

> *We have a certain amount of variety, but we stay pretty limited in terms of what crops we grow. We really focus on the most nutritious foods. So, cooking greens and herbs and salad greens. And then in addition, just for interest, we grow many typical summer vegetables and also root vegetables […] We grow culturally appropriate vegetables, so for what that means for us is that we don't tend to grow a lot of unusual specialty items. We stick to things that have a look that people would recognize from their trips to the grocery store. So there's like white carrots, and yellow beets, and arugula, and all these fabulous specialty vegetables—you're not gonna see them in our operation.*

Several commercial and CFS/FJ/YD operations also sold products through a community supported agriculture (CSA) system that they had adapted to make affordable to low-income clientele.[21] In these cases, the product mix was highly diverse and was intended to provide customers with a variety of seasonal produce for an entire week.



Bed of collard greens at CFS/FJ/YD site in Berkeley.

[21] "CSA" or community supported agriculture, is a direct marketing system in which consumers pay in advance for a given quantity of farm products (usually a box or basket that feeds 2-4 people). This spreads the financial risks of agricultural production between the farmer and the consumer.

The diversity of products grown and raised by operations in this study demonstrates the potential role that urban agriculture might have in making culturally acceptable foods available to residents in this demographically diverse area. Still, one of the common questions about the importance of urban agriculture focuses on the productive capacity. Data on production yield were not available from all respondents. However, some CFS/FJ/YD operations had tabulated production records for 2007 in terms of pounds of food produced. One operation reported growing 7,798 pounds of produce at its five sub-acre urban sites, and a second operation reported growing 2,450 pounds of produce at its four urban lots and an additional 16,700 pounds at a two-acre urban edge site.

Although comparable yield data were not collected from all operations in this study, the combined findings about the variety of products and the yield attained by some operations suggest that the importance of urban agriculture in the study area was both qualitative (e.g., diversity of products) and quantitative (e.g., pounds of food). Moreover, relatively high revenues from urban gardens have been reported elsewhere. One study conducted in the late 1990s reported that an urban agriculture organization in Berkeley had sold up to $ 3,462 worth of vegetables, and up to $1,814 worth of non-vegetable products (wreaths, plant starts, and fresh flowers), totaling up to $5,276 worth of revenue from its ½ acre site (Lawson and McNally 1998). Product sales at this garden were part of a social enterprise strategy, as defined above, designed to support the organization.

More recent accounts of urban commercial farming have cited revenues between $10,000 and $68,000 per acre (*Spin Farming website* 2009; Swope 2009). Thus, there appears to be a significant potential for urban agriculture contribute to local economies. However, the extent to which food products were made available in communities in Alameda

County was tied to distribution mechanisms—The *presence* of food within an area does not necessarily translate to *accessibility*. Product sales and distribution are discussed next.

Small hoop house at commercial site in Berkeley.

Commercial beehive in Oakland.

Sales and Distribution

Though a typical market analysis would focus solely on producers selling goods in the market, the inclusion of operations whose products were distributed through non-market outlets allowed for a more comprehensive analysis of the role of urban agriculture in the local food system. Seven distribution outlets were identified based on interview responses:

a. Products consumed by **self, household, or informal social networks**;
b. Products grown specifically for consumption in **low-income communities and sold/given *directly* to low-income consumers at little to no-cost**;
c. Products used in **community-based operation's programmed activities** (i.e., healthy cooking classes run by UA organization);
d. Products **sold in commercial markets** (including farmers markets, direct sales to restaurants, community supported agriculture, etc.)
e. In combination with one or more of the above, **excess products donated to *third-party* social agencies for community or emergency food distribution** such as food banks and/or women's' shelters;
f. In combination with one or more of the above, **products given to staff and volunteers;**
g. In combination with one or more of the above, **unsold/non-useable products fed to livestock, composted, disked into fields**.

Figure 17 shows the percentage of each type of operation using each of the seven distribution outlets.[22] As shown, all four operation types used multiple distribution outlets, combining market sales with low-cost/free distribution in their communities, for instance, or donating extra garden produce/unsold farm products to food banks.

Sales and Distribution Outlets Used by Each Operation Type

		Self, family, friends, neighbors	Sold in general mkt	Distributed free or low cost in community	Used in programmed activities	Excess donated through other orgs	Staff, volunteers	Fed to animals/ composted/ disked	Total Number of Respondents
Community Garden/Orchard	% within operation type	100.0%	7.7%	11.5%	3.8%	23.1%	3.8%	.0%	26
CFS, Food Justice, Youth Development	% within operation type	.0%	66.7%	66.7%	66.7%	33.3%	83.3%	33.3%	6
Sustainable Living/Self-provisioning	% within operation type	100.0%	66.7%	33.3%	33.3%	33.3%	33.3%	.0%	3
Commercial Operation	% within operation type	.0%	100.0%	.0%	.0%	26.7%	6.7%	33.3%	15
Total number of responses		29	23	8	6	13	8	7	50

Percentages and totals are based on respondents.

Figure 17.

As discussed above, community gardens were generally geared toward personal and family food production. As such, 100 percent of the informants in this group indicated that the gardeners and their friends, families, and neighbors consumed garden products. Some community garden products were also donated to emergency food organizations and/or distributed less formally within the community (to passers-by, for example). A small number of community gardens allowed gardeners to sell their produce, and a few informants indicated that garden produce was given to occasional volunteers.

Among CFS/FJ/YD operations, two-thirds of the informants reported distributing through each of three main venues: free/low-cost distribution in the community; programmed activities; and sales in the general market (e.g., social enterprise). Low-cost food distribution in low-income neighborhoods was one of the cornerstones of these

[22] This table excludes two operations due to missing responses for this question.

operations' urban agriculture activities. In many cases distribution/sales systems consisted of an adapted form of direct marketing strategies that made products more easily accessible to low-income communities. For instance, several organizations held weekly farm stands in the neighborhoods where they conducted their programs. (These were typically low-income areas.) As mentioned above, three organizations had also adapted the CSA model to serve their low-income clientele.

Prices in both the urban farm stands and the CSA system were typically set at or below supermarket prices for conventional produce, although the products sold were grown using organic methods. One organization used a sliding scale price scheme that allowed farm stand consumers to pay what they felt they could afford within three suggested price levels: 1) upper-end market prices that approximated more expensive specialty store prices; 2) mid-range prices that approximated conventional supermarket prices; and 3) minimal cost or free. The CSA prices were set by the CFS/FJ/YD operations at around $5 per week for a bag of produce, which was intended to provide produce for a four-person family. (By contrast, other area CSA programs range from $15-50 per week.) As discussed above, programmed activities were among the core-activities for some of the CFS/FJ/YD operations. Examples of these activities included healthy cooking classes for youth and adult community members, and afterschool snack programs for youth participants. In these cases, produce from the urban agriculture operation was also used for these activities.

The main destination of products grown by the SLSP operations was the operators themselves, their family, friends, and neighbors. Additionally, two of the three SLSP operations sold some products to restaurants, or through informal networks. Four other outlets (low-cost distribution; programmed activities; donations of excess produce; distribution to volunteers) were each used by one SLSP operation.

By definition, all commercial operations sold their products. Farm stands, direct sales to restaurants and grocery stores, farmers' markets, and wholesale/livestock auctions were the most frequently mentioned sales venues for commercial operators. (Although this study focused mainly on commercial operators who conducted direct sales, some producers sold through wholesalers and livestock auctions *in addition to* their direct sales.) About one-fourth of the commercial operators also donated unsold produce to emergency food outlets, and about one-third composted, disked, or fed unsold produce into the field. One informant reported giving food products to volunteers and employees. (It is likely that other commercial operators gave products to volunteers/employees, and consumed their own products, although they did not report it as a distribution/sales outlet.)

Box 4. Specific Sales Outlets Used by Commercial and Non-Commercial Operations

Figure 18 summarizes the *specific sales outlets* used by the commercial operations, as well as those used by non-commercial operations overall. (Only the eight non-commercial operations that sold products are included in this table.)

Number of Commercial and Non-Commercial Operations Using Specific Sales Outlets

		Non-Commercial Operations	Commercial Operations	Total
Sales Outlet	Farm stand	5	5	10
	Restaurants (third party)	4	4	8
	Farmers' markets	2	4	6
	Direct to stores	1	4	5
	Wholesale or auction	0	6	6
	Own store or restaurant	0	3	3
	4H	0	2	2
	Internet	0	2	2
	Word of mouth	1	3	4
	Live animal sales	0	3	3
	Total number of operations	8	15	23

Figure 18.

Box 4.

The fact that urban agriculture operations used both sales distribution *and* non-market outlets shows that the diversity of products grown/raised/harvested were made available to area residents from various economic and social groups. Some of the operators distributed their farm/garden products mainly through high-end markets, such as upscale restaurants, while others targeted consumers in lower income areas. Farm stands and farmers' markets provided access to a less intentionally targeted customer base (i.e., any customer who had the means to purchase products through these venues). This study did

not explore the demand for urban agriculture products in the study area. Still, the diversity of products and distribution outlets used by the operations supports the contention that the urban agriculture can make significant contributions to both community food security and the urban agrifood system more generally. Future research might explore these questions, as well as the quantitative and qualitative contribution of urban agriculture to food security at the household level.

Chapter Conclusion

This chapter has presented a set of general findings describing urban agriculture in the county. Based on the research findings, it was possible to group the urban agriculture operations based on their structural characteristics, production management, and the main purpose that motivated the practice of urban food production. The operations also contributed to the urban food system in several distinct ways, including market-, non-market, and alternative distribution mechanisms. These practices, along with the variety and types of food produced, demonstrated the potential impact that the urban agriculture operations may have had in terms of the local availability of fresh foods.

Some of the operations were critical of the dominant agrifood system, and this was what motivated them to practice urban agriculture. Issues of environment and social justice were important to many of the informants. Some operators sought to enact their critiques by creating alternative models, while others, particularly those focused on social justice, strove to realize a new system entirely. While a typology of what Allen et al. discussed as 'alternative' or 'oppositional' was not uncovered at this level of analysis, these concepts

were certainly reflected in the informant responses about goals and other defining characteristics, especially ways in which products were distributed and why this was so. This topic will be explored further through more detailed analyses presented in the following chapters.

At a county level, not all areas had access to public garden sites (i.e., community gardens or CFS/FJ/YD operations) or operations that sold or distributed food in the local area, potentially leading to geographic inequities in terms of the benefits derived from urban agriculture. This topic will be addressed in chapter 8. Chapter 7 turns first to an exploration of relationships between the purpose of the non-commercial urban agriculture operations, involvement of government agencies in these operations, and potential political explanations for these relationships.

CHAPTER SEVEN

Food, Rights, and Politics in the Non-Commercial Sector

If the preceding chapter's interpretations about operations' main purpose hold validity in terms of their implications for social change, this also hints at the potential political nature of some forms of urban agriculture. To this end, this chapter explores a set of possible socio-political dynamics related to non-commercial urban food production in the county.

Note: Commercial operations are excluded from the analysis in this chapter because this was necessary in order to construct a meaningful comparison between operation types. Despite the fact that commercial operators consulted in this study indicated numerous goals for their urban agriculture operations, this chapter assumes that their participation in the commercial sector shaped their purpose.

Relationships between Sector and Purpose

Given that some of the operations in this study articulated a drive for social justice as part of their main purpose, it is interesting to examine how this may have affected government agencies' involvement with each type of urban agriculture.[23] As shown in Figure 19, the main purpose of non- commercial operations was related to the social sector of which they were part. Community gardens were coordinated mainly by city agencies and non-profit organizations, though four of these were managed by informal cooperatives

[23] Again, this study did not include interviews with government representatives, other than those who coordinated community garden programs in some cities. Therefore, is not possible to address individual government employees' attitudes in this analysis.

consisting of individuals and families. SLSP operations were also managed through informal cooperation among participating individuals. Meanwhile, CFS /FJ/YD operations were managed solely by non-profit organizations. (Although some CFS/FJ/YD operations had received funding from local and federal government sources and/or used city land for their garden activities, management of these operations was conducted by organizations in the non-profit sector in all cases.)

Main Purpose of Operation by Non-Commercial Sector

Count

	Non/Not for Profit	City Agency Program	Miscellaneous/ Informal Cooperation	Total
Community Garden/Orchard	13	11	4	28
CFS, Food Justice, Youth Development	6	0	0	6
Sustainable Living/Self-Provisioning	0	0	3	3
Total	19	11	7	37

Figure 19.

Again, community gardens were managed by *both* non-profits and city agencies, while *only* non-profit organizations managed the urban agriculture programs focused on community food security, food justice and youth development. The limited nature of government involvement with urban agriculture operations focused on these issues of social justice is significant in light of the food access and health inequities discussed in chapter 4. Four possible factors affecting this finding are explored below.

Urban agriculture not viewed as a solution. One possible explanation for government agencies not taking a more active role in CFS/FJ/YD operations was that urban food production was simply not seen as an important part of increasing access to healthy foods. Again, past studies have found that lack of local government support is often a

challenge to urban agriculture (see Kaufman and Bailkey 2000, for example), so this explanation is plausible, though perhaps incomplete.

Government agencies "outsourced" services to non-profit organizations. Lester Salamon (1995) has posited the relationship between government and non-profit organizations as "third party government," wherein government turns to private (e.g., non-profit) organizations to conduct social welfare work that the latter are presumably in a better position to manage. In the context of this study, this type of relationship seems to have existed in cases where city agencies partnered with non-profit organizations to coordinate community gardens. City and county agencies may not have had the capacity (e.g., staff time; rapport with community members) to become integrally involved with community garden management. However, city and county agencies did provide basic infrastructure for some community gardens throughout the county. This included land and water, as well as an official relationship with the respective agency (i.e. a staff liaison who oversaw the program, though not always the daily operations of the gardens). The third party government theory seems apt in the case of community gardens examined, but this was not relevant for CFS/FJ/YD operations at the time of this study, since government agencies were not directly involved with any of these operations.

Organizations provided a needed service. A third possible explanation for the lack of direct governmental involvement in CFS/FJ/YD urban agriculture operations is that these operations existed *because* government programs had not been successful in eliminating

food insecurity.[24] This is a variation on explanation two, (i.e., Salamon's third-party government theory as applied to community garden programs). The difference between these two explanations is that in the case of CFS/FJ/YD operations, government agencies were not directly involved with the urban agriculture activities beyond the provision of occasional grant funds or production resources for some operations as of the time of this study.

As discussed above in this dissertation, low-income urban residents often face one or more barriers to accessing healthy food. These barriers include the higher price of healthy food and lack of nearby retail establishments stocking healthy products (Hendrickson et al. 2006; Jetter and Cassady 2005). For example, it is recognized that healthy food products, (including USDA Thrifty Food Plan options),[25] are often more expensive and less available in low-income areas. Emergency food programs such as Food and Nutrition Service's Supplemental Nutrition Assistance Program, (SNAP, formerly the federal Food Stamp Program), and the Women, Infants, and Children program (WIC), do aim to mitigate food insecurity. Still, these federal and state-funded programs have not always resulted in increased consumption of fresh produce among participants (ibid). This means that those living on limited incomes are required to spend a greater proportion of their food budget,(including financial assistance offered through the above-mentioned programs) to buy healthier food, whether or not it is available nearby. When faced with a trade-off between healthier- versus sufficient food, such consumers may reasonably be

[24] Food security is defined by the USDA Food and Nutrition Service as "access by all people at all times to enough nutritious food for an active, healthy life." http://www.fns.usda.gov/fsec/. Accessed Sep 21, 2009.
[25] Thrifty Food Plan is a set of guidelines for purchasing healthy food at a minimal cost. TFP items include whole grains, fresh fruits and vegetables, and low-fat animal products (USDA Center for Nutrition Policy and Promotion website, www.cnpp.usda.gov. Accessed September 21, 2009).

compelled to buy less healthy items, even when they make use of the emergency food programs that essentially subsidize the cost of food (Hendrickson et al. 2006; Jetter and Cassady 2005).

Given the food system structures described above and in preceding chapters, CFS/FJ/YD urban agriculture operations in this study may have represented a response to both the market's failure to supply affordable food to *all* consumers, and an insufficient combination of government programs designed to address food insecurity. The ineffectiveness of government programs in eliminating food insecurity might have stemmed from governmental budgetary constraints or from lack of visionary leadership. It may have also been influenced by political considerations, as discussed next.

Community Food Security and Food Justice Too Political. A fourth possible explanation for the exclusively non-profit status of CFS/FJ/YD operations studied is that the critique of the agrifood system articulated through these operations' activities was inherently political and counter-hegemonic. For example, community food security and food justice are concepts that approach what Anderson (2008) discusses as a "rights-based food system" (RBFS). She explains that:

> the overriding goal of rights-based approaches is that rights become embedded in everyday political and social expectations, so that the collective vision of how one should be treated and what one deserves, simply by being human, is transformed and steadily co-created to improve human potential for self-realization (c.f. Gready and Ensor 2005).

CFS/FJ/YD operations in this study essentially by-passed market and emergency food assistance programs by growing and distributing food through urban social networks and

other alternative arrangements. By working at the margins of established markets and government anti-hunger programs, these operations either overtly or by implication called into question the ability of existing structures to rectify inequities in the agrifood system. Rather than working through these structures (or even working to reform them), the CFS/FJ/YD operations engaged in both creating a new system of food procurement, and empowering community members to lead this type of work. The operations did this through their food production activities, as well as by fostering community members' critical consciousness about social justice in the food system. Another of Anderson's observations reminds that "when enough people assume a right, stopping them is impossible" (2008, 594).

As suggested by both Harvey (1973) and by Fals-Borda and Rahman (1991), government agencies are by nature conservative, and their power is upheld by a constant reification of the structures in which they exist. Hypothetically, a wider-scale recognition of food as a human right could incite a collective demand for this right for all those residing in the United States (where food is in abundance), necessitating a fundamental change in the agricultural system. It is thus plausible to imagine that governmental agencies (or their employees) might perceive the critical praxis of CFS/FJ/YD operations as having too much potential to lead a movement calling for significant changes in the existing social structure. That is, informed and empowered urban residents may insist on healthy food as a human right and thus become 'unstoppable.' This would most certainly have ramifications for the U.S. agricultural system and other areas of urban social politics.

The above hypothesis takes cues from the history of the Black Panther Party Free Breakfast for Children Program, which began providing free breakfasts to undernourished African-American children in Oakland the 1960s (*The Black Panther Party website* 2009; Fuller n.d.; Heynen 2009). By feeding Oakland residents, the BPP aimed to meet a local need related to food insecurity (Fuller n.d.). However, the program also had social effects that reached beyond local communities. First, the Breakfast Program became the model for the federally funded school breakfast programs that exist in the U.S. today (Heynen 2009). Second, the Program had revolutionary undercurrents that began with the notion of eating as a human right and progressed to the social reproduction of BPP as radical political movement (ibid, 411). In some cities the police attempted to disrupt the BPP Breakfast Program, but community organizing resulted in its continuation (ibid).

The historical reference to the BPP is illustrative (though it is particularly apt given that the Breakfast Program began in Oakland) and is <u>not</u> meant to insinuate that CFS/FJ/YD operations in Alameda County were engaged with, or inspired by, direct action politics. Nor is there evidence that police departments or other governmental agencies in Alameda County had attempted to disrupt the efforts of these organizations. Rather, the reference is included here to illustrate how quickly the issues of community food security, food justice, and youth development can be scaled up to encompass social structural issues. Urban agriculture operations whose work explores food access and community food security through food justice and empowerment frames inherently question the structural

organization of the agrifood system in a way that government agencies are, at best, ill-positioned to address—especially because their authority derives from this structure.

Questions of power and hegemony might also inform one of the overarching questions of this research, which was how Cooperative Extension assistance for urban agriculture might be increased. If CFS/FJ/YD operations questioned the existing agricultural system's effectiveness at eliminating food injustices, they also implicitly questioned the authority of the USDA and its programs to do the same. In light of some of the possible explanations presented here, a more fundamental question might therefore pertain to if, and how, governmental agencies might honestly address issues of structural injustice in the agrifood system, whether this is through urban agriculture or otherwise. That is, might governmental support of agrifood system efforts extend beyond markets and the provision of "enough nutritious food," and more toward cultural respect, rights and justice? Anderson's article is again instructive in this regard. She points out, for example, that the United States has not ratified a 1966 International Covenant on Economic, Social and Cultural Rights (ESCR, which 155 other countries have ratified) that include "the right to work itself, food, safe working conditions, the highest attainable standards of health and opportunities for education" (Anderson 2008, 594-595). She argues that:

> *US failure to recognize ESCR as basic human rights, on par with civil and political rights, contributes to the absence in US discourse of these goals as entitlements and gives implicit license to US actions that degrade these rights for farmers, farmworkers, and other wageworkers in the food system* (ibid).

Clearly, this perspective casts doubt upon the likelihood of the *federal* government leading initiatives to officially recognize culturally acceptable and healthy food as a human *right*. However, Anderson also points out that "just because [ESCRs] are not

recognized as human rights does not mean that there is no official redress for conditions in which people cannot achieve these goals."

At more local levels, state, county, and municipal governmental agencies can (and sometimes do) implement practices that recognize not only the symptoms of agrifood system inequities, but also the injustices that belie them. Still, community-based organizations are in advance of government agencies on this particular issue, as exemplified by a recent comment made publicly by one food justice organization's director:

> *I firmly believe that without going beyond the surface-level symptoms and addressing the root causes, we will not solve the issue of community food insecurity. The challenge is that naming the root causes can be difficult, uncomfortable and, for some, even uncouth […] the term 'food desert' has emerged as a safe and neutral way to avoid rocking the boat with an analysis of inequity, racism, oppression, etc. But it is dangerous to falsely describe a problem because the result will be a false prescription of the solution […] Charity provides social services, while justice promotes social change. Charity responds to immediate needs, while justice responds to long-term change. Charity assumes people need expertise and help from others, while justice assumes people have expertise and are capable of helping themselves. The analysis and strategic choices that come with the approach have huge implications for how, and even if, a problem is sustainably solved (Ahmadi 2009).*

If, at individual or institutional levels, governmental agencies began to adopt a RBFS framework, then a resolve to address rights and justice might remain as the next step toward 'sustainably solving' the broad issues that contribute to the problem of (community) food *in*security and food *in*justice. In the context of this study, urban agriculture might thus be understood as a means by which to increase not only access to fresh foods, but also a mechanism to develop critical awareness of social issues related to food and agriculture. Such an understanding may have the potential to create widespread

insistence on social justice related to food, as well as to agricultural production. Such an approach might be oppositional; it might require participatory action research in the emancipatory tradition of Paolo Freire; and it might be revolutionary. In this context, governmental employees (including some Cooperative Extension staff) might not feel empowered to participate in activities that are anathema to the authority of their institution.

Social Actions within a Wider System

Of course, agency and individual actions must be considered within the socio-political context of a given time and place. For instance, Allen et al. found that civil rights (along with environmental concerns) had been a part of the alternative agriculture agenda throughout the 1960s and 70s, when both environment and civil rights were thriving national movements (2003). Civil rights became a lower priority for these initiatives beginning in 1980, after governmental support for farmworker organizing broke down (ibid, 66-67). Allen et al. posited that this shift in focus occurred because many of the AFIs in their study were vulnerable, economically, and that "in the current neoliberal political climate, organizations working in the food system find funding community gardens and CSAs much easier than policy initiatives" (2003, 72).

Government agencies have a different set of constraints than do the non-governmental initiatives studied by Allen et al. However, governmental agencies are clearly neither immune to financial constraints, nor to the need to respond to various sociopolitical pressures. These forces, in addition to more individual-level interests and beliefs, might

prevent agencies from engaging in activities that question the system, leaving non-governmental (and in this study, non-profit) organizations to conduct critically-informed food justice work.

Chapter Conclusion

It is reasonable to believe that each of the four possible explanations discussed here holds some validity in terms of explaining the level of government agencies' versus non-profit organizations' involvement in community garden and/or CFS/FJ/YD urban agriculture operations. To summarize, 1) Urban agriculture may not have been viewed universally as an effective means to deal with urban food insecurity; 2) Municipal agencies in some cities in the study area relied on non-profits to coordinate community garden programs; 3) Several non-profit organizations provided fresh produce in low-income communities where access to this was limited or too expensive, despite the existence of governmental programs designed to increase "access to adequate food;" 4) Some of the non-profit organizations articulated a critique of social structures in the agrifood system by linking urban food production to issues of rights and justice; and government agencies/employees may not have participated directly in these activities because of their political implications.

Following Harvey's comments once again, rather than testing which, if any, of these possibilities had a greater impact on urban agriculture in Alameda County, recognition of the degree to which politics can influence support for various types of urban agriculture might be a more effective step toward problem-solving in this regard. This will be

considered further in the concluding chapter. The next chapter turns to a more detailed geographic analysis of urban agriculture sites in Alameda County, and how spatial patterns may have affected equity in this urban system.

CHAPTER EIGHT

Geography, Demographics, and Equality

This chapter explores a set of relationships between urban agriculture site location and community demographics, with a discussion of how geographic patterns may relate to issues of social equality. While the findings of previous chapters drew from key informant responses, this chapter relies upon maps that were created using U.S. Census data, along with information about the location of operations studied. Urban agriculture sites (rather than operations) are the unit of analysis used this chapter.

Site Distribution throughout the County

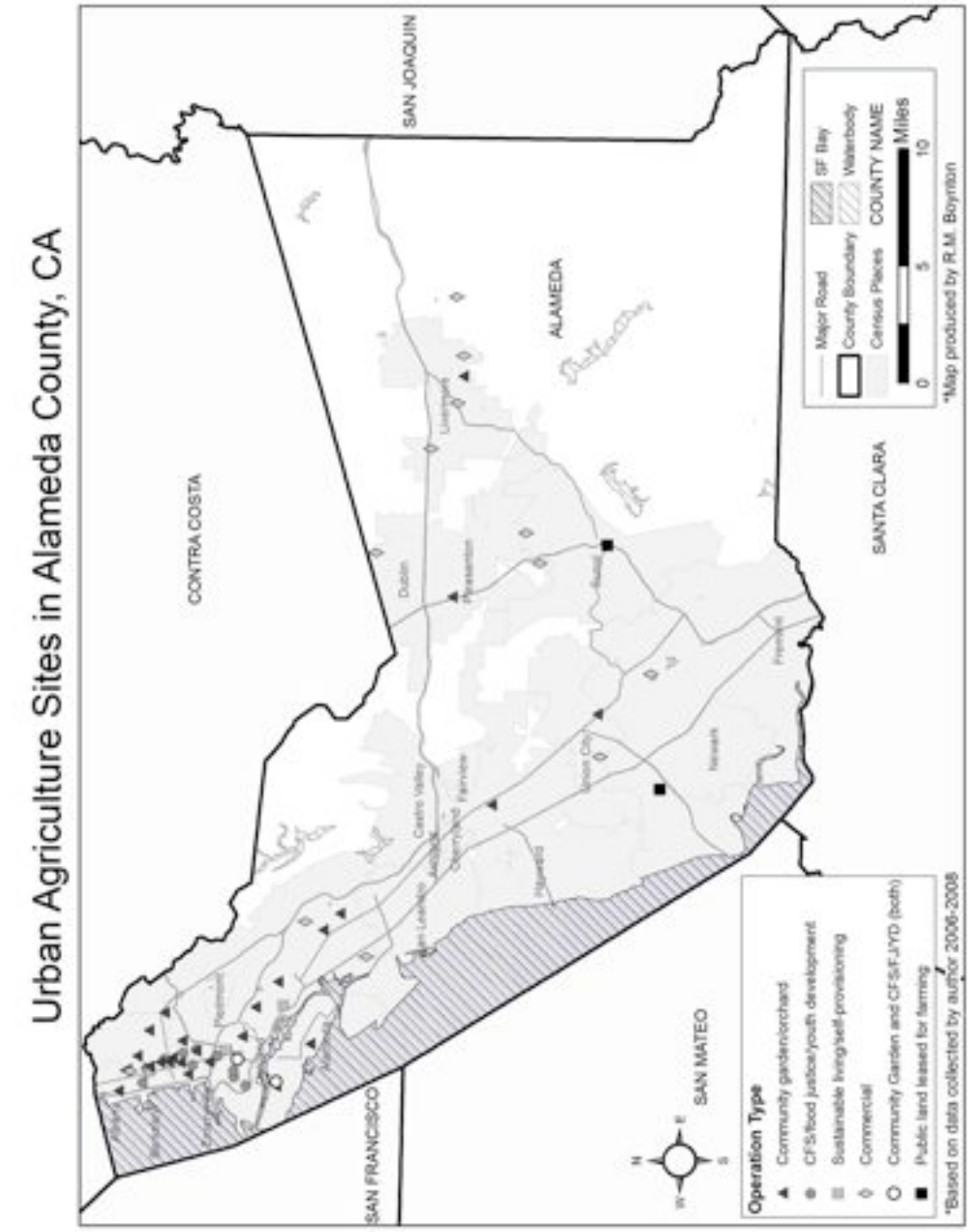
Figure 20 displays the location of the urban agriculture sites by operation type throughout Alameda County. As shown, there were community gardens/orchards in the cities of Alameda, Oakland, and Berkeley, (which had 2, 9, and 12 community gardens/orchards, respectively), as well as Union City, Livermore, and Pleasanton (each of which had one community garden). None of the remaining cities/unincorporated places in the county had community gardens. Nearly all of the CFS/FJ/YD were also located in Berkeley, Oakland, and the City of Alameda. Two of these sites shared land with a community garden.

SLSP sites were located in Berkeley and Oakland, and commercial sites were located throughout Alameda County. However, the majority of the commercial operations were located in the eastern part of the county. As mentioned in chapter 5, public land was

leased to farmers in two cities, and these sites are shown on the map below. The Ardenwood Farm in Fremont was leased by a commercial operation, and parcels at the Sunol AgPark were subleased by two Oakland-based CFS/FJ/YD operations as well as one commercial operation during the time of this study.

Figure 20 on page 145:

“Urban Agriculture Sites in Alameda County.”


Urban Agriculture Sites in Alameda County, CA
CONTRA COSTA
SAN JOAQUIN
ALAMEDA
SANTA CLARA
SAN MATEO
SAN FRANCISCO
Dublin
Pleasanton
Livermore
Castro Valley
Hayward
Union City
Fremont
Newark
Operation Type
Community garden/orchard
CFS/food justice/youth development
Sustainable living/self-provisioning
Commercial
Community Garden and CFS/FJ/YD (both)
Public land leased for farming
*Based on data collected by author 2006-2008
Major Road
County Boundary
Census Places
SF Bay
Waterbody
COUNTY NAME
0
5
10
Miles
*Map produced by R.M. Boynton

Site Distribution and Median Household Income

Although it would be interesting to examine patterns between site location and food insecurity throughout the county, this was not possible because it would have required more refined statistical data on food insecurity than what was available. (Studies have examined food insecurity in parts of Oakland and Hayward, but governmental statistics on food insecurity are only available for the county as a whole.) However, community food security is linked with consumers' ability to afford healthy and culturally acceptable foods. As such, potential relationships between community need and urban agriculture site location were approximated by using household income data at the census tract level.

As seen in Figure 20 above, urban agriculture sites were not distributed equally throughout the county, and patterns between household income level and operation type were also observed. Figure 21 shows that most community gardens/orchards were located in census tracts with median household incomes of $48,000 and below, as were the SLSP sites studied.[27] CFS/FJ/YD sites were located in five general areas of the county: The City of Alameda, West Oakland, North Oakland, West Berkeley and South Berkeley. With the exception of one operation that leased land at the agricultural park in Sunol, all CFS/FJ/YD sites were also located in census tracts with income levels that were below the median for the county, and most were in tracts with incomes below $48,000.[28]

[27] Census data presented on this map and the race/ethnicity map below are from 2000, and updated figures are not available at the tract level. The 2000 data are not accurate for at least one tract due to the presence of a low-income housing community that was established in 2003. Of 500 families residing in the housing community, 99 percent have median household incomes below the federal poverty level.

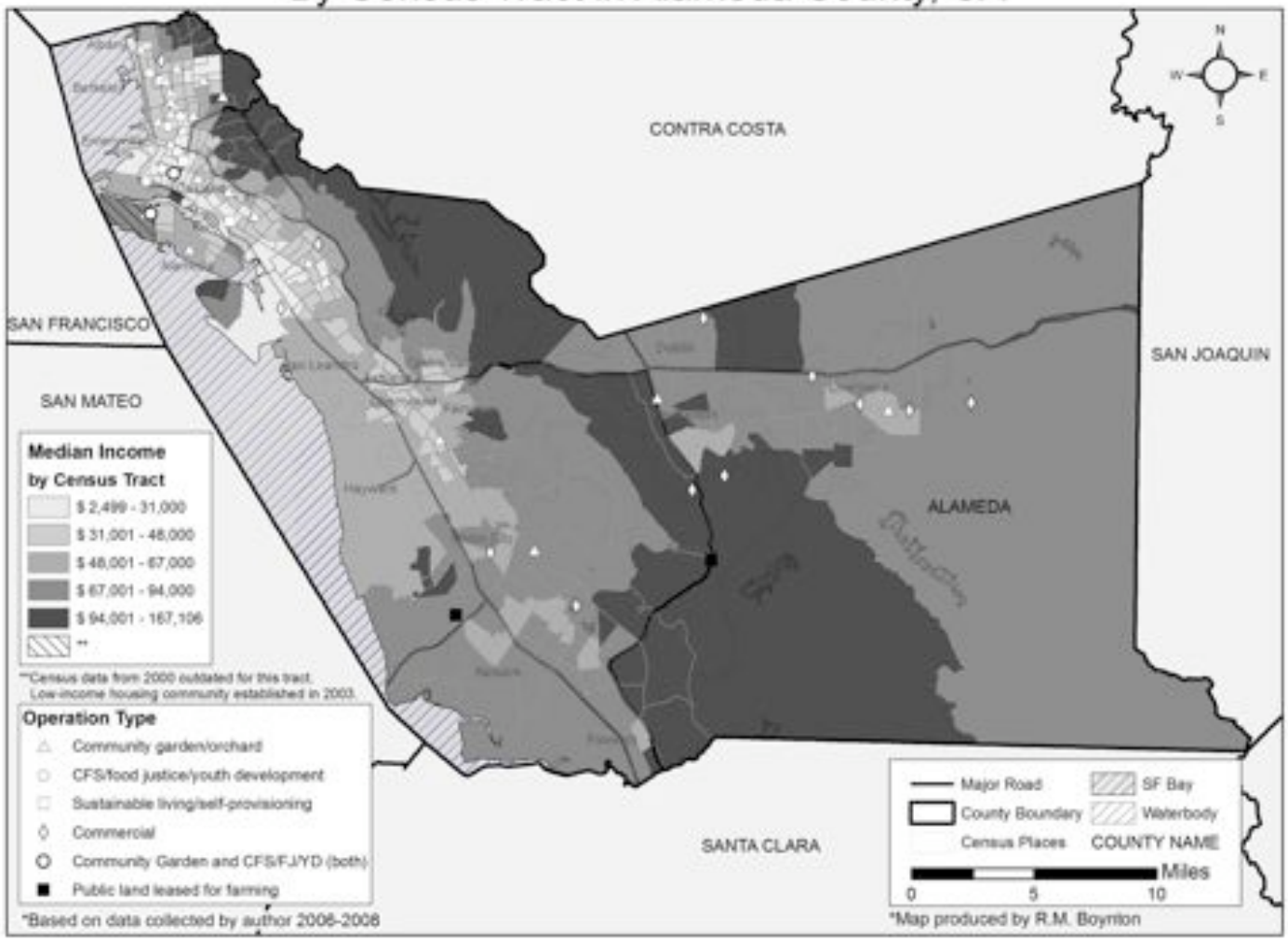
[28] The median household income for the entire county was $57,659 in 2004 (US Census Quickfacts 2006).

At the other end of the spectrum, there were no CFS/FJ/YD sites, and far fewer community gardens in census tracts with the highest median incomes (above $67,000). Conversely, commercial operations, along with the two public land areas that were leased for farming, were concentrated in higher income census tracts.

Figure 21 on page 149:

"Urban Agriculture Sites and Distribution of Median Household Income by Census Tract in Alameda County, CA."

Urban Agriculture Sites and Distribution of Median Household Income By Census Tract in Alameda County, CA



The high incidence of both CFS/FJ/YD and community garden/orchard sites in low-income areas of the county is not surprising. Again, these operations provided access to food and gardening space to urban residents, and many of them specifically emphasized serving lower income communities. However, even among low-income census tracts, discrepancies between the accessibility of community gardens and CFS/FJ/YD sites were observed. As shown in Figure 21 on page 149, there were broad areas in the county that did not have any urban agriculture sites. For example, none of the CFS/FJ/YD sites, and just two of the nine Oakland community garden sites were located in East Oakland, an area with some of the lowest median income levels in the county. The San Leandro/Hayward area was in the lower income ranges as well, and had just one community garden.

Site Distribution and Race/Ethnicity

Past studies have uncovered links between race/ethnicity, access to food, and health issues in Alameda County (Beyers et al. 2008; Farfan-Ramirez n.d.; Farfan-Ramirez and Kelly n.d.; Fuller n.d.; Tsai 2003). Similarly, relationships also appear to have existed between the location of urban agriculture sites and the race/ethnicity of residents in the surrounding community. Figure 22 shows that the majority of both community gardens/orchards and CFS/FJ/YD sites were located in census tracts with a population of at least 57 percent people of color.[29] Conversely, only three of the twenty-eight community garden sites (and none of the CFS/FJ/YD sites) were located in census tracts with under 28 percent people of color (i.e., areas with at least 72 percent "White only"

[29] U.S. Census data is collected for numerous racial/ethnic categories. "People of color" in this map refers to all residents who did *not* report "White only" in the 2000 Census.

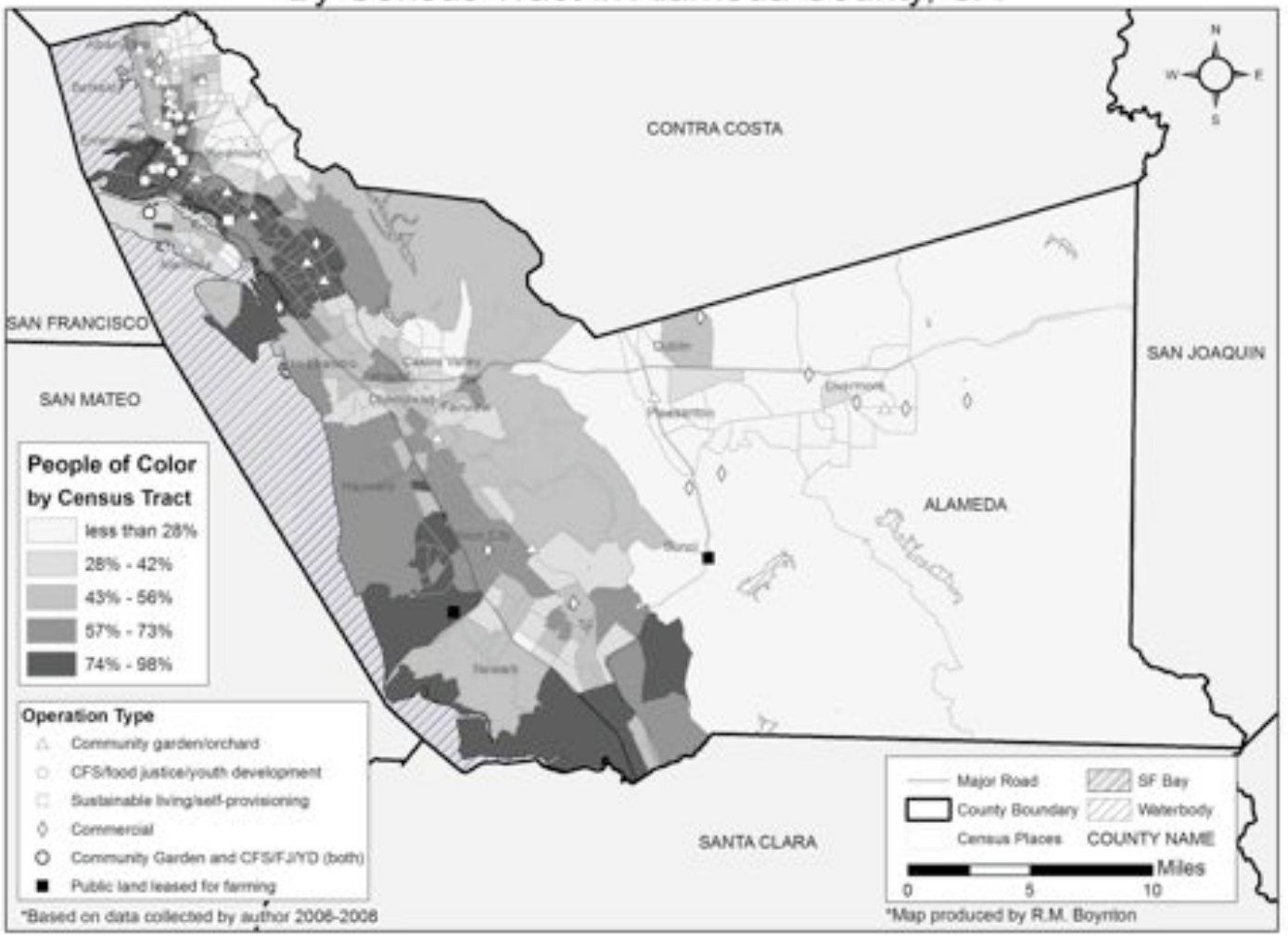
residents).[30] All of the SLSP sites were located in tracts with at least 43 percent people of color. Commercial operations were concentrated in census tracts with the highest percentage of White residents (i.e., less than 28 percent residents of color), although there was at least one commercial operation in each of the census tract categories grouped by racial/ethnic composition.

[30] All census tracts in Alameda County had a population of at least 10 percent people of color.

Figure 22 on page 153:

"Urban Agriculture Sites and Distribution of People of Color by Census Tract in Alameda County, CA."

Urban Agriculture Sites and Distribution of People of Color By Census Tract in Alameda County, CA



*Based on data collected by author 2006-2008

*Map produced by R.M. Boynton

These relationships between urban agriculture type and the racial/ethnic composition of the surrounding community became even more apparent when the non-commercial operations in this study (CG; CFS/FJ/YD; SLSP operations) were grouped together and compared with the commercial operations, as seen in the figures discussed below.

Correlation Between Commercial/Non-Commercial Sites and Community Demographics

Note: The fact that several distinct operations shared land with other operations was important to the following analysis. In these cases, each operation's parcel was considered as a distinct site, even though the "sites" were situated on a contiguous parcel of land.

In order to examine the distribution of commercial and non-commercial operations in predominantly White- versus predominantly of-color communities, census tracts with urban agriculture sites were assigned to quartiles based upon the percentage of people of color in the tract. The number of commercial and non-commercial sites was then tallied for each quartile. This process showed an unequal distribution of both commercial and non-commercial urban agriculture sites vis à vis the demographic variable. As shown in Figure 23, the *total* number of sites increased with the percent population of color in the census tract. The number of *non-commercial* sites was also positively correlated with the percentage of persons of color within census tracts; and the number of *commercial* sites was lower in these areas than in census tracts with higher percentages of White residents. In other words, non-commercial sites tended to be located in communities of color, while commercial sites tended to be located in White communities. (The graph in Figure 24 also depicts these relationships.)

Number of Comercial and Non-Commercial Urban Agriculture Sites in Alameda County Census Tract by Percent Population of Color			
	Number of Sites		
Percent Population of Color in Census Tract*	Non-Commercial	Commercial	Total
<25%	5	7	12
25-50%	11	1	12
51-74%	15	3	18
75-100%	16	3	19
Total Number of Sites	47	14	61
*Calculated as percentage of non-white out of total population reported in the 2000 Census.			
Source: US Census Bureau 2000, www.census.gov.			

Figure 23.

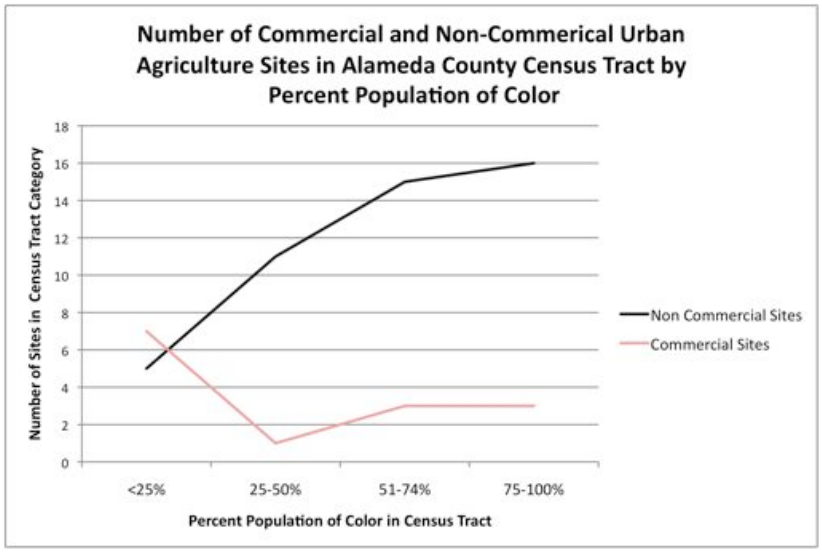


Figure 24.

The correlations between community demographics and operation type (i.e., commercial or non-commercial) have had the potential to reinforce certain social inequalities between communities in Alameda County. Aspects of this are addressed next.

Discussion of Geographic Patterns and Equality

Community and Economic Development. As discussed in previous chapters, economic development is cited as one of the potential benefits of urban agriculture in developing regions of the Global South (Smit et al. 1996; van Veenhuizen 2006), and similar benefits have been identified in the United States. (See Brown 2002; Brown and Carter 2003; Kaufman and Bailkey 2000.) In their 1999 study, Feenstra et al. observed that the community development benefits of entrepreneurial urban gardens generally outweighed their direct economic impact (p 1-33). However, they also found that the gardens "set the stage for improved economic development" in terms of creating "meaningful jobs and improving quality of life for community residents" (ibid).

Clearly, the location of urban agriculture sites would affect the distribution of community and economic development benefits derived from them. That is, more urban agriculture sites, in general, would be likely to translate into more benefits for the surrounding communities. The fact that more of the non-commercial sites in Alameda County were located in low-income and of- color communities suggests that there was potential for urban agriculture to contribute to community and economic development in less advantaged areas. The findings of this study show that this was occurring both directly, (e.g., employment of youth community members; local sales of food produced in the

neighborhood), and indirectly, (through community-building and youth development efforts), in many of the areas with non-commercial urban agriculture operations.

Again, many of these operations used innovative strategies to make low-cost, healthy, and culturally-acceptable foods accessible to urban community members. Strategies included alternative distribution/marketing models (i.e., neighborhood farm stands; low-priced CSAs); flexible pricing structures; and empowering community members to grow their own produce. Many also found ways to keep operating costs at a minimum by relying on community members and volunteers to assist in growing and distributing food. This was an important element of managing these operations, since many had limited budgets, and many relied on grants to fund both program activities and (in some cases) a small number of paid staff positions. This corroborates Feenstra et al.'s finding that entrepreneurial urban gardens in their study were not financially self-sufficient, but that this would not necessarily cause the discontinuation of these projects, since many used grants to support their operations (1999, 28).

Thus, as has been found in past studies, the creative use of community resources enabled many of the non-commercial operations to provide food, skills, and/or gardening opportunities to local residents (Brown 2002; Brown and Carter 2003; Eizenberg 2008; Feenstra et al. 1999; Kaufman and Bailkey 2000) especially in under-privileged communities. These findings again suggest that the concentration of non-commercial urban agriculture operations in certain communities brought the seeds of community and economic development to many low-income and of-color areas of Alameda County.

Despite the very localized arrangements discussed here, however, the scope of urban agriculture's effect on community and economic development may have also been limited by the unequal distribution of sites. While some low-income and of-color communities experienced the benefits of having non-commercial operations in their neighborhoods, others did not. Moreover, the concentration of *commercial* operations in upper income and White communities may have created additional inequalities between these and the less privileged areas, as discussed next.

Equality and Opportunity. Economic inequality between racial/ethnic groups has been well-documented in literature on race and class in the United States. (See Conley 1999; Massey and Denton 1993.) Meanwhile, differences in income levels are all but synonymous with economic inequality. [See Conley 1999].) The concept of "*equality of opportunity*" also holds that "equality would be achieved if each individual in a society enjoyed the right to compete in a contest unimpaired by discrimination of any kind" (Conley 1999, 7). Opportunity in this context refers to things such as jobs, housing, voting rights, and education. It might also refer to food, agricultural land, and access to public services. Moreover, "opportunity" may extend to connections between these elements, such as access to public sector agricultural assistance, including Cooperative Extension services.

As will be discussed in the following chapter, Cooperative Extension farm advisors consulted during this study defined their target clientele as commercial agriculture operators. This suggests that the concentration of commercial sites in upper income and

White communities could, in the end, reinforce *in*equality of opportunity, (i.e., unequal access to assistance with agricultural production), if CE were to expand its program for urban agriculture. That is, prioritization of the commercial agricultural sector could have the potential to funnel technical assistance toward operations located in upper income and White census tracts in Alameda County (because commercial operations were concentrated there), rather than low-income and of-color census tracts, where mainly non-commercial operations were located.

If economic equality and equal access to opportunity are envisaged as part of a socially just agrifood system, this requires that public agencies which purport to have an interest in sustainability address hindrances to this vision. That is, it could be expected that agencies that strive to realize the idealized "three-legged stool" of sustainability (i.e., social, environmental, and economic), would make shifts in their practices to rectify inequalities in the agrifood system. This would include addressing the potential for unequal access to their services.

Such an expectation for equality presumes, of course, that agencies give equal credence to social, environmental, and economic aspects of sustainability. In terms of the USDA in general, it is important to note that the Department has continually been found to have enacted discriminatory practices against African-American, Native American, and Latino farmers.[33] In a sense, these implications suggest that unequal provision of services based on race can be expected from the USDA. Thus, in practice, any expansion of Cooperative

[33] In addition to a class-action discrimination lawsuit filed against USDA in 1997, numerous sources have documented discriminatory and institutionalized racist practices of the Department. (See Myers 2005; MacPherson 2006; Hoffman 2009; Treviño 2009 for examples.)

Extension programs into urban areas would need to not only recognize patterns of inequality and discriminatory practices, but also take active steps to avoid regression to the *status quo* of inequality in the American agrifood system.

Chapter Conclusion

This chapter has examined relationships between urban agriculture site location and the demographics of surrounding communities. It has also suggested several ways in which these relationships may have contributed to inequalities in terms of access to production sites and the potential benefits associated with them. Further, potential relationships between demographic composition of the surrounding communities and the economic sector of the urban agriculture operations were explored. The following chapter expands upon this analysis of technical assistance for urban agriculture with regard to UC DANR/Cooperative Extension programs and their involvement with urban agriculture.

CHAPTER NINE

Urban Agriculture and Cooperative Extension

Practitioner and UC Staff Member Perspectives

The preceding chapters have attended to characteristics and dynamics of urban agriculture within Alameda County. This chapter turns to the action-oriented research objectives of this study, which were to identify main challenges of operations in the study area, and types of assistance that might help urban agriculture operators work more effectively toward their respective goals. It also explores UCCE staff members' perceptions of and experiences with urban agriculture. To this end, the chapter addresses four of the overall research questions for this study:

- (*In addition to identifying goals of urban agricultural operators*), What are the most significant barriers to achieving these goals?
- What experiences have urban agriculture operators had working with UC Cooperative Extension? Do they feel that the extension system could be helpful to them in their efforts, or would it hinder progress toward their respective goals?
- Do Cooperative Extension staff members consulted during the study consider urban food producers a current or future clientele? What is their perception of urban agriculture, more generally?
- In which ways might UCCE most effectively approach urban-focused research and extension?

These questions were addressed through the key informant interviews, as well as surveys and participant observation within UCCE.[34]

[34] The questions posed to various UC DANR staff members are included in the appendices.

Urban Agriculture Operator Perspectives

Main Challenges to Each Operation Type

Key informants were asked to name the main challenges to attaining the goals of their operations, as discussed in chapter 5. Figures 25-28 show the responses of informants in each of four operation types, grouped by main purpose.

a. Community Garden/Orchard Challenges

Main Challenges-Community Gardens/Orchards** n=27		
	Number of Responses	**Percent of Respondents***
Lack of cohesion and sense of community within garden	15	55.6%
Time	8	29.6%
Violence, drugs, theft, vandalism, trash, misuse of garden	6	22.2%
Biophysical-pests, weeds, climate, shade	6	22.2%
Bureaucracy; lack of government, university, city support/services	6	22.2%
Horticultural skills or knowledge of gardeners, youth, or community	3	11.1%
Funding, including start up, expansion, and paying staff	2	7.4%
Land tenure or cost	2	7.4%
Community Relations- support for operation or neighbor's habits	1	3.7%
Lack of ag infrastructure and production resources and labor	1	3.7%
Not included or legitimized as "agriculture" or not valued by public	1	3.7%
Profitability/Staying in Business/Costs of supplies	1	3.7%
Total	**52**	
* Percentages total greater than 100% due to multiple response.		
** n=27 due to one missing response.		

Figure 25.

As shown, in Figure 25, the majority (55.6 percent) of informants from community gardening operations said that the greatest challenge to accomplishing the garden's goals was lack of cohesion and sense of community within the garden. According to informants who indicated this as a challenge, community gardeners did not come together to accomplish common goals (such as weeding paths) even when cooperation was one of the defining philosophies of the garden. As one gardener in Berkeley explained:

> *The apparent goal is to give citizens of Berkeley the opportunity to farm, and to produce vegetables, mainly. Some gardeners plant flowers, but it's not the main purpose of the garden. But there is a second goal, which was the most important goal for [founder] Karl Linn. That was to expand the consciousness of people and what he used to call to 'reclaim the commons'—the concept of improving our relationship as a group of people. The first goal is easily achievable. Everybody wants to have a plot of land to garden, to get some food, to have some nice flowers But learning to relate among themselves, learning to have a sense of the common good, is a more difficult and challenging thought.*

The same respondent went on to explain that the main challenge was

> *to keep the work in communal areas. To develop our sense of community that goes beyond being a good gardener […] to avoid the possessive sense that people always have, that this is a public place and we have a privilege to be here, that we don't have a right. Because this something you confront.*

A coordinator from another garden expressed similar sentiments that the "number one challenge" was the attitude of the gardeners. "They don't band together the way the South L.A. Farm and others did," she explained.[35] She also mentioned racial tension within the garden as an example of the challenges to creating community within the garden. (According to this informant, the membership of this garden was ethnically

[35] As noted in chapter 2, this garden ended with a standoff and an intense legal battle waged between gardeners, the landowner, and the City of Los Angeles.

diverse and included mostly Mexican, but also Caucasian, West African, Japanese, and Afghani gardeners.) The fact that half of the informants mentioned community relationships within the garden as one of the main challenges demonstrates that there were both differing concepts of, and different levels of interest in, community aspects of the gardens studied.

Community garden plot with nopales.

The second most frequently mentioned challenge was lack of time, which informants mainly attributed to gardeners' busy lifestyles (i.e., work, school, family). As is typical in community gardens, gardeners were not paid to grow food or non-edible products, which meant that their work in the garden was done in their spare time. This factor likely contributed to the lack of participation in some of the community building aspects discussed above.

Twenty-two percent of the CG informants cited misuse of the garden (e.g., using the garden space for drinking or drug use/sales), vandalism, and/or theft of garden produce, as well as street violence in the surrounding neighborhood as main challenges. Most gardens did not have major theft problems, and when theft was cited as a challenge, it was generally regarded as an annoyance (though certainly disheartening for tomato and pumpkin growers who had watched their crop mature, only to see it stolen or smashed just before harvest). Gardeners dealt with vandalism in various ways. In many cases, the vandalism and produce theft had been inflicted by youth in the neighborhood, especially during summer months when school was not in session. Gardeners reported having made efforts to engage youth in the garden as way to deal with vandalism and theft. They had also tried speaking with neighborhood parents and offering to work with youth to have their own plot in the garden. Several informants had invited adult passers-by to harvest produce for their own consumption, and/or to join the garden and have their own plot. In some cases these efforts to garner neighborhood support had been effective, and in other cases gardeners had just adapted to a certain level of produce and property loss.

A more serious issue related to personal safety was that some community gardeners (particularly women) felt that the garden was not a safe place. One female gardener had been warned by the garden coordinator not to come to the garden during "twilight," which this gardener found constraining, especially during winter months. Another informant mentioned an incident when a human corpse was found in one of the gardens that he coordinated. Clearly, these instances reflected the urban social issues beyond the confines of the garden sites. Nonetheless, concerns about personal safety were constraining in terms of the ability of gardeners' access to the community garden.

Pest/weed management, etc. were mentioned as a main challenge by 22 percent of community gardeners, and horticultural skills were mentioned by 11 percent. The fact that these horticultural issues were mentioned less than half as frequently as community relations issues suggests that gardeners either had the skills, experience, and information needed to accomplish their *individual* gardening goals, or that horticultural information and assistance was already available. (This was likely related to the fact that many of the community gardens had received assistance from Cooperative Extension in the past, as will be discussed in later in this chapter.)

Twenty-two percent of community garden informants thought that local institutions (such as municipal parks departments and/or the University of California, as applicable) were not as supportive as they could have been. Although some informants thought that the city was "very supportive," others expressed frustration with not having received timely

responses to their requests for city services, such as tree trimming around city-owned garden sites, or mowing at one garden with a mainly elderly membership. Informants whose gardens were on UC Berkeley property each related information about the university not having supported the continuation of the garden.

b. CFS/FY/YD Operation Challenges

Main Challenges - CFS/FJ/YD Operations n=6		
	Number of Responses	**Percent of Respondents***
Funding, including start up, expansion, and paying staff	4	66.7%
Managing farm, business, or organization and disparate tasks	4	66.7%
Horticultural skills or knowledge of gardeners, youth, or community	3	50.0%
Violence, drugs, theft, vandalism, trash, misuse of garden	2	33.3%
Community Relations- support for operation or neighbor's habits	2	33.3%
Not included or legitimized as "agriculture" or not valued by public	2	33.3%
Time	1	16.7%
Lack of cohesion and sense of community within garden	1	16.7%
Lack of ag infrastructure and production resources and labor	1	16.7%
Total	**20**	
* Percentages total greater than 100% due to multiple response.		

Figure 26.

Two challenges were mentioned most frequently by CFS/FJ/YD respondents, as shown in Figure 26. These were: funding, (especially for starting/expanding production, and paying staff); and managing a farm business operation with many disparate tasks, including management of various activities conducted by these operations that were not

directly related to food production (e.g., youth services; fundraising.) Both of these challenges have also been documented in past studies of entrepreneurial urban gardens (Feenstra et al. 1999; Kaufman and Bailkey 2000; Lawson and McNally 1998).

Given that all of the CFS/FJ/YD operations were managed by non-profit organizations, it is not surprising that funding was one of the most significant challenges mentioned by key informants. Related to the challenges of balancing agricultural production with other responsibilities, some of the CFS/FJ/YD managers had little experience with production-scale agriculture. Planning production for community distribution and/or sales required technical knowledge such as how to manage successional plantings and crop rotations for consistent harvests. Several informants mentioned a need to "scale-up" their own horticultural experiences from a small-garden scale to a larger land area (from 200 square feet to one acre, for example), and discussed having learned these farm management skills at the same time that they implemented them. One respondent described this situation as wearing "both hats, learning and doing at the same time." Two respondents also mentioned feeling that their operations fell somewhere between smaller-scale gardening and the type of agrifood systems work in which they were engaged. As one explained:

> *For us, we're like in the no-man's land between small farmers and gardeners. We're really trying to produce […] on a larger scale using those types of methods, but [we] don't have all the skills and knowledge around that. [We] have never started it from the ground up.*

In addition to farm management skills, half of the informants from the CFS/FJ/YD operations mentioned horticultural skills as a challenge. (This was understood as being

distinct from the farm management challenges because it included only horticultural issues such as plant health and soil fertility, and not the farm management issues described above.) Lack of horticultural skills/experience was a challenge mentioned mainly by informants who worked with youth. This challenge pertained mainly to the youths' limited gardening experience, whereas the adult staff members did have these skills. Rather than viewing this as wholly problematic, however, these informants reiterated that youth development was one of the main goals of their urban agriculture operation; youth participants were there *in order to* gain these and other skills. Still, in terms of production efficiency, having a field staff with limited horticultural experience was a seen as challenge to producing food for target communities.

c. SLSP Operation Challenges

Main Challenges - SLSP Operations n=3		
	Number of Responses	**Percent of Respondents***
Time	2	66.7%
Land tenure or cost	2	66.7%
Community Relations- support for operation or neighbor's habits	1	33.3%
Horticultural skills or knowledge of gardeners, youth, or community	1	33.3%
Total	**6**	
* Percentages total greater than 100% due to multiple response.		

Figure 27.

Time and land tenure were mentioned as the greatest challenges for the SLSP respondents, two-thirds of whom cited each issue, as shown in Figure 27. Time as a limiting factor was related to the fact that the operators of each site held one or more jobs

that were not a part of their food production activities. As for land tenure, each of the operations had a different situation, so no clear pattern emerged.

d. Commercial Operation Challenges

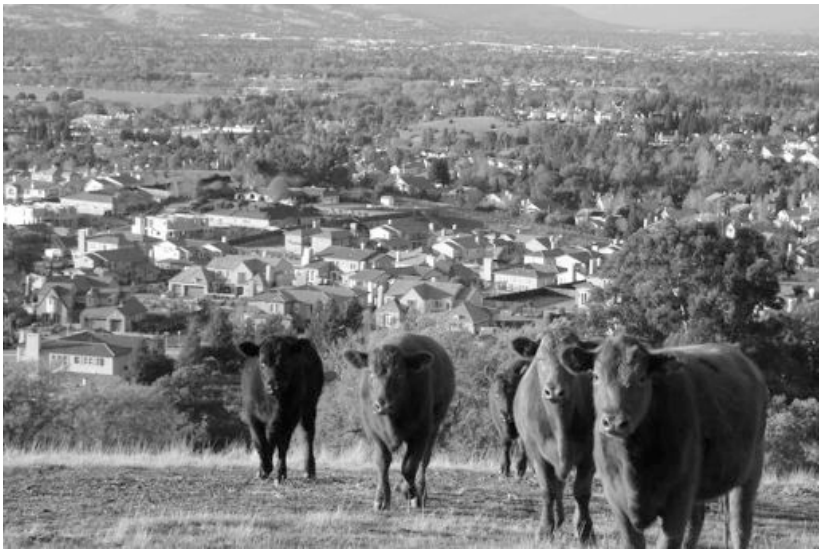
Main Challenges - Commercial Operations n=15		
	Number of Responses	**Percent of Respondents***
Managing farm, business, or organization and disparate tasks	5	33.3%
Profitability/staying in business/costs of supplies	5	33.3%
Funding, including start up, expansion, and paying staff	3	20.0%
Biophysical-pests, weeds, climate, shade	3	20.0%
Bureaucracy; lack of government, university, or city support/services	3	20.0%
Community Relations- support for operation or neighbor's habits	2	13.3%
Lack of ag infrastructure and production resources and labor	2	13.3%
Time	1	6.7%
Not included or legitimized as "agriculture" or not valued by public	1	6.7%
Total	**25**	
* Percentages total greater than 100% due to multiple response.		

Figure 28.

As shown in Figure 28, the two main challenges cited most frequently by commercial operations were: a) farm management, including business management; and b) the costs

of farming supplies and related effects on profitability/financial sustainability. Each of these challenges was mentioned by one-third of the commercial operators.

Two challenges mentioned by commercial operators related more specifically to being located in an urban area. These were lack of governmental support for agriculture and lack of an agricultural infrastructure, including agricultural workers and production inputs such as animal feed and equipment supply/repair services. One seasoned operator expressed a feeling about the unavailability of labor, stating that "you can't get it for love nor money." Several operators also discussed not having a support network of agriculturally-related businesses or other nearby operators with whom they could discuss management issues.



Beef cattle at the urban edge in eastern Alameda County.

Regarding the governmental support for agriculture, one ranch operator recounted his experience with the regional park district. "It's all parks in the East Bay, which are

breeding grounds for predators." he explained,"[I] went to the parks division and said 'What are you doing about predator control?' and they laughed at me." He reported having tried using buried fences to exclude coyotes, and had also attempted to protect his herd by patrolling for predation. This informant concluded his comments on this topic by asking: "Ever tried staying up all night, dead still, staked out on a cold winter's night? For three nights in a row…after the third night, you're a zombie. And then you have to do all this work in the daytime." This informant had ended up having to reduce the size of his herd because of wildlife predation issues. His experience with the parks district exemplifies the types socially driven challenges faced by small-scale commercial operators in this study whose operations were located at the edge of a city. These findings concur with other studies on the challenges of small-scale farming in general, and farming at the edge of urban development (Esseks et al. 2008; Heimlich and Anderson 2001; Sokolow 1996; USDA 1998).

Housing development with vineyards in eastern Alameda County.

Summary of Challenges

This section has discussed the main challenges experienced by urban agriculture operations in this study. Two summarizing points are as follows:

- The main challenges varied between operations, based upon their main purpose.
- Some of the challenges cited by informants were tied to urban/social issues such as street violence and vandalism. Other challenges were more specifically procedural and included horticultural/agricultural production techniques as well as community development. A third type of challenge related to conflicts between agricultural and non-agricultural communities. While challenges related to urban social issues may be beyond the scope of providing assistance to urban agriculture specifically, assistance on procedural and community relationship building could be developed by agencies in governmental, social service and educational sectors.

The following section builds upon this data about main challenges and turns to key informant responses about information and assistance needs.

Information and Assistance Needs of Each Operation Type

Key informants were asked to identify information or assistance that was not (to their knowledge) available, and that would help them achieve their operation's goals. As with the tables in the previous section, Figures 29-32 show responses from each of the four operation types.

a. Community Garden/Orchard Information/Assistance Needs

Information/Assistance Needs Community Gardens/Orchards n=28		
	Number of Responses	**Percent of Respondents***
None needed	12	42.9%
Networking or collective work	7	25.0%
Gardening info	4	14.3%
Soil testing or contamination info	3	10.7%
Production or distribution resources	2	7.1%
Farm business management	2	7.1%
City services	1	3.6%
Funds or staff	1	3.6%
Compilation or where to find info	1	3.6%
Total	**33**	
* Percentages total greater than 100% due to multiple response.		

Figure 29.

Figure 29 shows that 42.9 percent of the community garden respondents said that no additional information or assistance was needed to help their operation achieve its main goals. Twenty-five percent said that assistance with networking among gardeners and collective work within the garden was needed. (It is interesting that although 1/2 of the respondents mentioned this as a *challenge*, only ¼ indicated needing *assistance* in this area.) Still, this was mentioned more than any other type of assistance or informational need. Gardening and soil testing information were mentioned as information/assistance needs by 14.3 and 10.7 percent of informants (respectively)[36]. In a separate line of questioning, many of the informants reported getting horticultural and soil testing

[36] The issue of soil testing is important, especially due to the history of some of the urban sites in this study, which were located on formerly industrial sites in West Oakland and Alameda.

information from the Internet and books, as well as the Master Gardener Program. This likely explains the high percentage of informants who did not indicate needing additional information or assistance overall, or on horticultural topics more specifically.

b. CFS/FJ/YD Operation Information/Assistance Needs

Information/Assistance Needs- CFS/FJ/YD Operations n=6		
	Number of Responses	**Percent of Respondents***
Extension or technical research assistance	2	33.3%
Funds or staff	2	33.3%
Compilation or where to find info	2	33.3%
Production or distribution resources	1	16.7%
Gardening info	1	16.7%
Soil testing or contamination info	1	16.7%
Total	**9**	
* Percentages total greater than 100% due to multiple response.		

Figure 30.

Key informants from CFS/FJ/YD operations cited three information and assistance needs equally: a) extension/technical research assistance (beyond gardening information); b) funds/staff; and c) compilation of information about urban agricultural practices. One-third of respondents in this category mentioned each of these, as shown in Figure 30.

The challenges of "scaling-up" small garden skills to market gardening that were mentioned by CFS/FJ/YD informants were reiterated as information/assistance needs. For instance, one project coordinator explained what would help her operation be more successful:

> *Something like a "small, small farm consultant," or a "large garden consultant," or an "urban farm consultant" would be really, really helpful. Someone who just kind of came around and, you know, spent a few hours every other month, […] checking in, helping you do some farm planning, […] doing a site visit, [asking] 'Ok, why did you decide to plant the things like that? Maybe you wanna try doing it like this the next time. Wow, you guys are a week late getting those greens in the ground, you better do that. Have you ordered your potatoes?" You know, just basic things like that to check in and help with some of those things that are really easy to forget when you're managing [many aspects]… Production is just a part of what I do [and] there's a lot of literature out there, but I don't learn by reading.*

Another respondent explained her view that Cooperative Extension and other governmental agencies should do more to assist urban agriculture operators:

> *Through collaborative system of agricultural support in the United States, urban areas are shut out. Farm subsidies for urban agriculture [would be helpful]. Extension, government offices, a city department of food… The Extension service at the county level should have programs for urban agriculture, and cities should have a department of agriculture; a department of food.*

Funds and staff were also mentioned as one of the top assistance needs of CFS/FJ/YD operations, as was compilation of information about urban agriculture. One respondent explained that "there is a lot of information, but it's hard to get because it's time consuming." The same respondent noted that compilation of information would be very useful, and also pointed out that "not everyone is online, or uses Internet, or can download and print documents- especially seniors who are not as familiar with computers. Having hard copies and flyers, would be good for them."

c. Sustainable Living, Self-Provisioning Operation Information/Assistance Needs

Information and Assistance Needs - SLSP Operations n=3		
	Number of Responses	**Percent of Respondents***
Gardening info	1	33.3%
Extension or technical research assistance	1	33.3%
None needed	1	33.3%
Total	**3**	
* Percentages total greater than 100% due to multiple response.		

Figure 31.

As shown in Figure 31, SLSP informants mentioned only two areas of information/assistance. One informant needed gardening information, and another SLSP operator reiterated the need for an urban farm consultant. This informant explained that she and other urban farmers that she knew spent a lot of time meeting with others in the area who wanted to learn about various urban farming activities, including urban livestock husbandry and gardening. She explained that an urban agriculture extension agent would be very useful because "hundreds of people are getting backyard chickens and they need support, they're confused." She went on to explain her own interest in having more technical support for raising goats: "I know there's books, but I need a person to tell me what to do. So that would be really nice if there was an urban farming extension agent […] That would be awesome. That would be real nice."

d. Commercial Operation Information/Assistance Needs

Information/Assistance Needs - Commercial Operations n=15		
	Number of Responses	**Percent of Respondents***
None needed	11	73.3%
Farm business management	2	13.3%
Production or distribution resources	1	6.7%
Extension or technical research assistance	1	6.7%
Total	**15**	
* Percentages total greater than 100% due to multiple response.		

Figure 32.

Three-fourths of the commercial operators stated that no additional information or assistance was needed (Figure 32). Several respondents, especially younger operators, indicated that they knew where to find information through the Internet or other resources, and had personal connections that would assist them if need be. Others, who had managed their operations for many years, indicated that they relied upon their experience in making management decisions.

Two of the fifteen commercial operators indicated that farm business management would be useful to them. One such operator explained that producing in an urban area meant that he did not have connections with other producers or information that would help him manage the business side of his farm. “Probably if I was in a different area, and I was closer to other farmers and other people, I could […] find that stuff out,” he explained, “We’re kind of an island out here…so we’re kind of out of the loop on a lot of things.”

Another operator indicated that although he had sufficient information about production and business management, more research and extension personnel were needed "to buffet resistance to agriculture" in the area. This operator shared his views about Cooperative Extension services: "Unfortunately because there's less, they give us less help. It's working in reverse. We need more [help] to educate the urban people, and we're not gettin' it from extension. They've cut out the personnel [but] people take food for granted in this country."

Thus, commercial operators in this study seemed to feel, for the most part, that the information they needed to meet their operation's production and business management goals were available. Some informants felt that more assistance could be offered, particularly in helping producers deal with the pressures of farmland preservation and consumer education.

Summary of Information/Assistance Needs

The following three points summarize information/assistance needs discussed by key informants.

- As with challenges, information/assistance needs varied by operation type.
- Many informants, especially commercial operators and community gardeners, indicated that they did not need any additional information or assistance. This was an important finding since, although an assumption of this research was that increased technical support for urban agriculture was needed, not all operators felt that they needed more information or assistance.

- Some informants cited a need for information or assistance that is actually available publicly. This suggests that operators were either not aware of existing programs or where to access information, and/or that additional assistance was needed in certain areas, including building non-farmer support for urban edge agriculture.

Urban Agriculture Operators' Past Work with UC Extension Programs

In order to gain additional perspective about the need to increase Cooperative Extension programming for urban agriculture, key informants were asked if they/their operations had worked with or received information from three relevant DANR programs. Responses about past experience with UCCE in general, the Master Gardener Program, and the Small Farm Program are reported in this section.

a. Work with Cooperative Extension

As has been found in previous studies, awareness of Cooperative Extension programs can be limited in urban areas (Borich 2001; Fehlis 1992; Krofta and Panshin 1989). This was also the case in Alameda County; many of the key informants were not familiar with the UCCE system, and several individuals confused Cooperative Extension with the Alameda County Agricultural Commissioner. As such, responses about past work with UCCE in general did not yield reliable data, apart from an observation about informants' lack of awareness of the Cooperative Extension system. More outreach in urban areas would be one way to increase awareness of CE's existing programs and services among urban residents.

b. Work with Master Gardener Program

Figure 33 shows the percentage of respondents who had worked with the Master Gardener Program. Thirty-three percent of all respondents had worked with the program, yet only one-fourth of the community garden respondents and half of the CFS/FJ/YD respondents indicated that their operation had received information or assistance from MGP. Two-thirds of the SLSP respondents and about one-third of the commercial operations had also received information/assistance from Master Gardener volunteers.

It is interesting that a greater percentage of commercial operators than community garden and SLSP operators had worked with the MGP, since the mission of the MGP is "to extend research based knowledge and information on *home horticulture/pest management* issues to the residents of California" (emphasis added) (Geisel and Feathers n.d.). At least two factors may have led to this finding. First, commercial operations were potentially more aware of the Cooperative Extension system in general. Second, some commercial operators needed technical assistance, but there were no horticulture or livestock advisors based in Alameda County. This may have led them to seek information from the Alameda County MGP as well as from livestock and horticulture (farm) advisors from other counties.

Past Work with Master Gardener Program by Main Purpose of Operation

		Worked with MG in Alameda County?		
		no	yes	Total
Community Garden/Orchard	Count	21	7	28
	%	75.0%	25.0%	100.0%
CFS, Food Justice, Youth Development	Count	3	3	6
	%	50.0%	50.0%	100.0%
Sustainable Living/Self-provisioning	Count	1	2	3
	%	33.3%	66.7%	100.0%
Commercial Operation	Count	9	5	14
	%	64.3%	35.7%	100.0%
Total	Count	34	17	51
	%	66.7%	33.3%	100.0%

Figure 33.

c. Work with Small Farm Program.

As shown in Figure 34, one-third of the commercial operators reported having worked with or received information from the Small Farm Program. None of the sustainable living, and one of the community garden respondents had received info from the program. One-third of the CFS/FJ/YD operators had worked with or received information from SFP.[37]

Past Work with UC Small Farm Program by Main Purpose of Operation

		Worked with SFP in Alameda County?		
		no	yes	Total
Community Garden/Orchard	Count	27	1	28
	%	96.4%	3.6%	100.0%
CFS, Food Justice, Youth Development	Count	4	2	6
	%	66.7%	33.3%	100.0%
Sustainable Living/Self-provisioning	Count	3	0	3
	%	100.0%	.0%	100.0%
Commercial Operation	Count	9	5	14
	%	64.3%	35.7%	100.0%
Total	Count	43	8	51
	%	84.3%	15.7%	100.0%

Figure 34.

[37] The five SFP advisors work in various regions throughout California, but there are no SFP advisors in Alameda County. Many operators in this study had accessed information from the SFP website.

An equal percentage of commercial operators (35 percent) had worked with SFP as with the Master Gardener Program (see above), and one-third of the CFS/FJ/YD operations had received information or assistance from SFP. It is likely that the fact that there were no Small Farm or general farm advisors in Alameda County may have caused commercial operators to seek horticultural advice from the Alameda County MGP.

Summary of Operators' Work with DANR Programs/Cooperative Extension

Three points summarize the responses on this topic:

- Many informants were unaware of Cooperative Extension or confused CE with other governmental agencies.
- While about one-third of respondents overall had worked with the Master Gardener Program, a greater percentage of commercial operators than community gardeners had consulted MGP. This was surprising since the Master Gardener Program is aimed at a non-commercial clientele, but it may be partially explained by the fact that there are no farm advisors based in Alameda County.

One-third of both commercial operations and CFS/FJ/YD operations had sought information from the Small Farm Program. As with point 2, the fact that there were no farm advisors or SFP representatives in the study area likely influenced this finding.

Action Recommendations for Assisting Urban Agriculture Operators Through CE Derived from Key Informant Reponses

In light of the information provided by urban agriculture operators in this study, several recommendations can be made regarding the expansion of Cooperative Extension

assistance in Alameda County and beyond. These recommendations are as follows.

1. *More outreach through existing UCCE programs* (including county offices, MGP, and SFP) would help inform urban agriculture operators about the types of information already available through UCCE, including many of the topics mentioned by informants. UCCE could also make information about other sources of assistance available through websites as well as printed, audio, and/or video materials, or in-person.

2. *Technical assistance for community market farms/gardens* would be useful, especially for those operators who are new to this type of small-scale production in an urban setting. Many of the operators in this study who were interested in urban market gardens were focused on CFS/FJ/YD, but it is likely that others would access this type of program. Some of this information could be compiled from existing sources, and other information might need to be developed through the regular CE methodology (i.e., applied research.) Particularly useful topics include whole farm management, successional plantings for consistent community distribution, livestock husbandry, and soil testing/mitigating the effects of soil contamination. In-person consultations would also be useful to urban operations focused on growing a significant quantity of food, including animal products as well as produce.

3. *Additional assistance for in-home urban agriculture* would also be useful. In this study, the only home gardeners/urban homesteaders consulted were the SLSP

operators, but it is likely that this type assistance would be helpful to other backyard gardeners, etc. Useful information might include assistance learning about urban livestock husbandry techniques, regulations pertaining to specific livestock species, and soil testing/contamination. This could either be added to the Master Gardener- or other relevant programs, or it could be developed separately.

4. *Assistance with community development/community building* would be particularly useful for community gardeners. Community gardens might benefit from information about developing rapport between gardeners and the community surrounding the garden site. The community within the garden might also develop more strongly with assistance on this topic. Again, this could be added to the services that the MGP already provides, or created as a new program at a county or regional level.

5. *Advocacy for the small-scale farming/ranching sector in urban areas* would help operators manage conflicts between agricultural, residential, and recreational land uses near cities. Although the word "advocacy" may raise red flags within the CE system, which is supposed to be neutral and non-preferential, this recommendation puts emphasis on advocating for the small farm sector (not individual farmers themselves). Because this type of support for small-scale farmers is implicit within the existing mission of the Small Farm Program, this recommendation pertains mainly to expanding existing services to urban areas, and is supported by both the findings of this research, and studies on farming at the urban edge. (See Esseks et al. 2008.)

As a final note, the capacity to provide research-based information on many of the topics cited here exists among the various 'experts' in the CE system, but the information has not recently been assembled in an easily accessible format. This suggests an opportunity for future development. These points will be discussed further in the concluding chapter.

Perspectives from within UCCE and SFP

The section above discussed challenges, information, and assistance needs expressed by informants from the four types of urban agriculture operations described throughout this dissertation. This section turns to a different data source and discusses UC DANR/CE staff member perspectives about providing support to urban agriculture operators. This information is drawn from questions posed of staff members, as well as participant observation from within the Small Farm Program. Two of the five study questions addressed through this part of the research process were:

- What is the perception of urban agriculture among UCCE/DANR staff members?
- What types of activities have UCCE/DANR staff members conducted with urban farmers and gardeners?

Perceptions of Urban Agriculture

Observations and correspondence with farm advisors and other Small Farm Workgroup members uncovered four important points about perceptions of urban agriculture. These related to defining urban agriculture and how farm advisors identified their clientele.

Definition of urban agriculture. Various definitions and interpretations of urban agriculture have been discussed throughout this dissertation. Again, most U.S. literature on urban agriculture draws from the international development definitions cited in chapter one, which conceptualize urban agriculture as that which is located in and near cities, and/or integrated into the urban social and ecological system. The international definitions are often contextualized through case studies in the U.S. literature, which has helped create a common understanding among advocates and social scientists (including some agrifood systems scholars) about what is meant by the term "urban agriculture." However, while a case-by-case approach seems to have created a meaningful working definition of urban agriculture within the movement, definitions based on location or urban metabolism-type theories were not as useful in communicating with farm advisors and CE staff members in this study.

Over the course of the study, several SFP advisors and other Small Farm Workgroup members indicated a lack of clarity about the term "urban agriculture," despite the fact that facilitated discussions often began with an overview of the topic, including the definition cited in chapter 1.

For instance, one farm advisor wrote in an email:

> *To be honest, I still have trouble with the definitions—'Urban'[is] agriculture within the city boundaries; 'peri' [is] just on the edges and outside the city. But where do you draw the line between rural and peri?? And is one more commercial (Peri) and the other community garden (Urban)? I don't think so. In the context of our jobs both are commercial to me. I used to just call it all 'commercial farming on the urban-rural interface.'*

Several farm advisors also mentioned that if defined at the county level most of their

clientele would be considered urban producers.[38] This sentiment was explained in an email from another advisor:

> *I would say that the majority of farmers I work with (>80%) are strongly influenced by the ag-urban interface and would have major concerns over most, if not all, of the areas mentioned [as challenges facing urban agriculture] (i.e. closeness to markets, high competition for land, limited space, use of urban resources, low degree of farmer organization, mainly perishable products.) Essentially all of [Southern California] West of Riverside, as well as all of the coast, as well as a solid wide band from San Bernardino thru Bakersfield, Fresno and then [Northern San Joaquin Valley.] There would only be pockets of areas that would be NON urban or peri-urban by the definition here.*

Other advisors echoed this perspective. For example, one advisor stated that "most of the growers in the [area] could be considered peri-urban, as they farm within [the city's] sphere of influence."

Part of advisors' confusion and frustration about the cited definition of urban agriculture may have been caused by an incongruency between the terminology used by the USDA on one hand, and that which is used by the urban agriculture movement on the other. This may have been problematic for two reasons. First, Cooperative Extension programs often rely upon USDA information to devise their research and outreach programs. This means that CE staff members are ideologically grounded in the USDA framework, possibly rendering alternative conceptualizations of agriculture and of urban areas ambiguous or unrealistic. Second, USDA is the authoritative source of national agricultural statistics, including statistics that have been used in urban agriculture literature to demonstrate trends in the U.S. agrifood system. As explained in chapter 1, USDA statistics on the percentage of urban vegetable production have been used to illustrate the importance of

[38] The county is the geographic unit used in USDA statistics as well as its programs, including UCCE. Advisors typically have the responsibility to conduct outreach in one or more entire counties.

urban agriculture to the national agricultural system (Allen 2004; Smit et al. 1996). However, another closer look at the USDA data tends to weaken the use of such statistics as proof that "urban agriculture" (as conceptualized by the U.A. movement) comprises a significant portion of the U.S. agricultural economy.

According to the USDA ERS, 61 percent of U.S. *vegetable production* (by economic value) is located in metropolitan counties (Heimlich and Anderson 2001, 4). However, as discussed in chapter 1, the meaning of a "metropolitan county" is complex, and can include what the USDA refers to as "metropolitan rural areas." Moreover, the above statistic does not itself specify that in 2001, seven of the top ten vegetable-producing counties in the nation were located in California, a state with a high concentration of urban counties (ibid, 41). As shown on the map below, over half of California counties were classified as what USDA has termed "metro edge" or "metro core" by 1990, and it is likely that those counties have only become more urban over time. Thus, it appears that the national statistics on vegetable production appear to be weighted toward urban areas because of the economic importance of California's produce industry. This is illustrative of the dilemma of multiple ways that urban/metropolitan areas are construed, and this is particularly extreme in California. Again, as farm advisors pointed out, most agriculture in the state could be considered "urban" within the USDA/CE framework.

Overall, it seems likely that incongruent terminology could hinder advocates' efforts to increase the Extension services available to urban agriculture operators, particularly in California. As a case in point, this study was undertaken within the Small Farm Program

as a needs assessment that might lead to future urban agriculture programming. The assessment did not result in a collaborative effort to develop relevant extension programs. Instead, much of the dialogue that occurred among CE staff members during the two-year study process centered on how urban agriculture was defined. Thus, developing a common working definition that could be used by both USDA/CE programs and urban agriculture advocates might be a useful step toward planning for future assistance for urban agriculture in California and beyond.

Identifying and Working with Clientele. Just as farm advisors did not conceptualize agriculture itself as "urban" or "non-urban," several advisors reiterated that they did not identify their target clientele based upon location (i.e., whether they produced in urban or rural areas). Rather, several advisors distinguished between commercial and non-commercial operators, explaining that they viewed small-scale commercial producers as their target clientele. They tended to direct non-commercial operators (i.e., home and backyard gardeners) to the Master Gardener Program for assistance.

The distinction between commercial and non-commercial operations is a key finding in terms of expanding agricultural extension services to reach more urban operators, since, as seen in this study, not all urban agriculture practitioners are involved in the commercial sector. Again, farm advisors in this study generally referred non-commercial urban agriculture practitioners to the Master Gardener Program for advice. That MGP volunteers are trained only in home horticulture and pest management, suggests that assistance on topics such as livestock husbandry, expanding food production from

personal gardening to (community) market gardening, or community development would not be available to non-commercial urban agriculture operators. This can be interpreted as a lack of sufficient assistance for non-commercial operators, generally. Moreover, as discussed in the preceding chapters, commercial operations in this study were concentrated in White communities, which, hypothetically, may have effectively funneled agricultural assistance away from of-color communities. (This interpretation is admittedly limited due to the absence of farm advisors in this county.)

Work with Urban Agriculture

Farm Advisors' and UCCE Staff Members' Past Work with Urban Agriculture. Despite the distinction made between commercial versus non-commercial operations, many of the farm advisors and Small Farm Workgroup members consulted during this study had in fact provided assistance to non-commercial farmers and gardeners in the past. Specifically:

- As described in chapter 4, Alameda County Cooperative Extension had long been involved with efforts to support urban agriculture research and education, as well as efforts to address issues of food insecurity and racial inequities in the county.
- One farm advisor had worked to create a community botanical garden in a community in the Central Valley. The garden served several purposes, including teaching community members about California agriculture and farmworker agricultural history, promoting youth leadership, and facilitating community development.
- One farm advisor had helped start a non-profit urban farm in his region, and continued to consult with the farm managers on projects.
- Two farm advisors had given technical support to the Sunol Agricultural Park in Alameda County, and had been contacted for assistance in developing a similar project in neighboring Santa Clara County.

- One farm advisor had worked with a statewide team of researchers to assess issues affecting urban-edge producers in several counties.
- Several farm advisors had been involved with Master Gardener events, at which they had given presentations at events and helped lead produce tastings.
- Additionally, advisors throughout the state had: consulted with market gardeners upon request; helped establish large gardens (e.g., five-acres) for local institutions; conducted trainings in conjunction with Master Gardeners; and consulted on marketing, soil- and pest management in urban areas.

Thus, despite a general consensus among farm advisors that their main target clientele were commercial operators, (regardless of geographic location), many advisors and UCCE staff had found innovative ways to provide assistance to non-commercial farmers and gardeners. Some of these efforts occurred through a cooperation with the Master Gardener Program, while others were independent projects. These projects, as well as the processes that were used to create them, might serve well as models for future programming.

Interest in Learning More about Urban Agriculture. As explained early in this dissertation, a study tour of urban agriculture topics in the San Francisco Bay Area in 2006 helped set the stage for the action research framework within which the research was conducted (see chapter 4). A post-tour survey was also conducted via email[39], and comments from this survey illustrated a range of perspectives on future work with urban agriculture operations. One advisor wrote:

> *There's some real problems here as well as some huge opportunities. If this could be run like [farm name] I think it would have a larger impact. As it is, it appears that there's a little bit of gardening going on and a lot of the land has*

[39] A report summarizing this tour is included in the appendices.

been leased out for a nursery. With the cost of land in the area and its availability, I'm really surprised more is not being done there.

Small Farm Workgroup members exploring appropriate technology at urban farm in Oakland.

Another UCCE staff member expressed that

> *visiting [the urban farm was] valuable for me to develop a working relationship AND great to hear a CBO addressing extension about structural social issues that are directly relevant to urban agriculture and food systems.*

A second farm advisor wrote:

> *I have always believed in urban education about farming, and hands-on gardening activities is a good way to do this, for kids as well as adults. Nutrition etc. Low income areas especially. Not sure it is our workgroup's priority since there are others doing this….[Master Gardeners], [Food Stamp Nutrition Education Program], non –profits, etc.*

These comments show that some Small Farm Workgroup members were interested in learning about urban food production and networking with urban farmers, while others felt that the Small Farm Workgroup should prioritize other topics. Because advisors and staff specialize in different areas in their role as Cooperative Extension employees, the fact that some individuals expressed interest in urban agriculture suggests that there would be willingness within the Small Farm Workgroup to expand assistance to more urban agricultural operations and topics if such an effort were to begin. Preliminary leadership would likely be needed to facilitate this.

Summary of UC Staff Member Perspectives

The following five points summarize the observations of UCCE staff members' perceptions of urban agriculture, their past work with, and interest in, conducting additional programming for, urban agriculture operators.

- The definition of urban agriculture that is typically used within the urban agriculture movement was incongruent with the USDA definitions of "urban" and "metro." This led to confusion among CE staff as to how to make a meaningful distinction between urban, peri-urban/urban edge, and rural agriculture, particularly in California.
- Farm advisors defined their clientele as commercial operators, without placing geographic boundaries on the location of sites.
- The focus on the commercial sector had the potential to funnel agricultural assistance toward operations located in White-, versus of-color, communities in this study.
- Despite viewing their clientele as commercial operators, many farm advisors had worked with non-commercial urban agriculture operations.
- Some Small Farm Workgroup members were interested in expanding programming with urban agriculture.

Action Recommendations for Motivating CE Support for Urban Agriculture-Derived from UC Staff Member Perspectives

Based upon these points, the following steps could be useful in building Cooperative Extension support for non-commercial, as well as commercial, urban agriculture.

1. *Development of a working definition of urban agriculture* that incorporated both social movement and USDA concepts of urbanity and agriculture might facilitate efforts to increase technical assistance that is tailored to distinct groups of urban agriculture operators. This type of effort to develop a working definition would be most useful if undertaken within a given project, rather than as a standalone and essentially academic exercise.
2. *Recognition of urban agriculture's role in both formal and informal market economies* could present opportunities to expand services to various operators, while broadening the possibilities for Cooperative Extension to interact with a broader diversity of urban clientele. Expansion of CE services to urban producers would be mutually beneficial to operators and Cooperative Extension advisors/programs. It would give each party opportunities to learn about new market niches and alternative distribution approaches, and to develop new understandings and best practices for distribution in urban areas. The importance of recognizing informal distribution arrangements, as well as marketing and sales, would be a key development in terms of serving underserved agricultural producers, as well as consumers who suffer from inaccessibility of affordable, healthy, and culturally-acceptable food.

3. *An active focus on the potential implications* of Cooperative Extension program planning on racial inequality could take steps away from discriminatory USDA practices of the past. This would advance the Department's integrity in terms of both equity and "social sustainability." It might also enhance efforts to avoid *status-quo* social arrangements including the historical under-privileging of farmers and agricultural laborers of African, Asian, Native American, and Mexican descent. Anti-racism trainings would assist in such an effort.

Further Recommendation on Providing Assistance for Urban Agriculture

One final recommendation from this study is that agricultural extension programs that explicitly serve non-commercial urban agricultural operations be reinstated. This recommendation seems warranted given the increasing movement toward urban food production, as well as the information provided by informants in this study. According to this study, underserved operations might include community market farms and other types of urban food production initiatives that aim to increase access to affordable healthy foods while addressing systematic issues related to food injustice. Public sector assistance was less available to these types of operations in Alameda County during this study, but not because there wasn't a need.

As seen in preceding chapters, operations that were actively addressing CFS and food justice were all non-profit organizations with limited budgets and a small number of staff members. Meanwhile, UCCE and USDA each have, despite current budget crises, a wealth of human resources that could be dedicated to increasing technical support for

various urban agriculture operators, particularly those who aim to reduce food system inequalities. Cooperative Extension in particular is compelled by its mission and legacy to "bring the university to the people," and in the case of urban agriculture in California, it appears that it is not fulfilling this obligation in entirety, despite efforts of a small number of staff members at UCCE Alameda and various Statewide Special Programs. A new Cooperative Extension focus could include a region-wide or national urban agriculture program that provided on-the-ground, as well as remote assistance with urban livestock, urban agriculture regulations and planning, marketing, community development, and other topics not addressed by the Master Gardener Program. A revamped USDA urban agriculture program could draw from the former Urban Garden Program's legacy (which, again, explicitly served low-income urban communities), as well as the experience of CE staff members and government leaders who were involved with the UGP between 1973 and 1996. In addition to these and other sources of knowledge (including current urban farmers and gardeners), development of such a program might also incorporate the expertise of farm advisors who had worked with both commercial and non-commercial operations in the past.

Given the precedent set by the USDA Urban Garden Program and other historic federal garden programs, as well as the range of interest in and experience with urban agriculture that was demonstrated by Cooperative Extension staff members in this study, a revitalization of a national or regional urban agriculture program seems plausible. The findings presented in this chapter could be used to inform such an effort.

Chapter Conclusion

This chapter has presented findings about challenges and information/assistance needs faced by urban agriculture operators in Alameda County, as well as key informants' past work with Cooperative Extension programs. It has also presented UCCE farm advisor and Small Farm Workgroup member perspectives about urban agriculture. The next and final chapter presents conclusions about the study overall.

CHAPTER TEN

Conclusions

This dissertation has explored numerous aspects of urban agriculture within an action research framework. The study was undertaken with the complimentary goals of adding to general and scholarly knowledge about urban agriculture in the Global North; and engaging Cooperative Extension staff members in an action-oriented dialogue about expanding technical support available to urban agriculture operators. Urban agriculture has been considered as part of what Allen et al. termed alternative food initiatives (AFIs), and it has also been examined with respect to David Harvey's early writings on revolutionary, *status quo* and counter-revolutionary theory. This chapter ties these concepts together to arrive at a set of overall conclusions pertinent to the goals of the study. These conclusions also reflect an effort to give credence to the interplay of social research and action.

Summary of Key Findings and Implications for Future Research

Characterizing and Defining Urban Agriculture

The findings of this study have allowed for an exploration of various ways in which urban agriculture operations can be characterized in a U.S. context. The urban agriculture operations in Alameda County differed from each other by purpose, management structure, and economic sector. Grouping the operations based on these characteristics stepped beyond the more general, location-based, understanding of urban agriculture (i.e., in or near a city) to uncover underlying structures and motivations for urban food

production. This approach was useful in uncovering patterns such as relationships between socio-political implications of some forms of urban agriculture and the amount/type of public sector support that they received.

One key finding of this study was that the way in which urban agriculture is typically conceptualized within the advocacy movement was not meaningful, in a practical sense, for the Cooperative Extension farm advisors consulted in this study. Farm advisors did not identify their clientele as "urban" or "non-urban" farmers. Rather, advisors focused on whether operators were part of the non-commercial or the commercial sector. The latter were identified as the target clientele. This finding bridged the theoretical and practical in terms of increasing support for urban agriculture from Cooperative Extension. While debates about the "definition" of urban agriculture can certainly encompass a range of theoretical topics, the findings in this study make it clear that definitions can have impacts on the amount of public sector support available to producers of food. This suggests a need to refine the definitions of urban agriculture in order to address that which sets it apart from "non-urban" agriculture in highly urbanized regions of the Global North. The characteristics that were derived from this study could be a useful starting point, and at least three further considerations would be useful in such efforts.

First, urban agriculture in the Global North consists not only of backyard- and community gardening, but includes community market farms, entrepreneurial gardens, urban livestock husbandry, and fully commercial farms. This is well established among advocates, but awareness of the diversity of commercial, as well as non-commercial,

operations could be expanded beyond the urban agriculture movement. Moreover, urban agriculture operations are motivated by distinct interests and concerns such as growing and selling food, community development, sustainability, youth development, food access and food justice. While operations may have multiple and overlapping goals, they can also be characterized by their emphasis on a few of these issues. New working definitions might thus center on motivations and organizational structures, in addition to the morphology of production sites (i.e., community garden, five-acre farm, etc.).

Second, themes that are integral to the discussion of urban agriculture in developing regions of the Global South are reflected in Western industrialized regions. However, these themes need to be reconceptualized to fit economic realities of industrialized societies and the various social arrangements that exist within them. For example, the impacts of urban agriculture on food security in the United States are likely quite different from those in West Africa, (which differs drastically in terms of human development indices), or Cuba, (whose success with urban agriculture has developed in response to its political and economic isolation). On the other hand, as suggested by one key informant in this study, there *are* regions of the United States that may actually be comparable to some developing regions in terms of access to food or economic opportunity.[40] These differences and similarities warrant a closer look in terms of refining the international development definition of urban agriculture, and its potential impacts, to better fit the context of the United States.

[40] A recent issue of Urban Agriculture magazine also provides an example the importance of urban agriculture to residents' livelihoods in post-Katrina New Orleans. (See Bailkey 2009.)

Third, it is not likely that there will be a singular definition of "Urban Agriculture," given the diversity of social, political, and economic climates that exist within societies of the Global North. A set of working definitions might be used to advance the level of assistance available to urban agriculture operators. These definitions would best be developed cooperatively among stakeholders. In addition to urban agriculture practitioners and advocates, stakeholders may include local government officials, city planners, county-, state-, and national agricultural agencies, human rights advocates, anti-racism activists. Cooperative Extension staff, and scholars from various disciplines.

An additional aspect of urban agriculture that was touched upon in this study and that would make useful follow-up study relates to various aspects of community relationships. As mentioned in this dissertation, the concept of "community" was understood differently by various urban agriculture operators, particularly community gardeners. Moreover, the ethnic and socio-economic diversity in Alameda County—as a whole, within specific neighborhoods, and within collective urban agriculture operations—could have the potential to both bring together different social groups, as well as to create tension within projects. Future research could explore these types of community understandings, and how they may advance or hinder the progress of urban agriculture operations.

Inequalities and Urban Agriculture

Another key finding of this study was that urban agriculture sites were not dispersed evenly throughout Alameda County, or within its cities. Moreover, urban agriculture types were correlated with the demographics of the surrounding communities. This

uneven dispersion of urban agriculture sites had the potential to perpetuate inequalities between communities in at least two ways. First, not all communities within the county had equal access to urban agriculture sites. Thus, the potential benefits of urban agriculture, such as access to public gardening space, community food distribution, youth- and community/economic development were not available to all Alameda County residents. Second, non-commercial urban agriculture operations were concentrated in census tracts with lower household incomes, and higher percentages of residents of color. Meanwhile, commercial operations were concentrated in predominantly White census tracts. This pattern had the potential to perpetuate race and class inequalities in terms of access to Cooperative Extension-led agricultural support. Future research is needed about the spatial patterns of urban agriculture, and how this may affect issues of race, class, equality, and justice in the agrifood system.

Justice and Politics

An important finding of this study related to social justice is that non-commercial urban agriculture operations whose work focused on community food security, food justice, and training for underprivileged youths (CFS/FJ/YD) were operated exclusively by non-profit organizations. Meanwhile, city agencies, along with non-profits, were integrally involved with community gardens. Several possible explanations for these relationships between economic sector and main purpose of the urban agriculture operations were explored in this dissertation. These possibilities ranged from non-belief in the utility of urban food production vis à vis urban food insecurity, to unwillingness on the part of government agencies to support work that had the possibility to engender fundamental social change.

Further research is needed to explore these types of relationships in other areas. Locally, it would also be useful to assess the attitudes of Alameda County government employees/agencies in toward urban agriculture. Moreover, follow-up studies will need to assess whether government agencies in Alameda County begin to support urban agriculture projects that address issues of rights and justice as these issues return to the forefront of the wider agrifood movement.

Limitations of this Study

The limitations of this study derive from the omission of certain types of urban agriculture from the study population, and changes that have occurred since the beginning of this study in 2006.

Omissions

As discussed in chapter 5, school gardens were not included in this study. However, through casual observation, I have noted that some schools have begun sell garden produce. As such, their role in providing food to the community may be greater than it was in the past. Another group of urban agriculture practioners that was not considered in this study consisted of homeowners/renters who sell produce to local restaurants and specialty grocers. In the beginning of this research, it was assumed that the impact of this practice in the wider agrifood system would be minimal. Over the course of the study, it became clear that there was actually a longstanding informal economy of local retailers who purchased very small quantities of garden produce or tree fruits (such as one box of lemons) from urban residents. Future studies to assess the extent of school and home

gardeners' impact on the local food economy and food access would be a useful contribution to the knowledge in this area.

New Developments

Additionally, several new urban agriculture projects have been initiated in Alameda County since 2006. First, as of the time of this writing, a community market farm is being established with cooperation between the City of Oakland and a local non-profit organization. This raises questions about the relationship operation purpose and social sector that was explored in this work. Future research might assess whether this type of community market farm on city land fits into the analysis presented in this dissertation, or if it represents a unique type of arrangement in Alameda County. Additionally, a recent study assessed the amount and location of all vacant city-owned land in Oakland, and is receiving much interest within City of Oakland agencies. (See McClintock and Cooper 2009.) This builds upon the Oakland Food Systems Assessment described in chapter 4 (Unger and Wooten 2006). Thus, it appears that, at least in Oakland, local urban food production is gaining more institutional and governmental support.

Other new types of urban agriculture operations have also been established in the Bay Area since 2006. These include edible landscaping services, and urban CSAs through which urban farm operators contract with multiple homeowners throughout a city to use their backyards for food production. Again, these are relatively recent developments, and further research might examine the specific characteristics and effects of these (and other) urban agriculture businesses.

Farm Advisors' Location

Finally, a limitation on the findings about Cooperative Extension advisors' interactions with urban agriculture was the fact that there were no farm advisors located in the study area. Although the general discussion of CE in this dissertation related mainly to conceptual issues, it would be informative to assess interest in urban agriculture in counties where farm advisors conduct their work. Such a study would likely have an even greater relevance to the local area, as well as a greater potential for action-oriented outcomes.

Recognizing Revolution?

It was not the goal of this dissertation to judge whether one type of urban agriculture is "more revolutionary" or more significant than others. The different forms of urban agriculture examined in this study each had the potential to play an important role in the dynamic urban agrifood system. With the overall study findings in mind, it is possible, however, to return to the analysis of revolution and of opposition which were set forth by Harvey (1973) and by Allen et al. (2003) respectively. As Allen et al. point out, recognizing a distinction between "oppositional" and "alternative" AFIs can be useful in assessing their potential to "change the agrifood system" (2003, 61).

Both Harvey's and Allen's works argued that, for various reasons, 'change' ideologies may differ in their fundamental focus on either creating change *within* existing structures or creating entirely new ones. They also suggested ways in which a failure to recognize these differences between ideologies and their outcomes might assume that structural

changes are being made when in reality they are not. For Allen et al., this was expressed as a concern that agrifood initiatives might "through their silence about social relationships in production, inadvertently assume or represent that rural communities and family farms embody social justice, rather than requiring that they do so" (2003, 74). For Harvey, this was expressed as counter-revolutionary theory, which he described as being "divorced from the reality it purports to represent." Harvey also contended that counter-revolutionary theory could serve to divert attention "from fundamental issues to superficial or non-existent issues" and could "function as spurious support and legitimization for counter-revolutionary *actions* designed to frustrate needed change" (emphasis added) (1973, 151).

While Allen et al.'s and Harvey's works focused on different social change tactics (one more action-oriented and the other more theoretical), their writings about change also overlap in ways that have been useful to this action research study. (See chapter 3.) (It is also important to remember that Allen et al. drew from another of Harvey's later works in their paper.) These concepts of alternative/oppositional AFIs and revolutionary theory can be applied to the findings of this study in terms of the position of urban agriculture operations within the wider system and vis à vis revolution.

The fact that urban agriculture is often discussed by movement actors as the gateway to an agrifood systems revolution begs attention as to the ways in which initiatives are portrayed, and if these portrayals match the interests and abilities of practioners. For instance, not all of the urban agriculture operations in this study were focused on social

justice or change. There is no reason to expect that all farm and gardens would, or should, be driven by these values. What is problematic, however, is an assumption that all urban agriculture operations are working to create social structural changes in agrifood systems, when in fact, as was found in this study, not all do, nor do all wish to do so. This is clearly aligned with Allen et al.'s concerns about silence on social justice issues, as well as Harvey's thoughts about counter-revolutionary theory's role in diverting attention away from fundamental social change. When urban agriculture is essentialized as all-encompassing of ideals including sustainable cities, food justice, and community development, along with the more tangible aspect of food production, it can be difficult to discern how supporting certain activities can act to perpetuate the social (or environmental) patterns that various well-intentioned advocates and enthusiasts are driven to affect.

As suggested throughout this dissertation, social action initiatives, (along with social theories), that do seek structural change might be construed as "too revolutionary" to garner support from institutions whose existence depends on the maintenance of a *status quo*. This can lead to the overshadowing of more radical ideologies by softer and more publicly acceptable ones. As one urban farmer in this study had observed:

> *A lot of times journalists want to find [an urban farmer] who's just doing it just to do it. That's like part of the whole American Myth, like, 'we've got this crazy farmer', and they don't want to hear anything about social justice or whatever. They just wanna hear […] farm stories.*

Viewed from the perspective of those focused on social justice in the agrifood system, social *in*justice and racial *in*equality could be considered the *status quo* in the current American agrifood system. To use the farmer's comment above as an example, if the idea

of an urban farming revolution is represented in public media by 'farm stories,' this might help create enthusiasm for such metropolitan myths that do not attend to inequality or justice. This is one example of why critical reflection on these issues becomes essential. An assumption that urban agriculture is always (or never) associated with social justice may create 'spurious support' for non-change or *status quo* arrangements, rather than requiring that urban agriculture, as a movement, deal with structural inequalities and their origins.

If "revolutionary urban agriculture" is to be truly so, it must be 'firmly grounded in the reality it seeks to represent;' 'dialectically formulated;' 'offer real choices for future moments;' and hold out the prospect for creating *new realities* rather assuming that they will result from the transplantation of new projects into existing systems. (See Harvey 1973, 151.) Likewise, research on food production in urban areas that is undertaken without a critical awareness about whether various actions reinforce or challenge inequality in the urban system is likely to fall back to *status quo* conclusions. (To follow Harvey's early idea on this topic, one would *assume* that most theoretical constructions also fall into the '*status quo'* category.) On the other hand, action-oriented research that is fully cognizant of the underlying social inequalities that it seeks to affect might be a more effective component of the evolution toward a more socially just urban agrifood system.

Action Research Validity Criteria: Completing a Spiral

As discussed in chapter 3, validity criteria have been developed to evaluate action research processes: *outcome, process, democratic, catalytic,* and *dialogic*. In keeping

with the spiral of the action research tradition, it is worthwhile to consider how this study addressed each of these criteria before concluding this work.

Did the project achieve action-oriented outcomes?

Through the various methods used, the study process involved the following action outcomes:

a. Advanced the dialogue about urban agriculture among Small Farm Advisors and the Small Farm Workgroup.
b. Presented and published information about urban agriculture through the Small Farm Program newsletters and conference presentations.
c. Formulated practical recommendations about increasing technical assistance to urban agriculture operators that could be enacted based upon past precedents.

Were sound and appropriate research methodologies used?

As described in chapter 5, established research methods were used to conduct this study including:

a. Literature reviews
b. Intensive interviews
c. Participant Observation
d. GIS mapping

Were results relevant to the local setting?

Efforts were made throughout the study to engage local stakeholders in the research process. The study design and analysis of local findings were each developed through continual interaction with local stakeholders.

Were both the researcher and participants educated through the project?

In addition to my own education, efforts were made to apprise key informants about preliminary study findings, as well as to distribute other relevant information. Specifically:

a. Information about Cooperative Extension programs was distributed to key informants during interviews.
b. A preliminary report on research findings was mailed to key informants and made publicly available online.
c. Additional assistance was provided to several individual key informants who requested information about various technical topics throughout the duration of the study and afterward.

Was new knowledge generated?

It is hoped that the conclusions presented in this chapter have provided a summary of the knowledge generated. This study has been an exploration of urban agriculture in one county of the United States, and the ways in which issues of justice and revolution may or may not motivate various operators. The study has also attempted to integrate theoretical and action-oriented research, and to document that process.

Concluding Thoughts

It has been my hope throughout this work to contribute to academic and action-oriented dialogues on urban agriculture in the Global North. There are many ideas about what may constitute a more sustainable set of agrifood arrangements, and how these might best be realized. There may also be trade-offs in this human pursuit for improvement, but these need to be problematized in order to proceed in intentional and honest directions.

Social movements continually evolve and adapt to new realities. This was also a defining characteristic of Harvey's revolutionary theory—that it was able to encompass both conflict and contradiction within itself. In so doing, it would help to create, rather than find, truth. The use of action research for this study was intended to take steps in this direction. It is hoped that the analyses presented in this dissertation might be used in a next spiral of steps focused on a more all-encompassing agrifood revolution in which urban agriculture, in all of its iterations, can play an important part.

ADDENDUM

Future of the UC Small Farm Program

After serving the small farm community for 30 years, the University of California Small Farm Program was slated to be shut down as of December 31, 2009 (*Small Farm Program website,* 2009; Jolly 2009). In the midst of a substantial budget crisis within the University of California, and the state of California more widely, the UC Division of Agriculture and Natural Resources moved to permanently close the Small Farm Program as a part of its funds-saving tactics. According to SFP insiders, however, the apparent cost savings did not seem to warrant the closure of an extension program that serves 85 percent of the farmers in California, and has brought in $218 million in grants to the university system since 2000; Especially when the fiscal savings associated with closing the program will amount to $140,000 per year, plus a one time savings of $268,000 ((*Small Farm Program website,* 2009; Jolly 2009). Efforts to reverse this decision are underway as of this writing.

The implications of the proposed closure of SFP for the action-oriented recommendations in this dissertation are many. First, there would obviously be no possibility of creating an urban agriculture focus within the Small Farm Program if it should cease to exist. Moreover, the proposed closure of SFP has been accompanied by the elimination or budget reduction of other DANR Statewide Special Programs that might be useful to urban agriculture operators. These include the restructuring of the California Communities Program, and permanent budget reductions for the Sustainable Agriculture Research and Education Program (SAREP); the Agricultural Issues Center (AIC); and the

4H Statewide office, among others (Dooley 2009). The UC Board of Regents also opted to increase student tuition by 32 percent in a single year (Gordon and Khan 2009). These administrative actions are indicative of the gravity of the budget situation within UC and suggest that the creation of new programs within the UC system will be slow over the foreseeable future.

Despite the restructuring of programs and student fee schedules, (and the economic and political issues that belie these actions), the University of California's mission to serve the public still requires that it provide relevant information to the many stakeholders in California's agrifood system (Colasanti et al. 2009). As such, (and particularly in light of the recent elimination of programs that are intended to serve specific communities), the action-oriented research approaches used in this study become all-the-more essential. For instance, past research has examined the impact that private industry funding of research conducted at land grant universities (including UC) can have on the type of agricultural research that is conducted; for whom the research is relevant; and who has access to the products of research (Glenna et al. 2007; Lacy et al. 1988). During an era in which industry funding of research has been on the rise, academic work that honestly addresses complex social issues in the agrifood system with a concomitant drive to serve a diversity of public stakeholders is essential to the integrity of the land-grant institution.

As noted in this work, public insistence on rights and equality can be potent and it can drive progress toward these goals. Beyond the scope of this study of urban agriculture, a social and academic movement for equal access to public universities in the form of

education and extension assistance must involve actors both within and outside of the university system. The recent developments within UC obviate the necessity to renew such a joint effort for the public good.

APPENDICES

APPENDIX 1

Interview Guide

(Key: A=farm scale; B=garden scale C= livestock)

Describing the farm business or organization

How long have you operated your farm/ranch? A /C
How long has the farm or garden been in operation? B

Who is/are the principle operator(s) of your farm/ranch and who conducts the day-to-day management? A or C.
Who manages or coordinates the farm/garden and who is/are the director(s) of the organization, (if different)? B

Did you establish the operation, or did you continue a family or other existing operation? A or C.
Who established the farm/garden? Where did the idea come from? B.

What is the business model of your operation?

(*If for-profit*)
Is the business part of your operation a sole proprietorship, partnership, corporation, LLC?

What are your main goals for the farm/ranch? A or C.
What are the goals of the organization (and the farm/garden within it, if applicable)? B.

Do you have a formal mission statement? (Y/N) *Get copies if available*.

Do you have a written business plan and/or strategic plan for your operation or organization?

Describing the operation

What is the size (area) of the farm/ranch? A or C
What is the size (area) of the garden site(s)? B

n/a for A
What production model do you use? (E.g., individual plots; fully cooperative…) B.
What animals do you raise and what is the size of the herd (for each animal)? C.
(If garden plots) What is the size of each plot? B
Do gardeners pay for a plot, and if so how much? B

How many gardeners are there? OR How many people work on gardening activities? B.

n/a A or C.

What products do you/gardeners produce for consumption beyond personal/household consumption?

n/a A.
Do you have rules/guidelines for gardening? (Y/N) B.
(E.g., certain types of plants/trees not allowed; organic only, etc.) *Get copies if available.*

How do you handle slaughtering and processing for marketing/distribution? C.
(e.g., hire service, bring to slaughterhouse, sell direct [live] to consumer)

Resources and Inputs

How do you have access to the land (and facilities if applicable)?
(e.g., *Own, rent, lease, borrow, other arrangement)*

(If don't own)
How permanent is access?
Are you interested owning or securing long-term access to land? **Y/N**

Do you have multiple production sites? **Y/N**

(If yes) Are there any advantages or disadvantages to having multiple locations? Please describe.

Do you use any facilities or services besides land/garden for production, storage or processing?
(Examples: Barn, greenhouse, cold storage, packing shed, certified kitchen.) **Y/N**

(If yes) How do you have access to these? (e.g., o*wn, lease, pay for use, trade/barter)*

Do you obtain any production inputs through donations? **Y/N** A or C
(e.g., seeds/plants, compost, water, tools, free soil amendments, fences)

How do you obtain production inputs? B
(Donations, purchase in stores, catalogue, etc.)

Are there any inputs or services that are more difficult than others to obtain?
Please describe.

Production Management

What type of production method(s) do you (or gardeners) use?
(e.g., Conventional, no till, organic (certified?), hormone free, permaculture, biodynamic, biointensive, free range, grass-finished, management intensive grazing.)

What is your source of irrigation/stock water?
(e.g., Well, ditch, municipal, grey water, cistern, spring, day pond.)

How do you manage soil quality or improvement? A and B.
How do you monitor and manage your rangelands/pasture? C

How do you manage animal health and well being related to: (C)
a. nutrition
b. disease
c. predators
d. any other?

Have you ever had the soil tested at this or other production sites? A and B. **Y /N**

(If yes)
a. Where did you have the soil test done?
b. Did you test for general soil fertility (e.g., nutrients, salts, etc.)? **Y/N**
c. Did you test for soil contamination of metals or other toxics? **Y N**

(If tested for contaminants)

If contaminants were found, how have you dealt with this factor?
If contaminants were found, were there any barriers that kept you from taking additional steps to manage soil contamination? **Y/N**
(If no)
Do you think that soil testing would be useful to your operation? **Y/N** (*If no, skip to below.)*
(If yes to 'useful') What barriers have kept you from testing the soil?

Do you track yields/amount of food produced? **Y/N**
(If yes)
Without regard to income, approximately how much did you produce last year (2006)*?*

Product Distribution and Marketing

A and C. **n/a *This is part of criteria!***
B. Do you market or distribute products? **Y/N**

(If yes)
Where do you market (or distribute) products?
Who are your buyers or target clientele/customers?
Is marketing integral to the production operation, or do you consider it a separate part of the operation with its own people and management system?
How do you establish prices for what you market?
Do you generally receive the price that you need or want from the products you sell? **Y/N**
What do you do with unsold or undistributed product?

(Donate; give to gardeners/volunteer/neighbors; animal feed; compost)

(*If not mktg or distrib)*
A or C. n/a
What do you do with your products?
Do you envision, or would you like to be, marketing your products? **Y/N**
(If yes) What are the barriers that have kept you from marketing your products

Aside from sales revenue, is the farm/ranch supported financially by any other means? **Y/N**
(e.g., off-farm job/personal funds, state or federal loans, or grants) A or C

What types of funding support the garden/food production? B
(E.g. personal funds, grants, dues, sponsorship, market, fundraisers)

Personnel and Decision Making
In total, how many paid employees work at the garden/farm? **Total=_____**

Of these paid employees, how many are:
a. Full time
b. part time
c. day labor
d. interns

e. youth
f. adults

g. family members (if private operation)
h. community members (if community operation)

In total, how many people work here on a volunteer or unpaid basis? **Total=_____**

Of these unpaid volunteers, how many are:
a. youth
b. adults

c. family members (if private)
d. community members (if community)
e. others?

What do you do, if anything, to educate workers and volunteers about farm/garden safety? *(Such as animal handling, chemicals, injuries, etc.)*

Do you have a farm/ranch succession plan for who will take over when you retire or transition out of farming? **Y/N** *Any details?* A or C.

Do you have a plan about who would take over if the current decision-maker (s) were to step out of this position? **Y/N** B

Challenges and Successes

What would you say are the biggest challenges to achieving your operation's goals?

How do you measure success of your farm/ranch? A or C
How do you measure success of your farm/garden B

Community Involvement and Support

A and C. n/a
How do you define the community or clientele that you serve? B.
(If not referred to in mission statement.)

In terms of local community support of or participation in the operation, would you say the surrounding community is:
3. Supportive 2. Indifferent 1. Unsupportive

Do you do any type of outreach to the surrounding community? **Y/N** A and C.
Do you do community outreach? **Y/N** B.
(If yes) What types of outreach do you do?

(If volunteers beyond comm. gardeners) How do you attract and retain adult volunteers? n/a or _____

n/a (*Skip to # 69)* A and C.
Have you taken steps to cultivate community leadership, ownership or control of the project? **Y/N** B.

(If yes,) please describe.
(*If no) W*ould you like to? **Y/N**
(If would like to) What would you need in order to do that?

What kinds of problems have you had with the surrounding community, if any?

Beyond the Operation/Garden

Do you work with other producers (or gardens or food projects) in the area? **Y/N**
(If yes)
What types of activities do you work on together?
(If no)
Do you think that working with other producers/projects would help your operation achieve its goals? What have been some things that have kept you from working with other producers/projects?

What are the advantages and disadvantages of being located in or near an urban area?

(A/C) Thinking ahead 20 years, what kind of future do you see for agriculture in Alameda County, *Bright, Modest, Dim, or None at all*? *Not sure*

(B) Do you see a potential to increase the amount of food produced in the surrounding area? Y/N

(If yes) What would be needed to do this?

Outside Support

How would you describe the county or city government's attitude toward agriculture in your area? *3. Supportive* *2. Neutral or indifferent* *1.Unsupportive or Hostile*

Information Sources and Formats

Have you worked with or received information from any of the following **:**

a. UC Cooperative Extension **Y/ N** (If yes, From which county?)
b. UC Small Farm Center **Y/N**
c. Master Gardeners **Y/N** (If yes, from which county?)

Are there any types of information or assistance that are not available that would be useful to you?

Have you or others in the operation made maps of:
a. the fields/garden or plots **Y/N**
b. the local agricultural or food system **Y/N**

Would any (additional) type of agricultural or food system or field map be useful to you? **Y/N** *If so, what type?*

As a final question:

Do you think that your presence as a food producer in Alameda County impacts the surrounding food and agriculture system?

Key informant demographics:
Gender: **F/M**
What is your ethnicity?
What is your highest level of formal education:
Did you have any specialized training, especially training related to food, agriculture, or community development?

APPENDIX 2

Screening Questions for Farm/Ranch Scale Operators

1. Do you currently produce food products? **Yes** **No** (move to 7)

(If yes)

2. What are your main products?

3. Do you sell or distribute these products? **Yes** **No**

(If yes)

4. Do you do any direct marketing or distribution of your products such as farmers' markets, CSAs, farm stands, or food banks? **Yes** **No**

5. If yes, in which counties or cities?

6. Do you market your products through any distributors or wholesalers? **Yes** **No**

7. What is the size (in acres) of your production operation?

8. Do you have employees? **Yes** **No** If so, approximately how many?
9. Do you have volunteers or interns? **Yes** **No** If so, approximately how many or for how long?

10. Do family members work at your operation?

11. Is farming your sole source of income? **Yes** **No**

12. Who is the principle operator of your farm?

Thank you for your time. Would you be willing to participate in a longer interview if selected?

Yes **No**

APPENDIX 3

Livestock Producer Associations and Government Agencies Contacted

Alameda County Agricultural Commissioner
Alameda County Resource and Conservation District
American Dairy Goat Association
American Honey Producers
California Beef Council
California Cattlemen's Association
California Cattlewomen
California Department of Food and Agriculture
California Meat Goat Association
California Poultry Federation
California Sheep Commission
California Farm Bureau Federation
International Boer Goat Association, Inc.
Northern California Meat Goat Association
Western Grasslands Beef

APPENDIX 4

Small Farm Workgroup Report on Urban Agriculture Study Tour

Submitted to Workgroup Co-Chairs Ben Faber and Ramiro Lobo
by
Kristin Reynolds, SFP
14 November 2006

Introduction

As urbanization accelerates the conversion of agricultural land to non- agricultural uses, farmers and ranchers, and those who work with agricultural producers on research and extension, respond to these effects. Agriculture in urban and peri-urban areas is taking on new forms, and as agriculture evolves, so do university extension programs. To this end a study tour was organized for the Small Farm Workgroup in order to begin an assessment of urban and peri-urban agricultural issues that either are or could be addressed by members of the Workgroup.

On September 14th, 2006 the Workgroup toured urban agricultural production, marketing and education sites in Berkeley, Oakland, Alameda, and San Francisco. The tour also included a luncheon meeting with the manager of the Old Oakland Farmers market, and the coordinator of the Inner City Farmers Market Organization. In attendance were farm advisors and other UCCE staff from around the state, Small Farm Program staff, and a group of international students and professionals affiliated with UC Berkeley. A summary of the sites visited follows, along with comments on sites from three of the Workgroup participants. A list of participants, itinerary, questionnaire, and select photos of each site are also included at the end of this report.

Sites Visited

Monterey Market (Berkeley)

The Monterey Market is a family-owned produce market that purchases directly from farmers, and stocks many items from smaller farmers in California. A wide variety of products is available, including many specialty crops and crop varieties, both organic and conventionally-grown. Proprietor Bill Fujimoto met with the tour group to give a history and overview of the store, followed by a question-answer period. Members of the Workgroup then had a brief period of time to tour the store individually.

SF Workgroup comments:

- *"Monterey Mkt: parking availability constraint; Fujimoto is trying to be fair to growers by paying reasonable prices in order to keep them coming back – a sure sign of mutualism."*

- *"Farm Advisors were interested in how to help farmers sell to markets such as Monterey market. It is a unique market in that the owners have been helpful to new and small farmers for many years, yet there are other markets that could be cultivated to buy as they do, and could be given information on why it is good business for them. (Future extension activity: a booklet for locally owned grocers on this topic."*

City Slicker Farms (Oakland)

This community based organization works to "increase food self-sufficiency by creating organic, sustainable, high-yield urban farms and backyard gardens" throughout West Oakland. The organization prioritizes serving low-income communities of color. Program areas include: Urban Market Farming; Food Distribution; Education; Back-Yard Garden Building; Composting; and a Nursery and Seed Saving Program.

Willow Rosenthal of City Slicker Farms led the tour group on a walk through the one of the organization's six production sites. This was followed by an overview of the organization and an interactive discussion of urban agricultural and food system issues.

SF Workgroup comments:

- *"City Slickers: the high cost of land is going to limit this sort of activity unless local government gets involved; sounds like they are providing a significant amount of fresh food locally, as well as training for homeowners and youth. They are making lots of innovative uses of the land and seem to have become a focal point for the neighborhood. Where do they go for horticultural information? Probably not Extension."*

Luncheon meeting with Oakland Farmers Market Representatives

Oakland farmers markets. Oakland hosts a number of markets that attract or target specific ethnic consumers (such as Latinos or members of the Asian community) and/or include many ethnically diverse growers. In order for the Workgroup to learn about diverse markets a 1-1/2 hour luncheon meeting was held in downtown Oakland, with a secondary goal of creating dialogue between members of the Small Farm Workgroup and market managers in this urban environment. Seven area market managers were invited and were asked to come prepared to give a brief presentation of their markets including who they serve (farmers/vendors and consumers), successes and challenges that they had experienced. One workgroup member also gave an overview of the Small Farm Workgroup's members and purpose.

SF Workgroup comments:

- *"It seems like there is a lot of variety in the different local markets and that growers can make some serious cash selling into them."*

Alameda Point Collaborative (Alameda)

APC is an organization that works with residents of a housing development on the former Alameda Naval Air Station. APC received 34 acres of land from the closure of the Air Station, and includes 239 housing units, a community garden area, space for a commercial nursery, a community center and a health center. Residents include individuals and families recovering from domestic violence, adults and children with disabilities, persons living with AIDS and formerly homeless individuals. APC works to foster community and enable residents to build positive futures. APC Programs related to agriculture include a plant nursery and a youth program that teaches gardening and job skills, along with nutrition education to youth living in the housing units.

Kate Casale, who oversees the youth gardening program, gave the Workgroup a tour of the community garden, nursery facilities, and a worm composting site operated by an outside proprietor.

SF Workgroup comments:

- *"There's some real problems here as well as some huge opportunities. If this could be run like City Slickers I think it would have a larger impact. As it is, it appears that there's a little bit of gardening going on and a lot of the land has been leased out for a nursery. With the cost of land in the area and its availability, I'm really surprised more is not being done there."*

Center for Urban Education about Sustainable Agriculture (CUESA) (San Francisco)

CUESA focuses on educating consumers about sustainable agriculture through several facets, the most well-known of which is its direction of the Ferry Plaza Farmers Market. The market occurs four times per week, with educational events such as cooking demonstrations, "meet the farmer" sessions, and other speaking events by figures in the sustainable agriculture/food system community, such as authors, farmers and chefs.

The Workgroup met with Executive Director Dave Stockdale who presented the functions and history of CUESA. This included an overview of the organizational structure of the Ferry Plaza market, specialty shops and how CUESA interfaces with the city of San Francisco and the Port Authority, (each of which own part of the property that CUESA and the market utilize for their programs). After the one-hour meeting, the tour group had time to peruse the market building, specialty farm product shops, and Thursday evening farmers market.

SF Workgroup comments:

- "Great overview of the Ferry Bldg market as well as the others in town. They've got the commuter boat traffic going through there all the time. This is a great opportunity for growers. It would be interesting to see if it could be run as a CSA-like operation where commuters paid $X per year and they could take Y amount of produce home a day from the various vendors."

Evaluation and SF Workgroup Feedback

Individual feedback from the Workgroup participants, as well as from the tour hosts, has been positive and enthusiastic. In order to systematically assess the Workgroup members' reactions and potential ideas for future approaches about urban and peri-urban agricultural issues, a questionnaire was sent via email to Workgroup participants. A draft of the current report was also sent with a request for additional comments, which have been integrated into this report. Respondents were notified that their responses would be shared with the group and included in the Small Farm Program annual report, and given the option to remain anonymous.

Of seven participants, three completed the questionnaire and included comments for the report. These three rated the tour as follows. (Refer to appendices for questionnaire):

1a. Relevance to Small Farm Workgroup: Average: 4.67 (5=very relevant, 1=not at all relevant)

1b. Relevance to your own region's research/extension activities: Avg: 4.67

2a. Variety of topics: Avg: 1 (=adequate)

2b. Length of time at each site: Avg: 1 (=adequate)

Responses to write in questions were as follows:

3. Most valuable part of the day for you and why.

- *"Visiting City Slicker farms ~ valuable for me to develop a working relationship AND great to hear a CBO addressing extension about structural social issues that are directly relevant to urban agriculture and food systems."*

- *"Seeing the different types of farmers markets, the accessibility of some and the closed door of others. Hearing about how ferry market is going to add their own regulatory aspects and reporting on sustainability….ye gads, too much, if I was a farmer I'd be madder than a hatter."*

All was good, although I enjoyed Monterey Mkt the most

4. Is there anything else you would have liked to see?

- *"There was mention during the Farmers Mkt managers meeting that there were some regular small growers nearby (?) and it would be good to hear about their issues. Also what are city planners doing to encourage truck gardens in urban areas."*

- *"Urban (Oakland) school cafeterias. Market-based urban agriculture (Sunol?)"*

5a. As a result of this tour, did your perception of urban issues pertaining to agriculture change? If so, please discuss how.

- *"I have always believed in urban education about farming, and hands on gardening activities is a good way to do this, for kids as well as adults. Nutrition etc. Low income areas especially. Not sure it is our workgroup's priority since there are others doing this….MG, FSNEP, non –profits, etc."*

- *"It impressed me about the lack of fresh veg in the Oakland area. Also the number of farmers markets in San Francisco. There are a lot of opportunities there."*

5b. As a result of this tour, did you gain information or make contacts that you foresee leading to research and/or extension activities during the next year? Please explain.

- *"YES! I will be working with Willow [of City Slickers] to develop evaluation tools for other food security CBO's in the Bay Area and hope to connect further with Bill Fujimoto and Monterey Market regarding marketing and distribution potential."*

- *"I think I need to set up a tour of LA for growers to see what their opportunities are down there. I did it about 10 years ago and it's time to do it again."*

Additional comment:

- Opportunities for research and extension? *"I think this urban food system should be documented by a graduate student, but I'm not sure what other research might be done here. As for extension, each and every participant in the system should be made aware of the services that Extension can offer."*

Conclusion

All of the participants had positive remarks about the tour, both during the day and in subsequent personal communications. Of the three Workgroup members who completed the questionnaire and gave input for this report, comments were also positive and included ideas for future work. There was some sentiment that urban ag is not a priority for the Small Farm Workgroup. However, comments did point to opportunities for Workgroup or Extension to work with urban agriculture. For example, the question arose as to where UA groups get information, and it was stated that all members of the food system should be made aware of Extension programs. It was also mentioned that working relationships had been established through the tour, and that an urban tour for farmers in L.A. might be planned in the near future. In summary the tour did result in observations

of opportunities for Small Farm Workgroup or SFP work related to urban food system issues and urban agriculture. The next stages of this assessment will explore some of these options.

Notes on Organizing Process

The tour was organized by Kristin Reynolds, SFP Program Representative during the months of August and September via Internet searches, phone calls, emails and pre-tour site visits. Tour site topics were chosen based on an email survey of the topics of interest to Workgroup members. A donation of 3 select Small Farm Program publications was given to the community-based organizations (APC and City Slicker Farms) as acknowledgement for their time.

Small Farm Workgroup Urban Agriculture Study Tour
Itinerary
September 14th 2006

Meet at UC Davis Fleet Services 7:50 am

Depart Davis 8:00 am

Monterey Market, Berkeley. (9:30am)
1550 Hopkins. 510-526-6042

City Slicker Farms, West Oakland. (10:30 am)
16th and Center St

Luncheon meeting with diverse Oakland farmer's market managers.
B Restaurant, 499 Ninth St., Oakland. (12:15 pm)

Alameda Point Collaborative, Alameda. (2:15pm)

Travel by BART from Oakland to SF

Meet with Center for Urban Education about Sustainable Agriculture (CUESA), San Francisco. (4:00 pm)
Ferry Plaza Building.

Peruse Ferry Plaza Thursday night market and farm-direct shops, SF. (5:00pm)

Dinner at Il Fornaio Italian restaurant in San Francisco- Reservations at 6:00- returning via BART to Oakland by 7:45 pm?, and to Davis by 9:30 pm.

Assessment of Small Farm Workgroup Urban Agriculture Tour
Please Return to Kristin Reynolds by Oct 20, 2006.

1. On a scale of 1 to 5, (5= Very relevant; 4=Somewhat relevant; 3=Neutral; 2=Not very relevant; 1=Not at all relevant), how would you rate the tour overall, in terms of the following aspects: (*Please also include any additional or clarifying comments.)

a. Relevance to the Small Farm Workgroup.

b. Relevance to your own/your region's research and extension activities.

2. Please evaluate the following aspects of the tour by indicating (2=Too much, 1=Adequate, or 0=Not enough). (*Please also include any additional or clarifying comments.)

a. Variety of topics.

b. Length of time spent at each site.

3. What was the most valuable part of the day for you and why?

4. Is there anything else you would have liked to see if it had been possible?

5. As a result of this tour:

a. Did your perception of urban issues pertaining to agriculture change? If so, please discuss how.

b. Did you gain information or make contacts that you foresee leading to research and/or extension activities during the next year? Please explain.

6. Please **review the attached Urban Tour Draft Report** and add your observations in terms of *challenges*, *constraints*, *and successes* for each stop. Additionally, please comment on *concerns or topics of research and extension* that you feel the Small Farm Workgroup and/or your own region's Cooperative Extension might justifiably address within its current mission.

***Your comments will be added to this report and used as part of the Workgroup's annual report. (Unless you prefer to not have them included.)**

Thank you for your participation!

APPENDIX 5

Small Farm Workgroup Questionnaire and Discussion Points

Dear Small Farm Workgroup members,

I am writing to follow up with the questions about urban agriculture that we did not finish discussing during my presentation at last week's workgroup meeting. I have reformatted the questions and hope that you will take 5-10 minutes to answer the questions below.

As I mentioned at the meeting, this discussion is part of the urban and peri urban agriculture research that I am conducting, so if you would **please take 5 or 10 minutes to respond by next Friday, June 27, 2008, I would very much appreciate it.**

Thanks!
Kristin

Working Definition: Urban and peri- urban agriculture is the growing of plants and raising of animals for food and other uses within and around cities. It is characterized by closeness to markets, high competition for land, limited space, use of urban resources, low degree of farmer organization, mainly perishable products, among other qualities, (van Veenhuizen 2006). A distinguishing characteristic is that UA is an integral part of the urban economic, social, and ecological system (Mougeot 2000).

Questions of workgroup members:

1. Do you have urban farmers in your county/region?

2. Do you have peri-urban farmers in your county/region?

3. Do you currently work with urban farmers?
   If so, what types of activities/outreach do you conduct?

4. Do you currently work with peri-urban farmers?
   If so, what types of activities/outreach do you conduct?

5. Do you have additional ideas for more regional or statewide work on urban and/or peri urban agriculture?
   If so, please describe them and be sure to specify "urban" "peri urban" or "both".

APPENDIX 6

List of Extension Outreach Conducted as Part of Study

2006-2009

Presentations

Several presentations about urban agriculture were given to Small Farm Program advisors, staff, and Small Farm Workgroup members over the course of this project. These included:

- presentations at Small Farm Workgroup meetings in April, 2006; September 2007; June 2008.
- conference workshops-
    - Master Gardener Program Statewide Conference, Pacific Grove, CA, September 2008
    - California Small Farm Conference, March 2009
    - DANR Statewide Conference, April 2009

Written resources

Short summaries of this research were included in four issues of *Small Farm News*, the Small Farm Program's newsletter. The newsletter is mailed to 5,000 subscribers and posted online. A longer research article was also published and mailed to key informants in 2009. Titles of these articles were as follows:

- "Urban Agriculture in Alameda County, CA: characteristics, challenges, and opportunities for assistance." Small Farm Program Research Brief, March 2009.
- "Examining urban agriculture in Alameda County and elsewhere." Small Farm News, Vol. 2, 2008.
- "Urban agriculture research update." Small Farm News, Volume 3, 2007
- "Study of urban agriculture underway." Small Farm News, Volume 2, 2007
- "Urban agriculture research update." Small Farm News, Vol.1, 2007

APPENDIX 7

Data Sources for GIS maps and Demographic Analysis

Site locations: Collected at each interview as noted above.

U.S. Census data: U.S. Census Bureau, 2000; http://www.census.gov/.

GIS data layers:

- County boundaries and San Francisco Bay:
  California Resources Agency California Spatial Information Library (CaSIL)
  http://casil.ucdavis.edu/casil/

- Waterbodies:
  USGS National Hydrology Dataset
  http://nhd.usgs.gov/data.html

- Major roads:
  California Department of Transportation Atlas (http://www.teleatlas.com).
  Access date: 2005.

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