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THE DYNAMICS OF AN EXPANDING COMMUNITY ECONOMY: COMMUNITY GARDEN NETWORKS AND CLUSTERS IN NEW JERSEY

By

LUKE DRAKE

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And approved by

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ABSTRACT OF THE DISSERTATION

The dynamics of an expanding community economy: Community garden networks and clusters in New Jersey

By LUKE DRAKE

Dissertation Director:
Kevin St. Martin

This dissertation examines the role of networks in producing community gardens. It does so by tracing the flows of knowledge, labor, and materials within individual garden sites, between gardens, and between gardens, institutions and other community groups. Given the attention it has gained for themes of sustainability, local food production, and community building, it is important to understand the network dynamics through which community gardens are started, grow, and change. To this end, my study has three research questions: Which places foster community gardens? How do internal dynamics govern community garden maintenance? Lastly, how do dynamics between community gardens affect the work of garden sites?

This study centers on the case of community gardening in New Jersey, but it also uses national surveys in order to ground the case study materials in a broader context. The research methods began with a survey of 445 community gardening organizations in the U.S. and Canada, followed by discourse analysis of archival documents on community gardening in the U.S. from the 1890s to the 2010s. I then conducted 48 semi-structured interviews with people involved in community gardens in 19 municipalities. Due to my methodology of tracing network connections, five of these interviews took place in Australia to investigate a partnership with a community garden in New Jersey. I

was also a participant-observer in the New Brunswick Community Garden Coalition and a member of a community garden for two years, one of which I served as the garden's president. As part of this ethnographic work, I also conducted a participatory geographic information systems project. Together, these methods revealed a complex web of resource flows and the mechanisms through which they are configured.

In theoretical terms, I rethink community gardens as cooperative enterprises. This dissertation contributes more broadly to economic geography by bridging the diverse/community economies literatures with relational economic geography (REG) theory. J.K. Gibson-Graham's diverse/community economies approaches are used in an expanding literature, but there has been little theorization of network dynamics in such studies. By drawing on concepts from REG regarding resource flows and clustering, I advance a relational conception of community economy.

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school helped me be able to present my work at AAG conferences, allowing me to get feedback from a wider community of scholars. Travel awards from the AAG's Urban Geography Specialty Group were also helpful in this regard. Additionally, a teaching assistantship from the Department of Geography supported me in the early stages of my doctoral program.

I worked closely with many community gardeners and garden supporters in order to conduct this research. In New Brunswick, where I conducted much of this research, I am thankful for the New Brunswick Community Garden Coalition, the New Brunswick Community Food Alliance, Elijah's Promise, Unity Square Partnership, and the Cook Organic Garden Club. Other partners around the state included Come Grow with Us!, Ag in the City, Isles, the Greater Newark Conservancy, AtlantiCare, Rutgers Cooperative Extension, and the New Jersey Community Garden Conference and Freylinghuysen Arboretum. I would like to also extend special thanks to the East Brunswick Community Garden. My conversations there laid the groundwork for this dissertation.

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Sections of this dissertation have been published elsewhere. A version of Chapter 4 in forthcoming by Luke Drake and Laura Lawson as "Results of a US and Canada community garden survey: Shared challenges in garden management amid diverse geographical and organizational contexts" in *Agriculture & Human Values*. A version of Chapter 5 was published by Luke Drake and Laura Lawson in 2014 as "Validating verdancy or vacancy? The relationship of community gardens and vacant lands in the U.S." in *Cities*, volume 40, Part B (0):133-142. The material used in this dissertation is solely the author's work.

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Chapter One: Introduction and Research Questions

Community gardens are booming, or so it seems, across cities and regions in the global north. A whole variety of food production efforts that foreground community or urban settings are expanding in number and getting lots of attention. From Michelle Obama's White House garden to TED Talks highlighting urban agriculture, some may even say that this practice has become trendy. Research on the expansion and contraction of community gardening, however, is not new. In particular, research has shed light on the socio-political contexts in which individual community gardens emerge and in which general shifts in activity rise and fall (Bassett, 1981; Lawson, 2005). A common theme throughout many of these accounts is to focus on *why* community gardens emerge but not *how* it happens or how community gardens work. In the U.S., accounts explain upsurges in community gardens as a way to address food insecurity or urban blight (Hynes, 1996; Grewal and Grewal, 2012). Across the global north, they are also associated with healthy eating and addressing obesity, as well as a host of environmental and social concerns (Groenewegen et al., 2006; Wakefield et al., 2007; Nettle, 2014). Based on causes and outcomes, rather than how community gardens work, such explanations reveal much about the context of community gardens but portray the individual garden as just that—individual. While it may be easy to see what drives a group of people to start community gardening, it is unclear, given the existing litearature, whether those people learned about community gardening from other places, if they put in the labor by themselves to start one or got the help of others, and how they secured the materials to do that work.

This dissertation foregrounds how community gardens work rather than why they form in order to investigate those connections beyond the edge of the garden. While the search for causes—is community gardening really about poverty, gentrification,

environmentalism, etc.—reveals much about the concerns of people in one place, such research also casts community gardens as isolated entities subordinate to larger political-economic contexts. While such explanations have expanded our knowledge about the challenges community gardens face, these representations also have the effect of portraying community gardens as not "normal" parts of the city, merely filling in gaps (Moore, 2006). There is little to show—indeed, to even imagine—that community gardens are connected to each other or form any sort of local or regional dynamic. The exception is any networking that occurs in an emergency, short-term nature—such as citywide protests of the sale of publicly-owned garden land (Smith and Kurtz, 2003). But were there any network dynamics that preceded or followed those actions?

The body of research has reached a point where it is clear that there are a range of driving factors, but it is not completely clear how community gardens spread from place to place. Are they really just emerging in isolation, or are they spreading from place to place? Are people learning out how to do it by getting touch with others who have already done that work? Little is known about connections beyond the garden site to other places, and how the knowledge, labor, and materials to start and sustain community gardens might flow through those connections. This dissertation asks what is the role of networks in producing community gardens, and how are the flows of knowledge, labor, and materials enabling it?

Additionally, the focus on root causes and outcomes, rather than the process of starting and sustaining garden sites, makes it difficult to look for interconnections because the unit of analysis is often the individual garden rather than relations within and across gardens. If one set of gardeners is motivated by organic food access and another

by income generation, what reason do they have to connect (Drake, 2014)? And yet, those connections are already occurring, not only locally but nationally, as evidenced by the activities of the American Community Gardening Association, the Australian City Farms and Community Gardens Network, and the Federation of City Farms and Community Gardens in the U.K. These connections—which one can only assume bring together gardeners that are driven by various motivations—demand a new approach that allows us to investigate network dynamics rather than simply casting garden sites as reactions to larger political-economic forces. In this dissertation, I find a common link across community gardens by foregrounding how they work rather than why any particular set of people get involved.

By looking at how they function, I start from the assumption that what links all community gardens are their characteristics as sites of economic production based in commons management that require continuous labor due to the nature of food production. This is not a dismissal of the rich literature that on the historical development and geographical processes shaping community gardens, but an additional lens that can help shed light on their network dynamics. Regardless of the motivations and purposes, the people involved in any one site produce food and distribute it among themselves and to other places outside the garden; this production occurs in a variety of spatial contexts that all involve collective management. Gardens might be arranged as a set of individual plots, as a single garden space where all members decide what to grow, or as a mix of individual and shared plots.

Regardless of the spatial design within a community garden (Hou et al., 2009; Bradley et al., 2014), the space is collectively managed and gardeners are responsible for,

at minimum, maintaining shared areas such as pathways and social space, and shared resources such as tools (Eizenberg, 2012). The process of community gardening involves managing private and state property as common, cooperative and democratic forms of production, sharing surplus with others and with communities, and focusing on community well-being. At any given site, people must navigate decisions around how much work to put in and to appropriate from others, get the resources needed to do that work, and decide when and where to distribute the food. These characteristics show that economic practices are a common link by which to study network dynamics; they also align community gardens with other forms of non-capitalist production as part of a diverse economy (Gibson-Graham, 1996).

My identification of community gardens as sites of production contrasts, however, the economic identity of community gardens that dominates the literature. In the literature, community gardens are not seen as sites of economic action that might connect with broader networks to form local or regional economies. Instead, they are largely represented as bandages to the failings of the mainstream economy, filling in the gaps but ultimately subordinate and peripheral (Short et al., 2007; Sharzer, 2012; Rowe, 2014). In those accounts, it is not important to understand the processes of production and distribution because community gardens are framed as temporary solutions to food insecurity, blight, environmental degradation, or poverty (American Planning Association, 2007; Henderson and Hartsfield, 2009). Moreover, they are sometimes seen as merely tools to implement neoliberal policies (Rosol, 2012). When economic value is studied, community gardens are still framed relative to mainstream economic indicators such as property values and household spending rather than any endogenous dynamic

(Voicu and Been, 2008; Vitiello et al., 2010). Although the literature's focus on causes and outcomes has produced rich knowledge about the diversity of community gardening, and the constraints they face achieving longevity, the economic processes associated with them are marginalized—epiphenomena whose only connection to the outside world is to be on the receiving end of dominant economic forces.

Characterized as discrete and disconnected, these representations are similar to those of other sites of economic production outside of the "mainstream" economy. Understood only as epiphenomena relative to the economy, however, obscures community gardening's persistence over time, its spatial ubiquity, and the possible relationships and dynamics within and among these sites and other "solidarity" or "alternative" sectors of the economy. These sites range from alternative food networks and cooperatives to alternative currencies; for more examples, see (Leyshon et al., 2003; DeFilippis, 2004). Indeed, the notion that community gardens are fragmented is so entrenched that it is easy for some to claim they are insignificant compared to global economic forces (Sharzer, 2012). Seeing community gardens only as a "band aid" for the larger economy (in crisis or unevenly supplying goods and services), undermines its potential to insert a variety of community concerns (e.g. local development, health, environmental issues, property, access to fresh food) into understandings and practices of that larger (and essentially external) economy (c.f. Gibson-Graham and Roelvink, 2010). Discursively constrained as footnotes to the "real" economy, it would seem that community gardens merely emerge when a set of conditions in that economy are met.

Yet, everywhere community gardens seem to be emerging across a contrasting set of assumed causes. While some say community gardens are responses to urban blight

(Hynes, 1996), others find community gardens surging in blight-free areas (Hou et al., 2009). While some frame community gardening as a response to environmental degradation in food systems (Hendrickson and Heffernan, 2002), others say community gardeners care less about the environment and more about income (Burnett, 2009). While some argue that community gardens create individual neoliberal subjects (Pudup, 2008), others claim that they build collective identity (Eizenberg, 2013; Nettle, 2014). Over the past 125 years, people continued community gardening after economic depressions and social unrest ended, in spite of drastic reductions in government support and after the supposed need for them vanished (Lawson, 2005). In short, the existing explanatory framework is based on the causes of community gardens and not how they work, which is a dubious task and filled with contradictions when looking at community gardening as a whole.

Moreover, this food production is happening through collective management of shared space—if not in de jure property ownership, in practice they work through commons. Even if community gardeners do not intentionally set out to participate in alternative economies, they nonetheless engage in creating and sustaining a commons in seemingly the most difficult place to do so—cities, the centers of capitalist activity. These sites have been marginalized relative to dominant economic discourse, yet people opt to participate in supposedly increasing numbers. Many do not consider it a form of economy because of the power of the hegemonic story about community gardens and because there is so little known about their dynamics.

A range of non-capitalist economic sites, however, has been revealed by many scholars using the theoretical framework of “diverse economies” (Gibson-Graham,

1996). This is a framework that rejects representations of the economy as singularly capitalist and instead represents the economy as a diversity of capitalist and non-capitalist processes. The work of post-structuralist scholars to theorize difference in social categories such as race and gender is well regarded in contemporary social theory. Gibson-Graham follows this tradition further in reading for economic difference in order to reveal economic agency in places that may otherwise be seen as essentially subordinate to capitalism, such as community gardens.

The diverse economies approach relies on a fundamental rethinking of traditional Marxist concepts. In this approach, draws on anti-essentialist Marxism…class is theorized as a process rather than as a group of people, and the process of appropriating and distributing surplus labor is used to identify class relations (Resnick and Wolff, 1987). Both exploitative and equitable economic relations can be found in a variety of locations beyond traditional firms. This is used not only to examine cooperative businesses but also sites that do not have typical "producer" and "consumer" roles, such as the household—and here, the community garden (Cameron and Gibson-Graham, 2003). However, this alone is not enough theoretical weight to carry a study of network dynamics. Although diverse economies theory might let one see the common ground between community gardens, the question remains of how to explain network dynamics within and between them. Diverse economies has provided an ontological shift in terms of what constitutes the economy, but there are few tools to understand networks, clusters, and flows.

Relational economic geography (REG) provides the conceptual tools for a study of network dynamics (Bathelt and Glückler, 2003, 2011). There have been several

branches and schools of thought in economic geography dedicated to understanding flows of resources and how such flows explain the spatial distribution of economic activity. Commodity chain analysis, global value chains, and "geographies of practice," among others, seek to explain in various ways the connections between producers, distributors, and consumers of goods and services in a spatially-explicit manner (Gereffi et al., 1994; Dicken et al., 2001; Ibert, 2007). More recently, REG has been inspired by the "cultural turn" in geography to join view economic activity as socially embedded; economies are situated in local, social contexts as well as constituted through connections with other places (Granovetter, 1985; Barnes, 2001; Jones, 2008; Staber, 2011). It provides an alternative to neoclassical and orthodox Marxist accounts of economic action as either atomized or subordinate to the logic of capital accumulation (Glückler, 2007a). It theorizes economies, in contrast, as horizontally networked. These characteristics are suited to investigating the network dynamics of community gardens given the emphasis on place and the way "non-economic" concerns shape economic action.

REG is still rooted, however, in the decision-making practices of capitalist firms. In these formulations, the social affects the economic and firm success is contingent upon network relations—but the underlying ethic is solely profitability and competitive advantage (Bathelt et al., 2004). This contradicts another aspect guiding the management of community gardens, which is a concern for community well-being. A third conceptual piece is needed, then, because diverse economies is not enough to theorize community gardening. Put simply, just because an economic process might be non-capitalist does not mean it is equitable or sustainable.

"Community economy" is a research approach that extends Gibson-Graham's theory of economic diversity, but recognizes that not all non-capitalist economies are desirable, just, or sustainable. Instead, this approach problematizes the ethical decisions that individuals and organizations make regarding production, distribution, and consumption. It does not take cooperation as a given, but as an open question always needing to be answered (Cornwell, 2012). In her book *A Postcapitalist Politics*, Gibson-Graham (2006) does not provide a structure for what a postcapitalist economy will look like, but instead forms a set of "ethical coordinates" that researchers and activists can use to interrogate economic decision-making in ways that support commons, community well-being, and the environment. As Miller (2013) explains, community economy is not a type of economy but a set of ontological, ethical, and political tools. As such, it is an attempt to re-embed the economy into society (cf. Polanyi, 1944), and insert ethics into economic processes (see also Gibson-Graham et al., 2013). In terms of this dissertation, even though I start by recognizing economic diversity as an ontology, I am interested in exploring whether and how those ethical concerns shape network dynamics and flow through them. Certainly, not all community gardens are likely to share those concerns, just as there are a range of contrasting outcomes associated with the practice in general. An analysis based on the ontology of diverse economies, the socially-embedded network dynamics of REG, and the ethical concerns of community economy, though, will best serve this dissertation.

Taken together, a network approach to community economy forms the conceptual basis of this dissertation and is elaborated in chapters two and three. Other than very recent attempts to outline supply chain management in community economies (Safri,

2014), however, a conceptual framework for doing so has not yet been articulated. In theoretical terms, community economy has not addressed regional economies, why and how clusters form, or how enterprises get started and sustained through connections with each other and with institutions—a major contribution of REG to understanding capitalist economies. It has become quite clear that capitalist firms are successful precisely because they are not isolated but rather through their relational dynamics with partners, institutions, and competitors (Yeung, 2005b). If the success of capitalist firms is constituted through network dynamics as much as it is through the business decisions within frims, what might that mean for community economy theory? The theoretical contribution of this study is its development of a relational conception of community economy; the relevance is that it is important to understand how community-based enterprises might constitute regional economies. This dissertation works toward that end by investigating the connections and flows that constitute community gardening.

Research Questions

Through research based in New Jersey, but leading off with contemporary and historical surveys of North America, this dissertation examines the network dynamics of community gardening to understand how flows of knowledge, labor, and materials shape its geography. Although such topics as alternative food networks suggest some of the ways that community enterprises may be interlinked, relational dynamics are not foregrounded and theorized. Furthermore, much of the work done by community economies researchers has been to reveal the economy as already diverse and filled with non-capitalist practices. The time is right to also theorize sites of community economy as

networked and not as discrete, isolated points in an otherwise interconnected capitalist landscape (St. Martin, 2009).

This study situates community gardens as a case in the growing field of economic geography studies that examine non-"mainstream" sites of production (of goods and services) and consumption, making up much more of the economy than previously recognized (Emery and Pierce, 2005; St. Martin, 2005b; Williams and Nadin, 2010a). And like many other diverse or community-based economic spaces, community gardens are rarely represented as being part of a larger set of economic flows—aside from being subordinate to dominant capitalist economy. I see an opportunity to move beyond single case studies to an understanding of the network dynamics that may also hold resonance with solidarity economies and community resource management (St. Martin, 2001; Gold, 2004).

Three sets of research questions arise from this situation where community gardens are supposedly both superfluous and fragmented. These questions are grounded in a network approach that values horizontal linkages, as evident in much economic geography research (Grabher, 2006; Jones and Murphy, 2011), and concern for community well-being, a feature of community economies research (Cameron and Gibson, 2005a; Cameron, 2011; Hill, 2011). In this approach, I do not start from vertical conceptualizations of the production and maintenance of these sites, which would constrain the findings in a "top-down" versus "bottom-up" dualism. Instead, I borrow tools from relational economic geography to understand the community garden as a network itself, and as a part of broader networks (Yeung, 2005a). As such, this involves examining both internal and external dynamics. In REG research on capitalist industries,

these dynamics produce spatial patterns such as clustering as firms seek competitive advantage. In community gardens, it is unknown how those dynamics affect spatial patterns or economic action. The questions thus entail addressing where community gardening is located and how it functions in a network approach.

Which places foster community gardens?

A network analysis means breaking away from studies that focus on individual sites or places. The collection of case studies that comprise most community gardens research each suggest particular populations and particular places that engage in these practices—whether it is downtrodden residents of Detroit or New York City, or foodies in the San Francisco Bay Area. They are largely thought of as an urban phenomenon, with various "urban" qualities driving people to do it. There has not been a systematic survey, however, to actually say where community gardens are found across the U.S., and what the process of community gardening is like across these broad areas. Are there regional spatial concentrations of community gardens? Are these spatial patterns distributed across urban, suburban, and rural areas? The classic tale of community gardening suggests a grassroots effort by neighborhood residents—but are "neighborhoods" the only actors at work here? Are there organizations that reach across cities, regions, or states to support community gardens? If so, do these supporting actors experience community gardening the same way?

How do internal dynamics govern community garden maintenance?

I use the diverse economies approach to reimagine community gardens as enterprises requiring decisions about how to produce and distribute food. As such, then it

can be assumed that there are internal dynamics at work as with other types of firm (Ettlinger, 2003; Yeung, 2005a). Rather than presuppose that networking happens between unified and monolithic sites, it is important to understand how individual community gardens are themselves constituted as networks in order to see the borders as porous and potential connections beyond the site. Relational economic geography has shown that capitalist enterprises do not function as discrete entities whose outcomes are solely the result of actions within the firm, but that ethical concerns, reciprocities, and community are parts of that process (Amin and Roberts, 2008). I use those same concepts to examine community gardens for their internal dynamics. How are rules agreed upon and shared space maintained? Are decisions made in a collective, decentralized, or hierarchical way? Who puts in the surplus labor to create and sustain a community garden? What informs people's decisions regarding that surplus labor? What are the materials vital to the sites and how do community gardeners manage them? Which types of activity, knowledge, and labor maintain gardens and which undermine gardens or create conflict?

How do dynamics between community gardens affect the work of garden sites?

External dynamics play an important role in many industries and explain clustering across regions as well as increased productivity within firms—for example, through "knowledge spillovers" that happen through face-to-face contact and employee movement between firms (Howells, 2002). How might these processes work in community gardens, and to what effect? My research suggests that knowledge, labor, and materials are key resources for establishing and maintaining community gardens (Drake, 2014). How are these resources exchanged? How might networks form through which

those flows occur, how does one gain access to existing networks, and what makes those relationships effective? If there are commitments to community or environmental well-being at one site, do such ethical commitments "overflow" the site to affect others?

In sum, these research questions use a framework from relational economic geography that views economic action as both interconnected across space and situated in place; this framework is elaborated with a diverse economies framework that views economic action as the production, appropriation, and distribution of surplus labor. Together, my framework draws together an economic geography of community gardening. These questions address the connections and flows that are might be necessary in establishing and maintaining these spaces, the contexts that shape those flows, and the resulting spatial patterns. To understand such questions, we need to break out of a viewpoint where community gardens are fragmented and static. We can benefit from a networked (and networking) understanding of these sites.

Methods and findings

The research design, explained in more detail in Chapter 3, uses mixed methods based around the case of New Jersey, with initial work drawing on data collected from across North America. Throughout this work, I focus on the analytical themes of knowledge, labor, and materials—what I define as resources—in order to trace networking practices and effects. This research first assesses broad trends through a survey of organizations involved in community gardening in the U.S. and Canada in order to understand what kind of places foster community gardening. It begins the analysis of internal dynamics by examining the shared characteristics in community

garden management across these contexts. It not only provides a snapshot of national and regional spatial patterns, it also reveals key issues around knowledge, labor, and materials that are faced in a range of places and organizations. The survey also begins to address external dynamics by collecting data from both gardens and also organizations that support community gardens.

I then use archival research on U.S. community garden advocacy from the late 19th to early 21st centuries in order to develop a genealogy of the discourses surrounding this phenomenon. It shows how the notion of community gardening as a subordinate economic function is a dominant narrative that is consistently put to work in order to marginalize alternative discourses of economy. In particular, it unpacks institutional context by showing how representations of community gardens that were first made by government and non-governmental organizations became normal assumptions about the phenomenon. These historical discourses are now reproduced by community gardeners—representations that affect how sites are established and sustained.

These broader geographical and historical trends then informed research in New Jersey. I conducted interviews in 19 municipalities, as well as participant-observation in the city of New Brunswick over a period of two years. In the latter, I was active in the following groups: the New Brunswick Community Garden Coalition; the Urban Agriculture workgroup of the New Brunswick Community Food Alliance; Ag in the City, a statewide urban agriculture network; the New Jersey Community Garden Conference; and member and president of the Cook Organic Garden Club, a 75-member community garden.

My work examines the dynamics of community gardens, which span locations and moments of production and consumption. My research reveals those processes and practices that link gardens, institutions, and agencies into networks. These networks can shape the distribution of community garden sites by directing flows of knowledge and resources. Localized community networks, however, are needed to mobilize residents for continued food or green space production. These interconnected efforts—which involve grassroots groups, government and non-governmental actors, and even private firms—are elaborated in four network typologies, which I discuss in the conclusion. Rather than one-off projects isolated within capitalist urban landscapes, these non-capitalist sites of production work through complex webs of resource exchange.

This work also sheds light on the dynamism of these uneven geographies of access to resources. Urban water access, for example, is a function of limitations in the built environment and the institutional context of regulation. Vacant lots might not even have piped water available, and even in cities with agricultural zoning, urban farmers might pay more for water than rural farmers because they are charged higher residential rates. By sharing knowledge, local clusters can build capacity to address such challenges. These relationships, though, are based on reciprocity and concern for community well-being and are built carefully over time. External knowledge is gained effectively through face-to-face interaction in other places, and is best assimilated by adapting it to local conditions. As a result, the local circulation of knowledge, in addition to the influx and adapation of external knowledge, builds innovation and can help mitigate local constraints.

In theoretical terms, a relational conception of community economy is the confluence of a number of spatial and discursive flows, particularly related to knowledge. On the surface, network dynamics of community economy are similar to those in capitalist industries. Much of the inter-firm and inter-site networking occurs among everyday, local partners, and stems from reciprocity and trust-building; extended spatial connections are important for bringing in new knowledge and other resources. This clustering, however, offers less in the way of competitive advantage and more in terms of resource sharing and distribution. Community gardens might aim for profit or income generation, as would related ventures in cooperative or solidarity economies, but they are driven (in part) by concerns for community and environmental well-being. The primary effect of clustering is not to attract firms to the region or locale but to facilitate the endogenous development of cooperatives and other alternative enterprises. This is not to say these activities are constrained or bounded by the local scale (cf DeFilippis, 2004), but that within these milieux, networks more explicitly connect production with community and institutional processes.

Knowledge flows in a community economy relate to questions of how, who, and where. Beyond technical knowledge of the particular form of production, whether agricultural or otherwise, this study revealed the importance of knowledge of individuals and organizations in places that can help with establishing and sustaining the work site. Knowledge of how to manage a community-based enterprise is shared between and within firms. Techniques for distributing surplus labor are learned outside of clusters, but the process is slower than for firms with everyday contact with others. As such, knowledge is embedded in place and not easily transferred; it does travel, though, and

when it does it seems most effective through face-to-face communication. That is, external knowledge is most easily transferred not through remote communication but through visits to other community economy firms elsewhere and through in-person meetings at conferences. This external knowledge, acquired through face-to-face interaction, is implemented most productively back home if there are strong local networks in place.

Chapter outline

The next chapter reviews the literatures on community gardens and economy geography that inform the study, followed by the research design in the third chapter. The empirical findings and discussions begin with the fourth chapter, "What is shared in the practice of community gardening? Results of a U.S. and Canada survey of community garden organizations," which documents spatial patterns and national trends through survey and GIS analyses. This chapter draws on a collaborative research project with the American Community Gardening Association, which exceeds the scope of this dissertation. I thus draw on survey analysis that relates to my dissertation's research questions. Through a survey of 445 organizations involved in community gardening, it shows that community gardening is prevalent across the U.S. in urban, suburban, and rural areas. It confirms that a shared characteristic that unites community gardens is the economic action that takes place in them. This is made clear through the way the survey results reveal several key issues in community garden management. Respondents represented a range of organizational types, from neighborhood to regional scales. They revealed what they found to be common benefits and challenges associated with their work. Accessing land, water, and funding, and keeping people interested and involved in

working at these sites are recurring challenges across contexts. The results in this chapter support the subsequent ethnographic research by providing a typology of urban and suburban sites in which to gather data and a basis for forming interview questions and observations.

The fifth chapter, "The tension of means and ends in garden advocacy: A genealogy of the internal and external dynamics of community gardens," continues the national assessment of community gardening by shifting from the spatial patterns in the first chapter to the historical trends in how these practices traveled geographically and took root in certain places. It analyzes the actors involved in promoting community gardening and travels of this advocacy discourse. Through a genealogy of published documents from 1895 to 2012, it traces a dominant narrative where community gardening is represented as a temporary activity on temporarily-available land. This history of institutional discourse, driven by government and philanthropic agencies, shaped the economic identity of community gardens as temporary spaces on temporarily-available land. Such representations were reproduced again and again, so much so that it continues to shape how grassroots and everyday efforts frame their efforts as an interim response to mainstream economic forces. This chapter adds a historical perspective to the literature in relational economic geography that stresses institutional context, shows how community gardeners encounter entrenched representations of community gardens as subordinate to the mainstream economy, and spatializes the historical trajectory of such dominant narratives.

Chapter six, "Community and economy meet in the garden: Rethinking community gardens as sites of production," examines the internal dynamics of

community food production. It explores empirically how community gardeners produce, exchange, and work to distribute goods and services via a variety of collective and cooperative organizational forms. Through anti-essentialist class analysis that allows me to problematize the relationships between community gardeners, this chapter examines how individuals and organizations contribute in different ways to the function of these sites and connect with local food systems. Drawing on interviews and participant-observation in New Jersey, it reframes community gardens as sites of labor and production. Labor flows within community garden sites are subject to individuals' decisions about how, where, and when to contribute surplus labor to the site and to the organization. It is a case, then, to examine how urban food production is entwined with concerns for community well-being. It brings to light not only the tensions within these sites and organizations, as some members put in more work than others, but also the ways that gardeners work to distribute food externally in a variety of ways.

The dissertation examines local clusters in the seventh chapter, "Know-who, know-how, and know-where: Building and sustaining local networks." In seeking to reveal the network dynamics of community gardens, I also set out to work with research partners to figure out what these connections mean and how recognizing and visualizing them can help improve our knowledge about communities, connections to other places, and what we can do about them. For this chapter, I worked with the New Brunswick Community Garden Coalition in a participatory GIS project in order to develop maps of the distribution of community gardeners' homes in relation to their garden sites. This work revealed that knowledge of place is produced through long-term embeddedness and through circulation of ideas among people who are embedded in a community. Further

interviews and participant observation provided data about “community brain trusts”, which is a term that one participant used to describe clusters. Social networks are important, but access is gained only with reciprocity and trust through working for the community and not just individual profit. This combination of know-where, know-who, and know-how is generated in local clusters and through linkages with other places.

The eighth chapter, “Local networking among institutions and community gardens” unpacks the relationships between government, institutional, non-profit organizations, and community residents that are crucial to the production of community gardens. In particular, it examines institutions as nodes within community garden networks, as well as institutions-as-networks to assess the dynamics within institutions. Drawing on data collected throughout the dissertation research, it finds that local institutions such as governments, large non-profit organizations, religious organizations, and private sector actors can be valuable parts of local community gardening networks. Institutions can work through extended spatial relationships and their own local capacity to initiate community gardens or channel knowledge and resources to community groups. In order to sustain such sites and make them productive, however, the interface with a community requires trust and reciprocity, gained through working in and for the community. The spatial configuration of these relationships is subject to vast differentiation regionally, though, and results in an uneven geography of access to knowledge and resources. In larger cities with more developed non-profit sectors, systems are already in place. In smaller towns and suburbs, there can be much less of a community development environment. There, people reach out online, build on informal relationships with friends and family members in other countries, and benefit from

spillover effects of nearby large cities' community gardening efforts. Those more distanced relationships range from middle class suburbanites using the Internet to work with others to working class immigrants receiving seeds that are sent from home countries.

A concluding chapter draws these themes together to put forth some components of the relational dynamics of community gardens and of community economy more broadly. As an economic practice rooted in concern for community well-being, there are undoubtedly locally-specific factors in how such projects can work. There is something of a dilemma, then, since such learning processes would involve the transfer of place-based knowledge. Any one set of practices honed in a particular community is suited toward that community, making it difficult to extract and replicate elsewhere with different characteristics. We can better understand this process through the contributions in relational economic geography of knowledge transfer, along with community economies theory of well-being. Knowledge is often divided into two types—explicit and tacit. Explicit knowledge is easily codified and shared across space—written texts, technical guides, and info sheets, for example. Tacit knowledge is formed through experience, is more contextual, and is thus more difficult to codify into easily transferable form. In this study, I set out to answer the question of how this tacit knowledge might be packaged, transferred to other places, and adapted to work elsewhere. What I found, however, is that it was not as much about transferring specific tacit economic knowledge, but more about transferring skills and techniques with developing community capacity and to mobilize tacit knowledge. In other words, when I asked people how they learn from other places, explicit knowledge is helpful when it is adapted to their own tacit

knowledge about their communities. Organizations often look outside their localities for advice and to learn from others, often with success. Successful community gardens tend to appear, though, when actors within a given locality work face-to-face. In, this dissertation provides an ontology where community enterprises are networked rather than singular entities, and where local and regional community economies are more than just a collection of individual sites but a complex system of interconnections.

Transparency of data sources and funding

Before explaining the outline of chapters, it is necessary to clarify the design, data collection, and analysis of this dissertation in relation to my current professional appointment. Although I am responsible for this dissertation, much of the data collection overlapped with my faculty appointment as research associate in the Department of Landscape Architecture at Rutgers University. In this position, I have been responsible for designing and conducting research on urban agriculture and community gardening in New Jersey. My professional work, and my dissertation research, occurred largely concurrently, although my dissertation research began before my appointment started. As a result, my fieldwork, data collection, and analysis came to serve dual purposes. The questions and analysis in this dissertation, however, are completely my own. What this means is that I designed my data collection so that the data would serve both positions; for example, interview questions addressed both my dissertation and my professional research. Only data relevant to this dissertation were used from this data collection.

Proper acknowledgement must be attributed, then, to the Department of Landscape Architecture, the School of Environmental and Biological Sciences, and the New Jersey Agriculture Experiment Station, which facilitated much of the data collection used in this dissertation. In particular, this involved a collaborative research project with

the American Community Gardening Association and interviews with individuals involved in community gardening across New Jersey. This work was made possible in part through New Jersey Agricultural Experiment Station Hatch Grant, project NJ84105, “Culture and context of community gardening and urban agriculture in New Jersey;” the principal investigator was Laura Lawson, who served on my dissertation committee. Additional fieldwork that happened outside of my professional responsibilities was made possible through a pre-dissertation travel award from the Rutgers University, Graduate School—New Brunswick.

Chapter Two: Literature review: Community gardens and economic geography

The introductory chapter raised the question of a networked understanding of community gardens. Below, I bring together several strands of literature that examine community gardens to make that case. Research has revealed many aspects about community gardens—social, historical, economic, political, environmental, and design contributions make up this broad effort, which I discuss below. Much is still unclear, however, about how these sites spread and how practitioners learn to manage, sustain or expand them. This dissertation starts theoretical framework made of three parts. First, I start from a "diverse economies" perspective in order to see community gardens as sites of production. Second, I draw on the tools of relational economic geography (REG) in order to assess how they might be networked and how those networks might be embedded in place. Third, I use "community economy" theory to problematize the ethical economic decisions that are shaped by these networking practices.

This chapter first reviews the key themes that have emerged through community gardens research and argues that a network approach will better understand these spaces and their constitutive processes. I then discuss my anti-essentialist approach to research, and the politics that guide my ontology of community gardens. Then, I discuss the theoretical framework that draws on diverse economies, relational economic geography, and community economy, as introduced in chapter one. This framework provides a springboard for the empirical analysis, which I discuss in the next chapter on methods.

Community gardens in practice

Community-based food production is well-documented around the world, and community gardens have been loosely understood as a form of collective management of such spaces (Wade, 1987; Lyson, 2004; Lawson, 2005; Drescher et al., 2006). "Community" has a variety of interpretations, including the practice of production on public land, cultivation by a collective, or food distribution to community clients. My previous research shows that people understand community differently and may refer to a social enterprise for a community, a grassroots effort to produce and consume your own food, or inviting people to tend gardens even if food is not kept by them.

Typically, community gardens operate in three forms. The first model, common in the U.S., is a garden site with rows of garden plots that are assigned to individuals or families. Within the plots, gardeners make their own decisions about what to grow and when to harvest as long as those actions are within any set of rules that apply to the overall garden. For instance, a garden may decide to use only organic practices or to not allow trees so that plots are not shaded. The second type has no assigned plots but instead all members garden collectively and make decisions about what is to be grown. Third, many community gardens feature both individual and shared plots. There is generally shared space such as a toolshed, picnic tables, and compost or waste areas that serve the whole garden.

This description of a collection of individual plots might bear resemblance to the allotment garden tradition in Europe; however, key differences lay the potential for collective economic ethic in community gardens as opposed to allotments. First, it is common for allotment gardeners to put toolsheds and picnic tables within their plots, whereas community gardens have those spaces that serve the entire garden. The design

marks differences in approach to collective management. This difference comes primarily from the legal standing associated with allotment gardens in Europe. In England, France, and Germany, allotment gardens emerged as a result of land enclosures before and during the industrial revolution as government authorities provided land to compensate for low wages and loss of livelihoods in the transition to urban living (Local Government Association, 2008; Nilsen, 2014). As workers agglomerated in cities, local authorities began providing land for gardening.

Allotment gardens are thus a form of entitlement that is unique to some European countries based on the idea that the state confers the right for its citizens to have garden space; they exist nowhere else in the world (Nilsen, 2014). Since there is no broad legal mandate in North America for local government to provide garden space like there is in countries with allotment laws, this is a different category of food production given that difference in institutional context. Although the legal mandate may not keep up with demand and does not guarantee permanent land access (Groening, 2000), there are simply no laws in the U.S. or other industrialized countries outside of Europe that provide space for urban gardening.

The point here is that allotment gardens are created around individual households' rights to land for food production and not a sense of community well-being—plots just happen to be in close proximity because of spatial planning. Although concerns for community certainly may emerge through allotment gardening (Drescher et al., 2006), they are not organized around any sense of collective management. The state provides these spaces and they are organized as collections of individuals.

In contrast, community gardens are supposedly organized around some type of collective ethic or concern for community. Regardless of the spatial design *within* a community garden, the garden space is collectively managed and gardeners are responsible for, at minimum, maintaining shared areas such as pathways and social space, and shared resources such as tools. Since community gardens are not officially required by law, there are no standard mechanisms for creating or sustaining them. Gardeners, and any other partners they enroll, must figure out how get land, design the garden site, and acquire any resources they need (Lawson, 2005; Milburn and Vail, 2010). Whether community gardens are an outcome of deliberate efforts to build a commons, or simply just how they are produced in light of the lack of state provision of gardens, the actual practice of community gardening has continued to grow for more than a century (Lawson, 2005). Indeed, even in Europe community gardens have emerged alongside allotment gardens (Rosol, 2005; Local Government Association, 2008; Rosol, 2010, 2012).

In sum, the practice of community gardening purports some sort of collective management just in order to stay working. This is not to say that all community gardeners share an ethic of collectivity, though. Moreover, it does not explain how these sites are expanding and how resources flow as part of that process. Before discussing how community gardens might have economic dynamics, though, a broader look at how community gardens are portrayed relative to the economy in the literature is needed to understand how community gardens are framed as insular and fragmented.

Community gardens relative to the economy

This dissertation examines community gardens as sites of economic production, which requires not only a theoretical framework of economic diversity that I explain below (Gibson-Graham, 1996), but also an unpacking of the way the literature already characterizes community gardens relative to the economy. Simply put, my goal is not to identify community gardens as economic, but to radically rethink an existing economic identity that is provided in the literature. This identity posits community gardens as epiphenomena to the capitalist economy, with patterns of emergence and decline that depend on logics of capitalism. This identity is often hidden among the many other diverse characteristics found in the literature. There, community gardening reflects diversity in many ways—in terms of cultural practices and social movements, for example (Saldivar-Tanaka and Krasny, 2004; Eizenberg, 2013)—but its economic identity in the literature is fixed and singular as subordinate to the economy. Gardens are said to emerge, for instance, during macroeconomic downturns or when commercial food systems are strained (Lawson, 2005); these macroeconomic conditions manifest locally in blight and abandonment, which create opening for community gardens to be built (Henderson and Hartsfield, 2009). They ameliorate during times of crisis but are seen as no longer needed after a crisis ends (Moore, 2006). Even though community gardens may be the largest form of urban food production in the U.S. (Vitiello et al., 2010), they are given an identity where the economy ultimately determines their existence. In spite of the cultural and social diversity seen in the community gardens literature, there is an essentialist view of gardens relative to the economy: they are nearly always portrayed as being in a subordinate relationship to the economy and rarely as sites with their own economic dynamism.

Before explaining these themes further, I will first clarify how community gardens are represented in the literature relative to urban agriculture, because the literature creates a binary division between those two categories that helps subordinate community gardens in economic terms. Urban agriculture has a long history and takes many forms around the world, of which community gardening is just one type (Smit et al., 1996; Mougeot, 2006). It is arguably an ambiguous term, and urban agriculture is used and defined in many different ways. Canada's International Development Research Centre defines it quite broadly as food production and distribution within and around cities, a starting point for much research in the global south.[1] For others, it means agriculture practiced by urban households, even if production is in rural areas (Zezza and Tasciotti, 2010). In general, though, it has become associated with livelihood strategies in the global south, whereas in the global north it is associated with a broad set of commercial as well as community-based food production activities. The city is the locus of attention, and although urban agriculture scholars debate the meanings of "urban", it is the site of these actions (Bryld, 2003).

Recently, and especially in the U.S., urban agriculture is often understood specifically as a commercial endeavor, complete with business licensing, job creation, and profit motives. The City of Chicago, for example, states "urban farms grow food that is intended to be sold, either on a nonprofit or for-profit basis. Due to their commercial purpose, urban farms require a business license."[2] This definition of urban agriculture,

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[1] *Cities Feeding People* was a program of the Canadian International Development Research Centre, which began urban agriculture research in the early 1980s (Mougeot, 2006).

[2] http://www.cityofchicago.org/city/en/depts/dcd/supp_info/urban_agriculturefaq.html

though, is contrasted with those food production activities that are seen as *not* urban agriculture—community gardens. The City of Chicago, again as an example, in contrast, specifies that "plants grown on [community gardens] are intended for personal use, for charity, or for community beautification purposes." Rowe (2014), comparing urban agriculture and community gardens, sees the latter as a commons that beautifies neighborhoods and provides space for social interactions, but for her urban agriculture is different because it is truly productive in an economic sense: "[urban agriculture is] about growing food … at a scale that has the potential to put a dent in food security challenges." In other words, urban agriculture is economically productive whereas community gardening is seen as something else.

Such observers define urban agriculture and community gardens in binary terms vis-à-vis the economy. On the one hand, urban agriculture is seen as a business enterprise that actively constitutes local economies through food production. On the other hand, community gardens are characterized as a commons and as informal spaces where people work toward social outcomes through food production (Mees and Stone, 2012). Nettle (2014), drawing on her research in Australia, forthrightly states that environmental stewardship and community-building are as important as horticultural productivity; food is not only imbued with social and environmental values but maximum yields simply are not the primary objective.

Whereas the literature imbues the food production that takes place through urban agriculture with economic dynamism, it characterizes that same production in a community garden as a role supporting other purposes. In this narrative, urban agriculture can be a constitutive part of the economy, whereas community gardens are the

constitutive Other. Urban agriculture produces food that affects other places, whereas community gardens are insular sites of neighborhood interaction, even though some researchers explicitly argue that community gardens are the dominant form of urban food production and distribution in the U.S. (Vitiello et al., 2010). This binary construction puts community gardens in a subordinate position to urban agriculture in economic terms.

Such representations suggest that since community gardens work toward social outcomes, they are less of a site of economic action and more of an economic support role. Yet, studies of both non-capitalist enterprises and capitalist firms[3] have repeatedly shown the importance of social outcomes and "community" for economies. Furthermore, it is not just that the social sphere affects the economic sphere, but that social and economic processes can be part of the same production activities. The construction of this binary—where urban agriculture is about profit and "serious" food production, and community gardening is about commons and social change—ignores a large body of literature on alternative, solidarity, and community economies where production is deliberately entwined with social concerns (Leyshon et al., 2003; DeFilippis, 2004; Gold, 2004; Miller, 2006; Gibson-Graham et al., 2013). This includes economies of commons-based production (St. Martin, 2005a). Hill (2011) specifically reveals community food economies in the urban Philippines. I elaborate these literatures below, but for now the

[3] In capitalist economies, production is recognized as being shaped by such "non-economic" processes as social networks, institutions and cultural norms. These norms are not separate from firms but permeate them through and through. Social concerns can even be at the center of economic action (as long as they do not undermine the bottom line), and they affect the location decisions of firms (Porter, 2000; Stam, 2007). In this dissertation, I use the diverse economies framework to go further and argue that the economic and social spheres are not only mutually constitutive, but that they can take hybrid forms through sites such as community gardens.

takeaway is that the binary that ascribes economic action to urban agriculture and not to community gardens does not make sense given the range of economic geography research that foregrounds community. I argue next that the way community gardens have been researched has shaped many of these representations.

A supporting, yet surbordinate, role in urban economies: Causes, intentions, purposes, and outcomes in community gardens

It is not just in relation to urban agriculture that community gardens are given subordinate economic identities; the explanations of community gardens vis-à-vis urban economies defines them as economic bandages but not sources of economic dynamism. The association between cities and the capitalist economy underpins much of the analysis of community gardens. They are incongruent with society's expectations of cities—nature in cities is supposed to be aesthetic and not a source of food, and cities are sites of capitalist production and not "other" economies (Lawson, 2004; Moore, 2006; Gabriel, 2011). As such, what one sees in the community gardens literature is a tendency to view these sites as anomalies and must be explained in ways that support those normative assumptions about cities and the economy. They are out of line with what we think of as "normal" urban space and so they are explained not through their own set of economic dynamics but through an implicit assumption that there is a failing in the "normal" urban economy.

This is evident in the way that the community gardens literature has focused on revealing the causes and purposes—the before and after—of these sites rather than how they function. Although not usually explicitly defined as urban space, community gardens are often characterized through urban qualities such as high density, small

parcels, and limited green space; in other words, they have become associated a type of urban space. As I review next, they are also understood as a result of economic problems that manifest in cities such as food deserts and blight (Schmelzkopf, 1995; Hynes, 1996; Hou et al., 2009).

The implication is thus that community gardens emerge in cities in part because of some characteristics uniquely associated with urban economies. Such approaches have revealed much about the places in which community gardens are located and in which they emerge, as well as the multiple effects they have on people and communities. However, the way they have been described largely frames them as subordinate to external processes rather than having their own dynamic with potential to connect beyond the site or the neighborhood.

A scan of the literature reveals that community gardens are framed as resulting from, and a solution to, the lack of healthy food and oversupply of vacant land that characterizes troubled urban economies. In the global north, NGOs and local governments are increasingly interested in community gardens as interventions to address a host of problems in cities and neighborhoods (Henderson and Hartsfield, 2009). Currently, for instance, they are part of the suite of measures addressing community food security (McCullum et al., 2005; American Planning Association, 2007; Short et al., 2007; Grewal and Grewal, 2012). Research on urban agriculture has a longer tradition in the global south, where it addresses rapidly urbanizing regions (Freidberg, 2004; Mougeot, 2006). The literature on urban and peri-urban agriculture in the global south has long pointed out its role in livelihood strategies, of particular concern in countries without social safety nets (Smit et al., 1996; Altieri et al., 1999; Lynch et al., 2001). In

developed countries that supposedly have these safety nets, food access is often couched in the context of *healthy* food, along with environmentalism (Pothukuchi and Kaufman, 1999). This advocacy is bolstered through studies in countries like Canada, the Netherlands, and the U.S. that suggest community gardens can support healthy eating habits, and that cities can provide some degree of their own healthy food (Groenewegen et al., 2006; Alaimo et al., 2008; MacRae et al., 2010; Grewal and Grewal, 2012).

In addition to food security, community gardening is often portrayed as a tool to address other economic and social issues. Governments and NGOs are drawn to it in the face of pressures to "green" cities, adapt to the process of "shrinking" cities, and alleviate the burdens brought on by foreclosures (Rosol, 2005; Schilling and Logan, 2008; Lawson and Miller, 2013). Various notions of community and social capital are also seen to be outcomes, although the relationship between community and food is not clear. Altieri et al. (1999), working in Cuba, find community effects to be secondary to the amount of food produced, but others argue that community is the primary output (Mees and Stone, 2012). Scholars working in Australia, North America, and the U.K. also make the case that food production goes hand-in-hand with community development and that community gardens can contribute to social capital through civic engagement (Feenstra et al., 1999; Kingsley and Townsend, 2006; Levkoe, 2006). Often, community garden organizers hope to achieve a set of specific goals such as food access, environmental education, or community development (Pudup, 2008). Food, health, and community are thus often presented as core outcomes of community gardens (Armstrong, 2000; Baker, 2004; Tranel and Handlin, 2006).

It should be noted, however, that outcomes can flow from these activities without specific agendas to do so. These multiple and overlapping outcomes make it difficult to classify community gardens by sets of fixed purposes since multiple activities and outcomes occur within and through these sites, changing over time (Saldivar-Tanaka and Krasny, 2004). In short, these sites can vastly exceed the expectations and intentions of those individuals and institutions that advocate and plan community gardens. For example, programs intended to create individualized business owners have instead resulted in cooperative enterprises (Hobson and Hill, 2010), and disadvantages urban residents have resisted efforts by community garden organizers to get them to grow their own fresh produce simply by refusing to participate in the garden (Drake, 2014). Yet even with such diversity found across community gardens, there is still a singular economic identity in the literature that deprives gardens of economic action that may be found in other forms of food production like urban farms.

Represented as temporary, community gardens become known as anomalies

Community gardens are not just seen as ameliorative spaces, but are also represented as only temporarily needed; this further supports their subordinate identity and positions them as anomalies in the urban landscape. Although the previous section showed that community gardens are proposed for numerous purposes, such findings only justify community gardens as an interim use of vacant land. They only marginally address ways to create legal frameworks for long-term status. Indeed, they are rarely envisioned as permanent solutions and are often explicitly justified as temporary solutions to the vacant land problem (Németh and Langhorst, 2013). For instance, this

tension is evident in Flint, Michigan, where the Genesee County Land Bank has become very adept at demolishing abandoned buildings and creating community gardens, but gardeners still face numerous legal obstacles in their efforts to classify these sites as a permanent land use (Shigley and Cleaver, 2008; Masson-Minock and Stockmann, 2010). In turn, struggles of community gardeners against redevelopment have been documented around the world. Notable examples of these struggles against redevelopment come from Berlin; Kano, Nigeria; New York City; Los Angeles; and Vienna (Groening, 2000; Lynch et al., 2001; Schmelzkopf, 2002; Smith and Kurtz, 2003; Lawson, 2007a; Irazábal and Punja, 2009; Möhrs et al., 2013).

Given these persistent dilemmas, there are a range of critiques as a counterweight to the accounts that stress the numerous beneficial outcomes of community gardens. Such critical assessments argue that community gardens are stopgap remedies for the effects of neoliberal policies, and as such, transfer risk and responsibility from the state to disadvantaged communities (Allen, 1999; Pudup, 2008; Rosol, 2012).

Whether celebratory or critical, these representations link community gardens and the economy into the following chain of logic: for various reasons, urban economies do not run as expected—there is vacant land, not enough healthy food, disinvestment and unemployment, and so on. Leftover space, typically abandoned lots, cannot be filled with "normal" uses and must then be temporarily filled with something that serves an immediate need, but ultimately and eventually will be replaced as the socio-economic conditions return to normal. Community gardens are framed as literally and figuratively fitting in the cracks of an otherwise capitalist urban space. Investigations of networking among community gardens, then, tend to position gardens as always on the defensive,

struggling to survive against external challenges (Smith and Kurtz, 2003; Lawson, 2007a; Irazábal and Punja, 2009). While I fully recognize those challenges, such focus on the ways they connect with each other in times of crisis do not answer questions about how gardens are started and how they are maintained on an everyday basis through networks.

To be clear, I am not discounting the very real and diverse outcomes of community gardens. Certainly, the history of community gardening in the U.S. is one in which advocacy and practice have increased dramatically because of political, social, and economic contexts. These periods of increased attention have had ameliorative effects in counteracting local manifestations of social, environmental, and economic concerns (Bassett, 1981). I neither claim that such contexts are irrelevant, nor argue that community gardens should not be responses to inequities. In fact, as the historical material reveals, the speed, breadth, and scope of these efforts reinforce the powerful will behind the efforts that drew in leadership, organization, land, and other resources. Instead, I draw attention in Chapter 5 to how framing community gardens as a means to an end produces knowledge of them as anomalies in cities and economies and thus merely temporary or emergency land uses. As fleeting moments in an otherwise interconnected economic landscape, community gardens supposedly share no dynamic except for the dominant economic forces that led to their creation.

Taken together, the combined effect of such studies is to reify community gardening as an epiphenomenon that is ultimately subject to dominant economic forces and by extension, fragmented, weak and insignificant (Sharzer, 2012). Seldom treated as sites of production, studies that do foreground economy look at how community gardening impacts such conventional economic indicators such as property values (Voicu

and Been, 2008). The literature finds dynamism in terms of public health, culture, and social activism, but due to the search for the causes of community gardens, and the treatment of gardens as temporary spaces, these sites are cast as isolated anomalies that play a supporting role in the economy but are ultimately disconnected from broader regional dynamics.

Signs of networking in community gardening

There are indications, however, of networking in community gardening, albeit not in an economic perspective. First, one can infer networking by acknowledging the range of actors involved in starting gardens. The archetypal North American story—where a neighborhood group comes together in order to turn a vacant or abandoned city property into a productive green space—is in practice only one way community gardens are formed (Schmelzkopf, 1995; Corrigan, 2011). The literature above makes it clear that NGOs and government agencies are interested in community gardens for a variety of reasons, and they take active roles in starting and maintaining them. These actions suggest a degree of networking and resource flows are taking place. Local governments sometimes promote community gardening by providing leases for public parcels or dedicating park space for community gardens. NGOs act on behalf, or in place of, neighborhood residents to secure land, funding, and other resources; this is common in many parts of the world (Drescher et al., 2006; Rosol, 2010). Furthermore, complex webs of interactions across scales emerge as communities, local and extra-local NGOs, and government agencies plan and implement community gardens (Lawson, 2004; Henderson and Hartsfield, 2009; Drake, 2014). Of course, the intentions behind those actors may be self-serving and tinted with elitist consumption attitudes or neoliberal ideology (Pudup,

2008; Rosol, 2010); while the intentions have been scrutinized, the process of how those networks are constructed is still an open question.

In addition to these inferences I just made by drawing attention to the actors that help start community gardens, there have been studies on social and political aspects of networking. There has been some work to understand social capital, for example, vis-à-vis relationships between gardeners. In a social capital approach, networking practices build social capital as gardeners cooperate within and between garden sites (Alaimo et al., 2010; Cameron, 2011; Firth et al., 2011). Nugent (2000) lays some groundwork for a relational approach to urban agriculture more broadly, but her account of inputs and outputs is descriptive rather than analytical and it is not clear where community gardens may fit in. Other work has created openings through social network analysis (Wekerle, 2004; Campbell, 2013), but it is unclear how those processes work in an economic sense.

Although such studies provide some groundwork in seeing community gardens as networked, they do not focus on production *per se* or explicate how community garden sites expand or contract through flows of resources. Among those few existing studies that examine how community gardeners have garnered resources by connecting beyond their sites, those actions are meant to avert crises such as the loss of land (Smith and Kurtz, 2003; Irazábal and Punja, 2009). This networking is reactionary and does not provide answers about the type of places that foster community gardens, or the internal and external dynamics that govern the ways community gardens function.

Recent work has, however, taken more interest in the ways that networking is an everyday process of community gardening rather than reactionary. Cameron's (2011,) study of a community gardeners' field trip shows that the simple act of visiting other

garden sites results in helpful knowledge exchange. She focuses on environmental subjectivity, but in her work she ties these concerns to the act of producing food. She finds that the work of gardening is vastly improved when gardeners make visits to learn how others manage their sites. Those network dynamics are not the analytical focus of her study but help provide the materials for this dissertation.

A related body of work is the literature on alternative food networks (AFN)—again, another example of the broad application of networking theories. The AFN literature itself spans a wide variety of topics, including community-supported agriculture and organic farms (Renting et al., 2003; Jarosz, 2008; Goodman et al., 2012). The key lessons of those studies have centered on labor relations and the meanings of "alternative." Rather than question the alternativeness, this dissertation starts from the assumption that community gardens are in practice non-capitalist spaces; it questions, though, how concerns for community shape community gardening. Moreover, the networking in AFN research is often not explicitly an object of analysis, but a starting point to examine labor relations (Carlsson and Manning, 2010). This dissertation brings those relations to the foreground and thus calls for a grounding in literature that provides the conceptual tools to do so. Although it might be possible for future studies to link community garden network dynamics with AFNs, this dissertation does not engage that literature directly. It is grounded in theory that provides a way to find common ground across community gardens, trace network connections and resource flows, and understand how those dynamics might be shaped by concerns for community well-being.

Anti-essentialism and a politics of ontology

My interest in community gardens is more than intellectual due to my own personal experience as a community gardener. As a practitioner and a researcher, I have met community gardeners across the U.S. and also in Australia, and a recurring sentiment I found is that gardeners feel they are not taken seriously by local government. As shown in the preceding sections, local authorities may often propose community gardens for various reasons, but rarely have seen them as sites that become inextricably linked into neighborhood fabrics. I have heard gardeners speak at advocacy meetings in New Jersey, who complain that local government officials want to build community gardens but do not see them as integral, permanent parts of the urban landscape. On the one hand, gardeners have complained that officials see community gardens as "nice little spaces," but gardeners see such description as pejorative—for them, community gardens are more than nice little spaces. On the other hand, it seems like those same government officials who do not take gardens seriously see them as an easy way to redress urban economic issues. Yet, community gardeners do not like it when such officials go into neighborhoods to build gardens with the expectation that people will simply flock to them (Drake, 2010). Community gardens take a lot of work in order to flourish, and much of that work is rendered invisible to officials who may see them as ultimately inconsequential.

These brief personal reflections are meant to introduce strategic theoretical choices that I make in this dissertation regarding the epistemology and ontology. I argue that the characteristics of community gardens shown above—isolated, subordinate anomalies—are as much an effect of discourse as they are a neutral reflection of reality. The implications of this argument are that theory itself has an important role in shaping

what is able to be known. Thus, before outlining the specific theoretical framework of this study, I will first explain the concepts that guide this work—namely, the concept of anti-essentialism.

I start by acknowledging the political implications of all theory. By this I mean that theory is needed to frame the empirical object—in my case, community gardens—one examines through any research method. This proposition suggests that theory is at once necessary to study phenomena but at the same time works to constrain those phenomena by defining categories in advance. Since theory defines questions and categories of analysis, it delineates the kinds of answers one can reach. As Timothy Mitchell argues in his critique of development research in Egypt, objects of analysis are "partly formed by the discourse that describes them" (Mitchell, 2002, 210). In his case, the object of analysis is a vulnerable population that is discursively constructed in such a way that it can only be helped through existing international aid structures. To categorize a complex world is needed in order to do research, but the act of counting data about a complex world is a political act because, by creating categories, one brings things into being and hides others because they do not make it into those categories.

Theory is thus political in the sense that research questions either contribute to replicating or altering existing social relations. Theory and method are thus inseparable—by defining questions, theory also defines the methods one uses. If theory determines questions and methods, and if the questions are political, then the methods are invariable political. This does not mean that researchers should aim to be apolitical, but rather to recognize the political consequences of research.

The position I have so far laid out is an anti-essentialist approach to theory. There are two overarching implications to anti-essentialism. The first is that anti-essentialism rejects the "presumption that complexities are reducible to simplicities of the cause-and-effect type" (Resnick and Wolff, 1987, 3). In other words, such research does not look for essential causes that explain phenomena because nobody can study all of the influences that shape an event; "all that can ever be done—and all that any analyst ever has done—is to select some few influences and discuss their unique and different roles in shaping the chosen event" (Resnick and Wolff, 1992, 132). Instead, Graham (1992) uses the concept of "entry point"—in her case, class—as the phenomenon one is interested in studying and changing, without assuming that the entry point is a fundamental cause. A broad collection of research drawing on anti-essentialist concepts has resulted in a range of geographical scholarship that underscores theories of difference rather than sameness in explanation. Categories such as gender, race, and nature have been opened up to show that identities are fluid and constituted in part through discourse (Williams, 1991; McDowell, 1993b; Escobar, 1999).

The second implication of anti-essentialism is the acknowledgment that researchers are not separate from the world that they study, and that "knowledge is not a passive reflection but a social process with an effectivity of its own" (Graham, 1992, 148). This shifts the researcher from someone representing the world impartially—the "view from nowhere" (Haraway, 1988)—to the researcher as engaging in collaborative conversation and deliberation about what we all collectively think the outcomes of research might be. If the act of creating knowledge about the world plays a role in creating those phenomena that are studied (Mitchell, 2002), then this raises questions for

Gibson-Graham (2008): "how can our work open up possibilities? What kind of world do we want to participate in building? What might be the effect of theorizing things this way rather than that?"

Social power

In its search to explain network relations, this study uses post-structural notions of power. Given my interest in the interactions within and between community gardens, the assumptions regarding power hold implications for what kind of data can be collected and what answers can be drawn from those data. This study is driven by a concern to not only reveal the relational dynamics of community gardens but also to make community gardens visible as sites of economic production and dynamism. Since community gardens have long been represented as inherently subordinate to dominant economic structures, I choose to not produce a structural critique but to use post-structural notion of power. Primarily, this entails three viewpoints: power is not "held" by any one entity but only exists through the enactment of relations between entities (Law and Urry, 2004; Latour, 2005); discourse has constitutive power, and our descriptions are not neutral reflections but actively shape the world (Foucault, 1981); and through a horizontal view of power, asymmetries and inequalities are not assumed from the outset but are what need to be explained (Gibson-Graham, 2002). Together, these notions of power are linked through Louis Althusser's concept of overdetermination, which stresses *constitution* rather than *causality* in social processes (Resnick and Wolff, 1987; Graham, 1990). In this perspective, power is relationally produced, and the researcher is part of these processes by categorizing and naming things and processes in the world.

This has implications for this dissertation in terms of the internal and external dynamics of community gardens. Within the community garden, I do not presume that

gardeners are inherently cooperative or communal—rather, the types of labor and the power relationships through which labor is performed is an open question that needs to be explored. Furthermore, my study of external dynamics will bring community gardeners into contact with external entities such as local governments, universities, non-governmental organizations, and global corporations. There are power asymmetries as different entities vie for resources, but I do not presume power inequalities from the start—again, they are what I need to explore and explain. Throughout the dissertation, critical reflexivity to discourse is needed as well; rather than start from a language of economic subordination, I unpack those discourses that normalized community gardens as economic bandages and hidden their economic dynamism.

These are the concepts that I bring into this study of community gardens. My work involves not only a rethinking of community gardens as economically productive, but also a rethinking of the economy as diverse. A diverse economy is constituted by more than capitalism, and it includes the possibility that economic actions might be guided by ethical decisions about how to produce goods and service in an equitable way. These reflections on theory now allow me to discuss the first part of my theoretical framework, the "diverse economies" literature developed by J.K. Gibson-Graham.

Theoretical framework, part 1: "Diverse economies"

Diverse economies theory was first developed by (Gibson-Graham, 1996) working in the U.S. and Australia, but it has been extended by scholars working in many countries (Pavlovskaya, 2004; Hill, 2011; Erdem, 2014). It gives a starting point to see economic networking in community gardens by shifting the ontology of what is included in the economy. It lets one see common ground between community gardens—although

there are a variety of causes and outcomes to them, they function as food production sites based in the management of shared space. A theoretical framework that does not conflate "the economy" with capitalism is important because capitalism is not the reference point. As such, I draw on Gibson-Graham's (1996) theory of diverse economies, which establishes new ontological terrain upon which we can not only recognize alternative economic practices but explore their dynamism and potential as more than individual and isolated initiatives.

Ontological politics of diverse economies

The project of diverse economies is to read for economic difference in a similar way that social theory has rethought other categories for difference. As scholars have destabilized conventional identities regarding gender, race, sexuality, and ethnicity, they have allowed new identities to flourish and created possibilities to enact new social processes. When it comes to the economy, however, such work has proven to be difficult because "the economy" strongly retains its privileged ontological status. As Gibson-Graham et al. (2000) claim, "the contemporary economic (and therefore also the social) field is represented as dominated by a single class process—capitalist exploitation." J.K. Gibson-Graham thus develop a critique of what she saw as "capitalocentrism": the representation of the economy as singularly capitalist, and the representation of capitalism as the essential cause of social processes (Gibson-Graham, 1996). Furthermore, she defined capitalocentrism as the way classical Marxist discourse tends to identify all economic action in relation to a capitalist center. Although non-capitalist economic processes have been located in a range of scholarship, they are often regarded as "obsolete remnants of a precapitalist 'traditional' economy, or as seedbeds of truly

capitalist endeavor, or as ultimately 'capitalist' because they involve commodification of markets" (Gibson-Graham et al., 2000, 13). These identities emerge through the way that economic processes are judged against a capitalist norm. For Gibson-Graham, this is a binary relation that constrains the possibilities of economic alternatives to a never-ending struggle against a monolithic capitalism. Following anti-essentialist logic, if knowledge production is not a neutral reflection of the world but also actively constitutes it, then such representations of non-capitalist processes as inherently subordinate have the effect of reasserting the power of capitalism and discouraging non-capitalist activism.

In order to undermine the hegemonic discourse of capitalism, (Gibson-Graham, 1996, author-year) draws on an anti-essentialist reading of class following Resnick and Wolff (1987). Their notion of class is a fundamental shift from the traditional Marxist where class is understood as the struggle between two social groups, workers and capitalists. Instead, rethinking class in an anti-essentialist lens puts the focus on the *flows* of surplus labor rather than on a set of predetermined groups of individuals (Resnick and Wolff, 1987; Graham, 1990). In their reading of *Capital*, the process of exploitation occurs through the flow of surplus labor from the worker to the capitalist, and as such the appropriation and distribution of surplus labor is a *class process*. Furthermore, the moment of appropriation is just the first step in a class process, and they read in volumes 2 and 3 of *Capital* the distribution of surplus labor as an additional step in that process. For these scholars, following the production, appropriation, and distribution of surplus labor through a class process is the starting point for analysis (Gibson-Graham et al., 2000).

The diverse economies approach thus starts its analysis by looking for class processes in order to then identify class positions, rather than starting from a set of class positions and then looking for class processes. This different language of class opens up the economy to a range of class positions that could be filled beyond worker and capitalist. The implications of an entry point of class process stem from my discussion of anti-essentialism in the previous section: if one defines class positions in advance, then one is limited to only those positions. If one instead focuses on class process, then one can potentially find a diversity of class positions, some of which may be examples of non-exploitative and collective labor. To this end, Gibson-Graham (1996) provides examples of possible class processes, such as capitalist, feudal, slave, independent, and collective. Each of these processes is defined by the way surplus labor is produced, appropriated, and distributed. For example, a capitalist class process is the appropriation of surplus labor through wages, a feudal class process is the appropriation of surplus labor through the provision of necessities such as a home and food. Independent and collective class processes involve the producers of surplus labor appropriating their own surplus labor and deciding how to distribute it. Diverse economies scholars are particularly interested in revealing those non-capitalist class processes that exhibit such innovation in terms of ethical surplus appropriation and distribution.

Furthermore, an individual can occupy multiple class processes, which is a lesson gained from post-structural feminist theory that stresses the nature of identity as fluid and overlapping (McDowell, 1993b). Whereas someone might be situated, for instance, in a capitalist class process as an employee of a firm, they might also participate in a communal class process by working in a cooperative on the weekends. Just as multiple

gender identities can be performed (Butler, 1990), multiple economic identities can also be performed (Gibson-Graham, 1996). Taken together, this framework provides conceptual tools for documenting multiple and sometimes contradictory economic practices occurring within and between sites. For example, Pavlovskaya (2004) documented how wage labor, informal self-employment, and domestic labor make up livelihood strategies in post-socialist Moscow. The economic politics of this approach are meant to create the possibilities for ethical and equitable economic identities to be imagined and ultimately enacted.

Defining economic action in the diverse economies approach

The diverse economies literature defines economic action as the production, appropriation, and distribution of surplus labor wherever it is found, whether in the home, a community garden, or a multi-national corporation. It resists conceptualizing economic alternatives as necessarily contained within a singular and unitary capitalism and opens the door to imagining alternative enterprises and dynamics across a variety of scales (see Gibson-Graham, 2008). This work provides an ontological shift in thinking about the economy. Rather than a capitalist monolith, there are a variety of existing economies that outnumber capitalist firms. In one sense, this is evident in research that expands what counts as economic *sites* beyond capitalist firms. For example, there is a distinct similarity between the ways households and community gardens might be seen as economic sites. Although some feminist geographers have shown the household to be a crucial site of *reproduction* of the labor force for capitalist firms (McDowell, 1993a), others have also revealed the household as its own site of economic *production* (Pavlovskaya, 2004). Such work has been done by recognizing the production and

distribution of surplus labor as not only occurring within capitalist firms but also within the household. As women perform cooking, cleaning, and maintenance work, for example, other members of the household can appropriate this labor for their own consumption (Ironmonger, 1996).

If economic *sites* have broadened beyond firms, so have *processes* considered to be constitutive of economy; in particular, discourse and subjectivity are increasingly called upon in economic analyses. The language we use to talk about economy plays a major role in delimiting its ontology and constraining or imagining other economic possibilities (Gibson-Graham, 1996, 2002). Indeed, other scholars argue that the discipline of economics does not neutrally reveal an external economy but instead constitutes those economies by creating a language of what counts as economy (Callon, 1998; Mitchell, 2005). Discourses of economy, then, shape who we are as economic subjects by constructing norms that shape how we act and what we think is acceptable behavior. Gabriel (2011), for instance, argues that the establishment of urban parks depended on the creation of residents as park subjects that did not treat parks as economic resources in food production. Likewise, community gardening is rarely part of discussions about urban economies, in part because urban space has been construed as a capitalist economic space (Moore, 2006). In sum, the hegemony of conventional economic concepts is being challenged as new theories and research continue to unfold. It is this part of my theoretical framework that allows me to see community gardens as a part of a diverse economy, and it provides conceptual tools to examine how the work of community gardening might be exploitative or equitable.

From the cultural turn to networks in economic geography

Before continuing on to the second part of my theoretical framework, relational economic geography, a brief discussion of the "cultural turn" is needed in order to show that diverse economies is not alone in rethinking economy but is part of a broader shift in economic geography highlight economic difference. The foregoing discussion refers to work that comprises much of the cultural turn in economic geography (Barnes, 2001). Broadly speaking, such work builds on a wide range of investigations into the relationship between economy and society. Even among scholars working on conventional capitalist firms, the effects have been to recognize that economic action is situated in, and shaped by, social contexts. Economic space, then, is increasingly understood as entwined with a range of socio-cultural contexts and produced in part through inter-personal and inter-firm relations (Ettlinger, 2003; Gertler, 2003; Grabher, 2006). Geographers have thus extended this work by re-thinking the economy as a heterogeneous and variegated space rather than always homogenous and singular (Murdoch, 1995; Peck and Theodore, 2007).

The cultural turn led to a vast array of studies that show supposedly "non-economic" sites exert their own agency and dynamism into circuits of production and consumption. There are many examples of economic diversity in the study of informal economies and slum space in the Global South.[4] Here, the existence of informal commodity production and exchange networks within and between areas classified conventionally as "residential" has opened up new theorizations of space and economy (Nijman, 2010). Although slums have long been seen as a reserve army of labor or

[4] Informal economies are broadly defined as economic activities (either capitalist or non-capitalist) that are not formally licensed or regulated by the state.

"stealth workforce" for formal capitalist firms located elsewhere (Davis, 2006), such spaces seemingly separate from, and subordinate to, the economy are increasingly recognized as simultaneously residential, industrial, and commercial (Hart, 1973; Rogerson, 1996; Dierwechter, 2004). In other words, although slums are articulated with broader economic relations, they are also sites of their own economic dynamism. For instance, Nijman's (2010) study of entrepreneurship and production in Dharavi, Mumbai, finds residents not as passive laborers waiting for formal employment in other parts of the city but as active producers of an economic milieu. Although such examples are perhaps well-noted in the global south—including a long history of urban agriculture research in developing countries—these concepts increasingly are put to work in the global north. Even in advanced capitalist states such as the U.S. and U.K., researchers have documented the existence and expansion of non-capitalist economic space (Emery and Pierce, 2005; Williams and Nadin, 2010b).

Research that opened the door for imagining economic diversity also shaped research on networks. As economic geographers acknowledged the importance of place, they searched for ways to combine the concepts of fixity and flows. Over time, geographers have shown that although economic action is deeply influenced by the social context of place, flows of resources between places are equally important. As such, spatial networks are seen to make and sustain particular economic formations, and flows of knowledge across space are vital components of economic dynamism (Yeung, 2005b). In particular, knowledge garners attention as something that both can and cannot flow through networks and is crucial to explaining firm success. The recognition that flows of tacit knowledge—that is, knowledge gained through experience and transferred through

face-to-face interaction—affect economic dynamics has been particularly compelling (Gertler, 2003). This relationality in economic geography is seen to function in numerous ways—through face-to-face contact, spatial proximity and agglomeration, and via the Internet, social media, and other information technologies.

To bring these studies to bear on this dissertation, their importance is not just in revealing non-capitalist spaces—studies are even beginning to show how they are crucial parts of global commodity networks. Grant and Oteng-Ababio (2012), for example, show how parts of the global south that have been left behind by development have in fact become agents in global flows of commodities. Literally, impoverished people in West Africa who make a living sifting through trash to find scrap metal for sale produce metals that re-enter manufacturing streams in Europe, Asia, and the Americas (Grant and Oteng-Ababio, 2012). Not only are there preponderance of non-capitalist spaces, it is becoming clear that they might not be as fragmented as once thought. Still, even if we are on the verge of grasping the significance of economic networking among these types of spaces, there is little by way of theory to understand those dynamics.

Theoretical framework, part 2: Relational economic geography

Several strands of research and thinking in economic geography have explored the way economic action is shaped by geographical context, and how networks, clusters, and agglomerations form within these contexts. Aoyama et al. (2011) define networks in the context of economic geography as "socio-economic structures that connect people, firms, and places to one another and that enable knowledge, capital and commodities to flow within and between regions." On the one hand, network research examines why firms cluster in spite of global economic networks (Amin and Thrift, 1992; Porter, 2000).

In some sense, this work on the spatial agglomeration and dispersion of economic activity draws on the tradition of regional science (Isard, 1956; Berry and Garrison, 1958). On the other hand, a key difference is that work in this vein has foregrounded the nuance and complexity of social life and its influence on clusters and flows, a mark of the cultural turn more generally (Clark, 1983; Massey, 1991). This "relational turn," in recent thinking, refers to two processes: the connections between economy and society, and flows of knowledge and other resources between firms and regions (Bathelt and Glückler, 2003; Boggs and Rantisi, 2003; Yeung, 2005b).

Overall, relational economic geographers move beyond neoclassical conceptions of the firm as an autonomous utility-maximizing agent—advancing the notion that economies are not a collection of discrete entities but flows that are situated in social contexts. These approaches stress on the one hand, network connections across space, and on the other hand, the dynamics of clustering and proximity. The literature on commodity chain analysis and global production networks, for example, focuses on spatial extensiveness and network relations (Gereffi et al., 1994; Dicken et al., 2001). In contrast, the "milieu school" looks toward territories and the agency produced among firms within a region in order to understand innovation (Crevoisier, 2004). The geographies of practice literature focuses on individual firms but sees firm behavior as something produced through both extensive networks and spatially proximate relationships (Faulconbridge, 2006; Ibert, 2007). Relational proximity, a concept that foregrounds functional relationships and trust over distance, is part of such formulations (Murphy, 2012). These varied approaches tried to overcome the spatial determinism of regional science and found it important to explain economies through their social

contexts. At the same time, they did not lose sight of the fact that economic activity is still concentrated in certain places while dispersed in others.

Recent work among German economic geographers has synthesized much of this work in light of the shifts toward service and knowledge-based industries (Bathelt et al., 2011; Bathelt and Glückler, 2011). Known generally as relational economic geography (REG), it foregrounds the flows of knowledge in economies, the relationship between knowledge and other resource flows, and how they help explain spatial patterns of the economy. As a way to understand clustering and dispersion without the simplistic explanation of spatial proximity, researchers note that some types of knowledge can be transmitted over distances while other types are best transferred through face-to-face interaction (Howells, 2002; Gertler, 2003). Knowledge is not solely acquired through distant connections nor through close interaction within clusters; instead, it comes through the way that ideas are circulated within local arenas and combined with knowledge accessed from elsewhere (Bathelt et al., 2004). Furthermore, institutions—defined as both social norms and the organizations such as universities and governments—play key roles in facilitating resource flows because they tend to be fixed in place but also able to attract labor and capital from elsewhere (Storper, 2004; Clark, 2010). In these ways, REG understands economic activity as situated in social and institutional contexts and produced through connections across space. Bathelt et al. (2004) refer to this as “local buzz” and “global pipelines.” Some processes that are crucial to economies, such as trust, reciprocity, and tacit knowledge, are circulated locally and simply cannot be easily transmitted through written communication to other places (Ettlinger, 2003; Gertler, 2003; Murphy, 2006). Other processes, such as innovation, are

enabled by connecting with actors and places beyond one's local milieu in order to bring in new ideas (Staber, 2011). The relational approach refers broadly to, on the one hand, the influence of context on economic action, and on the other hand, the spatial patterns of flows and connections that constitute economic action (Wolfe and Gertler, 2004; Bathelt and Glückler, 2011).

In sum, REG provides a way to understand networks while still considering the importance of place. Like other approaches to networks in economic geography (e.g. commodity chain analysis), it analyzes linkages between firms and the formation of clusters (Staber, 2011). Unlike other schools of thought, however, it stresses the importance of context, contingency, and path-dependence (Martin and Sunley, 2006; Bathelt and Glückler, 2011). It offers a horizontal view of the economy, where spatial proximity is not deterministic and scale has no normative value as it might in neoclassical or orthodox Marxist accounts (Malmberg and Maskell, 2002; Glückler, 2007a). REG does not see firms as ultimately subordinate to global capital flows, nor does it treat the firm as an autonomous actor.

Theoretical framework, part 3: "Community economies"

A third part is needed for this theoretical framework, because even though diverse economies provides an ontology of economic diversity, and REG lays the groundwork for network dynamics, they provide few tools to explain how ethics and well-being might be entwined in economic action. First, not all diverse economic sites are equitable or sustainable—feudal or slave class processes are by no means justifiable, even though they are non-capitalist (Gibson-Graham, 2006). The contribution of diverse economies theory to this study is the way it reveals community gardens as economic sites; however,

it does not provide tools to examine how "community" is invoked or how concerns for community guide the way those sites work. Second, it is no simple matter of transposing REG theory onto community gardens in order to develop a relational, networked approach. At first glance, REG's stated goals—understanding intentions, strategies, and patterns of economic actors (Bathelt and Glückler, 2011)—do not conflict. The actors in question, however, are conventional capitalist firms. As such, the intentions derive from the goals of competitiveness and profitability, and the mobility of firms in search of those goals. Such studies assess firms' decisions to locate in certain places, the competitive advantage they might gain by co-locating, and the degree to which network connectivity increases competitiveness (Tallman et al., 2004; Glückler, 2007a; Stam, 2007).

Firm location decisions are an example of how these concepts require modification to fit community gardens. As reviewed above, knowledge flows are a key component in clustering—if clustering is important to capitalist firms, does it matter for community gardens and by extension other alternative enterprises? REG has argued that they help explain one of the major paradoxes of the modern global economy—despite advances in telecommunication that supposedly reduce the need for firms and individual people to be in certain locations, location still matters as evidenced by clusters and co-location (Amin and Graham, 1997; Porter, 2000; Malmberg and Maskell, 2002). The creation and flow of knowledge is co-constituted through the formation of clusters; knowledge assets that exist within clusters attract firms to the area, and the interaction of firms and their employees in close proximity generate those knowledge spillovers (Asheim and Gertler, 2006; Maskell et al., 2006). Location advantage, then, arises from the creation and circulation of knowledge—in particular, tacit knowledge. In contrast to

explicit knowledge, that which is easily codified into written form, the tacit variety is developed and shared through face-to-face interaction (Howells, 2002; Gertler, 2003). Among different industries such clustering and knowledge flows lend themselves to different types of competitive advantage. Manufacturing clusters, for example, benefit from technological knowledge spillovers through increased production efficiency (Malmberg and Maskell, 2002), while service industries like management consulting find increased business opportunities through social networks (Glückler, 2007b) . Although technical knowledge and opportunities are important in community gardens, these dynamics are framed in REG in a distinctly capitalist ontology. Particularly, firm mobility is a key question in this literature (Stam, 2007). Even if community gardens can be considered enterprises through diverse economies theory, they are place-based and do not relocate as a capitalist firm might do.

This vocabulary of knowledge flows, clustering, and networking thus needs additional theoretical work before it can help explain networking among place-based enterprises like community gardens. To do this, I also draw on the body of research known as "community economy" (Gibson-Graham, 2006; Gibson-Graham et al., 2013). To clarify the difference between *diverse* and *community* economies, the former is an ontological "rethinking" of the economic as a diverse field of practices rather than a dominant and global singularity (see also Mitchell, 2005, 2008); it encourages us to uncover and explain a wider range of economic forms and practices (Community Economies Collective, 2001; Fickey, 2011). The latter is a set of guidelines that allow us to compare and judge economic practices relative to an ethical concern for community and environmental well-being (Wright, 2010; Hill, 2011; Cornwell, 2012).

The community economy approach recognizes that not all non-capitalist sites are equitable or sustainable, and so it starts from the perspective that ethics cannot be presumed but instead need to be explained. In other words, one should not assume that a cooperative enterprise is inherently "cooperative," but should instead assess the decisions around how to produce, appropriate, and distribute surplus labor (Gibson-Graham and Roelvink, 2010). As such, this approach does not define in advance the characteristics of a "community" economy; rather, it provides conceptual tools to examine the ethical decisions involved in economic production. In this sense, "community economy" is not an ontological object—a type of economy out there in the world, or a specific scale at which that economy might operate—but a way to assess, and ultimately enact, postcapitalist economies that are equitable (Miller, 2013).

This approach uses "ethical coordinates" as starting points for the questions we might start with in order to work toward postcapitalist economies, rather than starting with a normative structure of what those economies will actually look like. These coordinates allow scholars and activists to assess the nature of economic decisions and to imbue those decisions with concerns for well-being: what is necessary to personal and social and survival; how surplus is appropriated and distributed; whether and how surplus is to be consumed; how a commons is produced and sustained; how surplus is stored for the future through finance (Gibson-Graham, 2006; Gibson-Graham et al., 2013). The community economy framework allows a detailed examination of the inequalities, tensions, and agreements that occur as people attempt to engage alternative economic practices. Importantly for this dissertation, it allows me to examine community gardens as sites of economic production while still retaining the myriad social and cultural values

embedded within gardens. That is, my entry point of economy in this study does not reduce community gardens to economy or strip them of concerns for well-being—it is not a "commodification" of community gardens. Indeed, the community economies approach is about a deliberate reinsertion of the social and cultural into economy. As Polanyi (1944) argued, he found that in capitalism, social relations became embedded in an economic system; the community economies approach follows Polanyi in seeking to re-embed economic processes in society.

Gibson-Graham's framework relies on terms such as "ethics" and "community," which are important to unpack given the diverse meanings they carry across scholarship. By ethics I mean that the relationships between people are a necessary part of life; how these relationships might "enhance mutuality and well-being" are important to examine (Lawson, 2007b, 3; Popke, 2010). Community refers not to a pre-given bounded space, or a predetermined geographical scale, but the process through which people make ethical economic decisions; community is then produced through a range of local and extra-local interactions. The space of community does not necessarily have fixed boundaries (Kurtz, 2001).[5] Taken together, this approach does not assume community and ethics as given categories or sentimental concepts—it foregrounds them as being helpful to understand economic processes. Community, like "local," is not inherently good nor bad (Born and Purcell, 2006); it is a site where people can engage in economic decision-making. The ethical practices that I emphasize in this study relate to questions of labor, and how

[5] Jean-Luc Nancy introduced the concept of "being-in-common" to theorize community as always in the making and not fixed entity (Nancy, 1991). This notion aligns with Iris Marion Young's argument that community is produced through shared relationships and does not emerge through a set of common attributes (Young, 2000).

people balance labor for their personal or household benefit with labor for the benefit of others.

For community economy, one must approach network dynamics through a language that foregrounds community and diverse economic activity. We can still assess flows of knowledge and resources, along with the contexts that shape them; the starting point of economic activity, though, is different. A relational framework of community economy would not be as concerned with how location patterns affect competitive advantage—to do so would simply be to assess what draws community-based firms to locate in certain places. We might instead see community enterprises emerging in certain places where there is more interest in such activities, the way that knowledge and resource flows shape those efforts, and how institutional contexts enable or impede those efforts. Instead of examining how clustering affects competitiveness of individual firms, one might also assess how proximity affects the development of community economic action. Whereas REG may examine knowledge flows as a building block for innovation, community economy theory may also focus on how they spread a language of economic diversity. While the former may rightfully ask how firms in a cluster become competitive (Malmberg and Maskell, 2002), it is unclear whether firms in a community economy aim to compete with each other in the same sense. In sum, there is theoretical compatibility and dissonance between REG and community economy theory, but with modification it becomes clearer how a relational conception of community economy can be developed. Chapter three synthesizes these literatures into a conceptual framework and methodology.

Toward a relational conception of community economy

Drawing on both REG and community economy, I can thus examine how decisions around, and flows of, knowledge, labor, and materials are shaped by the concerns of community gardeners to produce and distribute food in ways that support the shared space of the garden, build social bonds, and care for the environment. In this respect, this dissertation holds promise for pressing questions in community economy research—how people in different sites and regions figure out how to do community economies.

One thing is clear, however—the advances in community economy theory and networks have not been in conversation with each other, even though they share a common ancestry in the cultural turn. Certainly, community economy research has indeed done much work up to this point. It has examined the decisions and subjectivities fostered by individual community enterprises, and what it takes for people to move past dominant narratives to envision economic possibilities beyond capitalism (Gibson-Graham, 2003b; St. Martin, 2007; Healy, 2011). Researchers and activists have also critically assessed what is needed for cooperative enterprises to work and the conditions for cooperation (Gibson-Graham, 2003a; Cornwell, 2012). Much work has explored how action research can not only envision but help start and sustain community economy enterprises (Cameron and Gibson, 2005b; Dombrowski, 2013; Hwang, 2013; Cameron et al., 2014). There has also been some effort to examine community economy as a model of economic development, but an explicit framing of networks in such a model has not been fully elaborated (Healy and Graham, 2008; Graham and Cornwell, 2009).

In this literature, *place* is an important analytical frame. Local and regional development need not start off by defining a place by what it lacks, but rather the assets

already there. In a community economy approach, however, assets are any number of non-capitalist sites and activities (Cameron and Gibson, 2005a; Wright, 2010). Local development can be catalyzed by recognizing and building those non-capitalist assets from within rather than focusing on what localities need to secure from the outside (Gibson-Graham, 2005). This is not a simple call for self-determination, however, even though it is sometimes viewed as such in critiques of asset-based development strategies (DeFilippis, 2004; Kelly, 2005).

Nonetheless, this raises an interesting question—how can development be both community-oriented and place-based while still building on connections across cities, regions, and beyond? REG has done much to answer this for the capitalist economy, but it is a big unknown for community economy. While REG has clearly shown how enterprises succeed or fail based on their connections or disconnections with other enterprises, those processes are still unclear in community economy theory. Moreover, whereas those connections can be understood in how they affect the competitiveness of capitalist firms, is that the right analytic for community enterprises? Do they aim to compete with another, or are they foregrounding well-being in ways that do not depend on competition? These questions are crucial for building community economy theory. Although one dissertation cannot fully address them, it can start to understand the range of connections, flows that constitute community economy.

I am not alone in this undertaking, however. Revealing regional extent and connectivity is a recent effort among community economy researchers, but this work has only just begun. For example, Safri (2014) uses the supply chain management literature to conduct action research among community entrepreneurs in coastal New Jersey. More

broadly, a group of scholars in New York, Philadelphia, and Massachusetts are collaborating on a National Science Foundation-funded project to develop databases and maps that link producers and consumers that engage in various community economy efforts. There are also efforts underway to map the locations of solidarity economy enterprises in countries like South Africa and Brazil (Borowiak, 2010; Satgar, 2011). Such work is needed to reveal diverse economic landscapes, but this dissertation aims to go further and theorize the network dynamics of those economies. Taken together, there is momentum for revealing the breadth of community economies and how they might be interconnected from place to place and from producer to consumer.

In conclusion, this study is not just relevant to community gardens but for a variety of economies that actively pursue community ethics but are seen as fragmented or isolated. Using the conceptual tools I develop in this study, we might find them to be networked, regional, and carrying a dynamic that extends beyond the borders of the site. Theoretically, then, this dissertation builds a relational conception of community economy. This suggests a mode of organization that could be applied to any number of projects—whether it is cooperative housing, credit unions, or fisheries. Are there local or regional clusters of community economies? Can they be fostered through action research, policies, or some other kind of engagement? These questions are still open for exploration, and they call for a set of theoretical tools to examine them. This dissertation is an initial attempt to develop such a framework. In the next chapter, I elaborate a methodology based on the approaches outlined above.

Chapter Three: Methodology and study design

A relational approach to community garden research calls our attention to the site selection and methodology because it must at once situate the individual site in its local context but also explain flows across space. On the one hand, analysis of how economic action is situated in place suggests in-depth case studies (Yin, 1989). On the other hand, spatially-extended networks, broad spatio-temporal patterns, and comparisons across contexts stress the importance of moving beyond the individual site. In the U.S., community garden research and urban agriculture studies more broadly have situated individual sites in the context of their neighborhoods and cities to explain why these sites form (see previous chapter). Comparative case studies work well for multi-sited research because they help reveal processes that are shared across contexts (Skocpol and Somers, 1980), but they do not necessarily focus on the connections *between* sites and actors, as is needed here. Furthermore, since local government can play a large role in urban agriculture, it is also important to move beyond studies within a single municipality, because locally-specific contexts can make it difficult to generalize community garden characteristics (Schmelzkopf, 2002; Goldstein et al., 2011; Rosol, 2012). In other words, this study should not focus exclusively on the individual garden or the individual city, as is often the case in community gardens research.

One issue, then, is the geographical scope of a single case study that will best reveal local networking and connections across contexts. This dissertation centers on a New Jersey-based study, but includes national surveys and ethnography of a single city to do that work. To address community gardening at the national level, I draw from a collaborative national survey of community garden organizations, and I conduct a

discourse analysis of community garden advocacy. To address this phenomenon at a regional level, I conducted interviews in 19 municipalities in New Jersey. This includes New Brunswick, New Jersey, where in addition to interviews I conducted participant observation, and participatory geographic information systems (PGIS). Before explaining the site selection and methods, however, I first discuss how the literature guides empirical analysis—what one looks for when studying network dynamics of community gardening.

A conceptual framework that explains the analytical parameters helps in such a case selection. As reviewed in the previous chapter, this study draws on relational economic geography (REG) and the diverse and community economies approach. REG theory in some ways aligns with community economies theory—they both foreground place and context—but some fundamental differences mean a careful synthesis is needed. The approach to networks in REG, even if foregrounding place and context, has as its object of analysis capitalist firms and industries, which are understood to be coterminous with the economy. As a result, although it is concerned with the context, contingency and path-dependence of economic action, REG at heart still addresses profitability, competitive advantage, and the reasons firms choose to locate where they do. The community economy research approach, in contrast, builds theory around concern for place—firm relocation and competitive advantage *might* happen in a community economy, but it is not considered to be the *raison d'être*. By way of example—which I expand in Table 3.1—whereas REG scholars examine the movement of workers and how firms can attract employees from other regions, community economy scholars have so far been primarily concerned with the development of labor and other resources already existing in a place.

Community economy researchers could, however, be concerned with similar themes as REG; for instance, they might be interested in how to draw employees from other regions so that depressed areas can initiate cooperative enterprises. Community economies researchers might also consider how knowledge shapes the spatial distribution of community economies—and what sorts of knowledge could be made more explicit rather than tacit so that community economies could better expand, connect, and grow. Furthermore, the type of value chain analysis that has traced the flows of materials between capitalist firms could go a long way in revealing the ways community-based enterprises are connected beyond their day-to-day experiences. I aim to address these concerns in this dissertation, but first I consider how those relational dynamics might work in an ontology of economy diversity.

These two literatures, nonetheless, provide productive starting points for data collection. They have both addressed key empirical themes I address in this dissertation, which involve what flows through networks (knowledge, labor, and materials) and how those networks are configured (institutions, place-making, and trust and reciprocity). I more clearly delineate these themes in Table 3.1, where it becomes evident that there are several analytical themes that apply in both schools of thought. To be clear, even though the diverse/community economies literature has not deliberately set out to theorize network dynamics, one can interpret prior research in that light. These themes, taken together, help answer the methodological question of what does one observe when investigating network dynamics? Specifically, Table 3.1 highlights how the two approaches relate to networks. In the remainder of the chapter I frame my synthesis of the

approaches to examine how networks and their flows are established, maintained, and changed.

	Relational economic geography	**Diverse/Community economies**
What flows through networks?		
Knowledge	Shapes spatial distribution of economic activity (Bathelt and Glückler, 2011); explicit knowledge is more easily transferred over distance, while tacit knowledge requires face-to-face interaction (Gertler, 2003)	Interactions between community economic sites generate knowledge (Cameron, 2011); normative discourses impact what we know or think is possible (Moore, 2006; Gabriel, 2011)
Labor	Workers' performance in firms is shaped by social and home experiences (Ettlinger, 2003); workers move between firms and regions (Florida, 2002; Wolfe and Gertler, 2004)	Work is shaped by decisions to allocate surplus, maintain commons; can locate sites of exploitation and equity (Gibson-Graham, 1996, 2006)
Materials	Clusters can attract and redirect flows (e.g. commodities) (Hesse, 2010)	People prioritize the use of local assets instead of seeking external investment (Cameron and Gibson, 2005a)
How are these flows configured?		
Institutions	Institutions facilitate or impede economic interaction, knowledge creation, and innovation (Wolfe and Gertler, 2004; Clarke, 2012)	Can be assets in developing community economy (Gibson and Cameron, 2001; Gibson-Graham, 2005). However, they can restrict economic possibilities (Gabriel, 2011)
Place-making	Individuals generate “local buzz” by participating in social and economic activities (Bathelt et al., 2004)	Communities, and connections to place, form around production (St.

		Martin, 2005b; Turner, 2011)
Trust and reciprocity	Connections across and within spaces are strengthened through trust (Murphy, 2006; Staber, 2011; Murphy, 2012)	Cooperative economic experimentation is strengthened by building trust with collaborators (Community Economies Collective, 2001; Hendrickson and Heffernan, 2002)

Table 3.1. Analytical themes related to network dynamics in relational economic geography and diverse/community economies

This table, combined with my previous research projects and preliminary research in this study, guides the empirical portions of this dissertation. Following Yeung (2003) and Jones (2011), I trace the flows of knowledge, labor, and materials; these are the objects that flow through networks. These categories emerged from my previous research as important factors in community garden development, and they are also important in REG research more generally (Yeung, 2005b; Drake, 2010). I examine the types of knowledge about community gardening that may be transferred from one location to another and within individual sites; it is unclear whether the flows of tacit and explicit knowledge that are vital to capitalist enterprises (see Chapter 2) are fundamental to community economies. A network approach to labor looks at where people live in relation to their garden sites, and how people move spatially within a site in regards to decisions over surplus labor. Observing labor in this way reveals movement around neighborhoods, cities, or regions, as people work to build and maintain sites and distribute food. Materials such as soil, water, tools, and money are necessary to build and maintain community gardens. Each of these three categories may shape the other as well:

knowledge about how to get materials or volunteers can be shared across a city (or beyond), changing how those material flows are spatially configured.

Second, I examine how these flows take their shape by examining institutions, place, and trust. Among REG researchers, these categories have been shown to shape economic action by facilitating or inhibiting connections between enterprises, and as such are important to creating the conditions of a thriving economy (Table 3.1). It is clear from the community gardens literature that institutions such as local governments and NGOs are interested in these activities (see Chapter 2), but the various degrees of commitment and the resources they provide to such efforts are unclear. In terms of network dynamics, it is important to examine institutions in order to understand the difference they make in community gardening. Place-making is important to both REG and community economies, and for urban agriculture it is commonly assumed that such sites are hubs of neighborhood social activity (Eizenberg, 2013). I thus code data for references about place as they relate to network flows. Likewise, trust and reciprocity is important for both capitalist and non-capitalist economies; the important point here is how network connections are affected by trust. In sum, this framework follows from the research questions and existing literature on urban agriculture and economic geography. It provides categories of what to look for in empirical analysis; the remaining sections of this chapter discuss the site selection and methods.

Site selection and methods

This dissertation begins with two national surveys across the U.S. (chapters 4-5) which reveal contemporary trends in community gardening and the historical context that drives those practices, providing baseline data that informs research in New Jersey

(chapters 6-8). New Jersey offers a range of contexts, including post-industrial cities, gentrifying neighborhoods, suburbs, and small towns—and I have found community gardens in all of these contexts—to examine community gardening. New Jersey is a relatively small geographic area with 565 municipalities, where local governments function through "home rule," meaning that municipalities have significant autonomy relative to budgets and regulations (Tulloch, 2002). This offers the chance to examine community gardening across a large number of institutional contexts and how gardeners might connect across those contexts. These activities are notable across the state as well, in urban, suburban, and rural areas, as I found through preliminary research. Non-profit organizations of various sizes and scales work in urban agriculture, neighborhood groups in cities and towns of various sizes are starting and expanding as well. Additionally, a nascent state network, Ag in the City, aims to connect urban agriculture efforts across the state for knowledge and other resource sharing.

Research took place over two phases. The first phase examined national trends in community gardening in the U.S. It did so through a national survey of 445 organizations involved in community gardening and through discourse analysis of urban food production advocacy from 1895 to 2012.[6] The findings then informed statewide and local research which provided intensive contextual knowledge on network dynamics. The second phase entailed ethnography and participatory GIS in New Jersey. Specifically, it involved the following methods: interviews of 48 people involved in community gardening across 20 municipalities; participant-observation and participatory geographic

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[6] The earliest records of community gardening are found in literature in the mid-1890s, although at that time gardens were referred to as "vacant lot cultivation associations" (Lawson, 2005).

information systems with the New Brunswick Community Food Alliance; and participant-observation as the president of a 75-member community garden.

National survey of community gardening organizations

This survey's purpose is to provide baseline information on the types of places that foster community gardens and their internal and external dynamics (see research questions in Chapter 1); it also provides an ontological basis for the rest of the study by asking whether community gardening is really that prevalent or if it just gets a lot of attention with little substance. Through a survey that resulted from a collaborative project between the American Community Gardening Association and the Rutgers Department of Landscape Architecture, I examine data on the spatial extent of community gardening across the U.S. The survey asks about the main challenges of starting and maintaining gardens, and the degree to which they connect with other gardens and institutions. This phase highlights cross-contextual issues in community gardening. The tendency in community gardens research—and indeed, much community economies research—is to rely on the experiences and stories of individual sites or cities, and case studies typically center on those sites and cities as the units of analysis. Since the development of any particular site—whether it is urban agriculture or any number of community economy ventures—is deeply shaped by the local context in which it is situated, case studies of individual sites are also studies of how those sites unfolded in particular places. An ontological effect of such research, as evident in the conclusions reached in many articles, is that it is too easy to define the workings and issues of urban agriculture in relation to particular places and extrapolate those meanings to apply to all sites. This sometimes leads to singular characterizations of urban agriculture based on the

experiences in particular places. When reading about community gardening in San Francisco, Berlin, and New York City, for example, contradictory conclusions are reached—has community gardening lost its activist roots and been coopted by neoliberal policies (Pudup, 2008; Rosol, 2012), or has it increased community activism (Eizenberg, 2013)? Place-based drivers are important to understand, but it is all too easy to read these cases and ascribe the conclusions across the board to all community gardening efforts. Furthermore, cases of individual cities limit the analysis to the network dynamics within those local regulatory and institutional contexts. As such, this dissertation begins with broad surveys in order to reveal processes involved in community gardening across these contexts, which I then examine in more depth through ethnography in subsequent chapters.

I undertake a national survey to provide data on the spatial extent of community gardening, in terms of national and regional spatial patterns; additionally, in seeking to understand how community gardening is networked it will help to know what issues and experiences are shared more generally across cities and regions. Doing so in the initial stages of the study will inform research in New Jersey by eliciting a set of shared experiences encountered by individuals and organizations. This set of shared experiences, in turn, provides clues about what community gardeners might have in common in terms of networking. I assume that if there are a set of shared experiences, then connections and flows in some way relate to those commonalities; issues common across contexts are one way that networks might form. Land access, for example, is a well-documented issue in urban agriculture, particularly in major cities with high real estate demands (Schmelzkopf, 2002; Goldstein et al., 2011). Outside of these areas, however, it is unclear

whether this issue is such a problem. If it is, knowledge about how to secure land access might form the basis of networking. Chapter four explains in more detail the data collection and analysis that formed this part of the study.

Discourse analysis of community gardening advocacy

Broad spatial patterns and practices provide a contemporary snapshot; broad historical analysis also reveals the antecedents of current assumptions and expectations in community gardening. In particular, I use it to examine the relationship between knowledge and institutions, and how historical patterns of advocacy may impact how and where community gardens are established, which contribute to research questions 1 and 3.

Path dependence is a concept important in both relational economic geography and community economies research, and a historical perspective highlights how past practices impact current states of networking. For this reason, I draw on Foucauldian genealogy, which is useful in tracing the complicated histories of taken-for-granted assumptions (Foucault, 1984; Elden, 2009). This form of analysis particularly focuses on the ways that dominant narratives persist even though exceptions repeatedly appear (Campbell, 2009). I draw on the contention that discourse is not a neutral reflection of reality but actively shapes it (Foucault, 1981; Lefebvre, 1991; Lees, 2004). In particular, I draw on the notion that discourse shapes economies to examine how community garden advocacy has shaped the practice of community gardening, its perceived role in U.S. cities and regions, and how it is (or is not) represented as economic sites. Archived documents and online newspaper articles and blogs were the data sources; chapter five explains the specifics of this data collection and analysis in more detail.

Semi-structured interviews

Relational approaches value both context and connectivity—the embeddedness and particularities of place but also flows and distribution across space. Interviews with community garden practitioners in various sites across the state provide deeper knowledge than the national surveys while at the same time let me ask participants about how they engage in networking practices with other sites. A network approach to community gardening that examines both internal and external processes calls for not just multi-sited research, but mixed methods in order to capture what is going on within a site, across multiple sites, and between sites. As a result, interviews contribute to all three research questions and build on the contributions of the previous methods.

Interviews draw on and extend the baseline data produced through survey and discourse analysis. Since there was no statewide directory of these activities, I first conducted surveys to identify the locations of garden sites across the state. I used three survey methods: emailed questionnaires to cooperative extension agents in each county to ask about urban agriculture activities in their areas; accessed surveys completed by attendees at the 2011 and 2012 New Jersey Community Garden Conference; and searched internet databases. I located 218 community gardens across the state; however, I do not assume this is an exhaustive list.

From this sample frame I targeted community gardens in three types of locations: deindustrialized and low-income; transitional/gentrifying; and suburban. I developed this geographic typology given the diverse locations and geographic contexts in which I found them during preliminary research. It is based on my own empirical research along with an extensive literature review that pays little attention to geographical diversity in

community gardening; a geographic typology will ensure validity in data collection by documenting community gardening across contrasting contexts. This is particularly important in this dissertation given my research questions about how community gardens might connect across contexts. In contrast, much existing community garden research used typologies based on garden purpose, such as income generation or neighborhood food production (Ferris et al., 2001; Lawson, 2005). For this study, it is more important to capture data across explicitly geographic contexts rather than through purpose-defined categories because community gardens serve many purposes that change over time (Saldivar-Tanaka and Krasny, 2004; Hobson and Hill, 2010). These choices come from the way that I am more interested in the "how" than the "why" (see Chapters 1 and 2).

Forty-three of the 48 interviews took place across New Jersey, and the remainder were in Melbourne, Australia. The case centers on New Jersey, but one community garden has a "sister garden" relationship with another one in Australia and I interviewed some members there in order to better understand the nature of that connection. Those interviews are used in Chapter 7. The New Jersey interviews provide material for Chapter 6, 7, and 8.

I used both semi-structured and grounded interviewing (Dunn, 2005; Fraser and Weninger, 2008); the latter method is similar to semi-structured interviewing in that it draws on interview guides but can take place during informal conversations. Interviews were transcribed and coded using NVivo software. These codes are the categories listed in Table 3.1, and they emerged from the literature. Although additional codes emerged through data analysis, they were not sufficient to address my dissertation's research questions.

Participant-observation in New Brunswick, New Jersey

I use this method in order to examine the internal dynamics that govern community garden maintenance and the connections between community gardens and other organizations that affect that maintenance (research questions 2 and 3). Whereas interviews built on the surveys in order to get a closer look at how relational economic action is situated across contexts in New Jersey, extended participant-observation in one city in particular, New Brunswick, provided even deeper contextual knowledge about these processes and internal network dynamics. This work took two forms. First, I was a member of a community garden for two years; the second year I served as its president and collected dues and membership agreements, assigned plots to new members, organized monthly work days to maintain shared areas, mediated disputes, and planned social events. Second, I became an active member in the New Brunswick Community Food Alliance. The alliance is a food policy council, comprised of residents and other individuals and organizations involved in food-related work in the city (e.g., non-profit organizations, researchers, local government, and the private sector) (Schiff, 2008). Its work engages a variety of topics, including healthy food access, community engagement, food economic development, advocacy and policy, and agriculture. I am mainly involved with two groups affiliated with the alliance—the New Brunswick Community Garden Coalition and the urban agriculture workgroup.

Through *in situ* data collection I documented urban agriculture practices in multiple locations on a weekly basis. I used a mix of what Bernard (2002) calls complete participation, participant observation, and complete observation. I was a complete participant in my own community garden, a participant observer during community work

days at other community gardens as well as social events, and a complete observer at other times and during garden meetings. During participant observation I recorded memos as elaborated by Emerson et al. (1995), in which the specific context of each time and location of fieldwork will influence whether I write concurrently during participant observation or after each session. Like the interviews, field notes were transcribed and coded using NVivo software using the categories in Table 3.1.

Participatory Geographic Information Systems (PGIS) in New Brunswick, New Jersey

I used PGIS to examine how intimate knowledge about community gardeners' neighborhoods is produced and shared, and this data collection contributed specifically to Chapter 7. I did so through a project that mapped and examined the spatial distribution of community gardeners' homes in relation to their gardens. While the ethnographic methods explore internal and external dynamics, and the surveys reveal the spatial extent at a broader scale, the addition of GIS bridges questions about dynamics and extent. It adds another explicitly spatial lens through which to examine network dynamics, but it also brings the potential for research participants themselves to better understand and strengthen their efforts. As such, I draw on the tools and concepts of both geographic information science and participatory action research for a PGIS component. This is an extension of my participant-observation, and happened through the project called "Mapping the New Brunswick Community Garden Coalition."

The project involved working with the city's eight community gardens to collect data on where the gardeners lived in relation to their garden sites. By linking homes with garden sites, I trace the flows of labor and materials; participatory analysis revealed key aspects about local knowledge flows. In terms of labor, we created maps that show flows

of labor from home to garden. One thing missing from community garden research is where people live in relation to these sites; the distribution of gardeners relative to their gardens has not been studied. In terms of materials, those same maps show where food is distributed from those gardens. PGIS analysis through focus groups then explained the reasons for these distributions. In other words, this adds to the network analysis by documenting New Brunswick's community garden "foodshed."

This approach is useful for two reasons. First, it is a move toward triangulation in research design. Survey, archival, and ethnographic methods in the other parts of the dissertation reveal geographical patterns in the extent and spread of urban agriculture. This PGIS portion examines how these patterns play out in the everyday production of urban agriculture sites. Furthermore, mapping in a participatory action research model can reveal additional details that are missed in other methods. Visual methods such as mapping can prompt memories and information that research participants may not recall through interviews (Rose, 2001; Knigge and Cope, 2009). Second, a participatory approach is important to not only reveal network dynamics but also to engage communities (Cameron and Gibson, 2005b). I was not just a researcher but also a community gardener involved in the coalition; I wanted to help us learn about those connections, how they enable and impede community efforts to produce community gardens, and in what ways that knowledge can strengthen existing connections and seek out new ones. In other words, this work aims to help the coalition figure out what these connections mean. By recognizing and visualizing them through GIS, it helped improve our knowledge about communities, connections to other places, and what we can do

about them (St. Martin, 2009). Chapter 7 explains more of the details that went into this project.

Conclusions

In closing, the study design addresses the questions of the spatial configuration of community gardens, and the internal and external dynamics that shape this configuration, by building on the literatures of relational economic geography and community economies. Whereas the former literature offers a well-established methodology for examining networks, the latter theorizes economic action in a very different way. By comparing them in tandem, I identify key empirical categories for bridging those differences. By observing how actors exchange knowledge, labor, and materials, I delineate the structure of network relations. Then, I observe how institutions, place-making practices, and trust shape those relations and to what effects. The study itself is divided into two phases, where the first assesses spatial and historical patterns across the U.S. and the second provides in-depth understanding of how these patterns take shape across and within local contexts. This mixed-method approach uses a web-based survey, discourse analysis, interviews, participant observation, and GIS in order to provide a well-rounded picture of the role of networks in the production of community gardens.

Chapter Four: What is shared in the practice of community gardening? Results of a U.S. and Canada survey of community garden organizations[7]

Across the global north, organizations such as the Australian City Farms and Community Gardens Network, American Community Gardening Association (ACGA) serving the U.S. and Canada, and the Federation of City Farms and Community Gardens in the U.K., point to a growing effort to connect beyond localities to share knowledge and learn from experience gained in other places. When I attended the ACGA national conference in 2012 and 2013, I met representatives from community gardens, local governments, cooperative extension, and NGOs all engaged in starting and sustaining community gardens in various ways. The scope of their involvement varies dramatically—whereas one person might be a leader at an individual garden, another might work for an agency with dozens of sites. At such events, these new acquaintances are from cities where one expects to find community gardening but also from countless other cities and towns that I learned about for the first time through such encounters. With this range of actors, connecting across myriad local contexts, what experiences might they have in common? Furthermore, is community gardening limited to major metropolitan areas, or is it a phenomenon with a broader spatial distribution—in other words is the attention it gets in the press simply hyperbole or is it really happening across the country? This chapter aims to learn more about the practice of community gardening

[7] A version of this chapter was published as Drake, Luke, and Lawson, Laura J. In Press. Results of a US and Canada community garden survey: Shared challenges in garden management amid diverse geographical and organizational contexts. *Agriculture & Human Values*. The material used in this chapter is the author's work.

by surveying gardeners, and NGO and government representatives who help start and maintain community gardens.

As reviewed in Chapter 2, academic literature on community gardens often essentializes community gardens. Their purpose is supposedly to address poverty, provide a way for the middle class to practice environmental stewardship, convert abandoned lots into green space, and increase food security. In addition, community gardens are invariably located in cities where they emerge from "urban" issues, whether those issues are poverty, food security, environmental justice, or gentrification.

At the national conference of the ACGA, however, my encounters suggested that community gardening was not only embedded in those stereotypical urban contexts. What do a cooperative extension agent from North Carolina, a leader of a 200-member community garden at a church in rural Texas, and an NGO representative from Vancouver, British Columbia talk about when they sit together at a table at the ACGA? What does community gardening in New York City have in common with that in the small town of Warner Robins, Georgia? Those "urban" issues listed above likely do not apply across the board. Is community gardening really an urban phenomenon, and if so, how widespread is it? If those attendees I just mentioned are not just an exception to the norm, then perhaps community gardens are more widely distributed across the country. In order to better understand how community gardening might be a major part of a diverse economy, it is important to know where it is happening across North America—and what practices are held in common.

This vignette about the ACGA conference offers a good entry point for studying the network dynamics of community gardens because it suggests a shift from individual

community *gardens* to the practice of community *gardening*; it foregrounds the process rather than outcome. The ontology of a discrete garden site, which is produced solely through the actions of its gardeners, comes into question when there are representatives from cooperative extension and NGOs, as shown above, working to build and maintain garden sites. They are not necessarily "outsiders"—sometimes such people are also community gardeners, and even when they are not the gardeners might see them as partners (Drake, 2014). *Community gardening* suggests a networked process that is more than a group of residents reclaiming neighborhood space, as the story often goes (Schmelzkopf, 1995; Corrigan, 2011).

The ACGA conference is a part of an expanding process of networking, which not only draws together disparate types of gardens and gardening people but works to establish and maintain community gardening. To understand community gardening, then, it is important to engage organizations that help build, sustain, and grow community gardens by providing knowledge, labor, and materials. The conference and the geographical and organizational diversity of its attendees shake up assumptions about a singular identity of community gardening—is it really about addressing urban blight or getting the middle class to care for their own green space (Henderson and Hartsfield, 2009; Rosol, 2012)?—and suggest a need for more investigation along the lines of connections between places and organizations. A relational approach that brings together community gardeners and the organizations that support their efforts is key in this regard.

This survey provides evidence that lets me question the assumptions of the fragmented nature of community gardening and the isolated, one-off position of garden sites. There needs to be a survey which provides a new baseline beyond the individual

garden site in the city that may give us a new ontology of community gardening; that what it is, is not what we thought it to be. As people from diverse organizations and locations come together to share knowledge, what lessons learned in one place are relevant in another? How can we account for variations in scope—the individual garden site, the citywide coalitions and agencies, and the groups that assist large numbers of community gardens—that overlap locally?

In sum, the literature is well-developed in terms of the motivations to start community gardens, the social and economic contexts shaping these motivations, and the diverse outcomes of these practices. It is also becoming clearer that a number of issues constrain garden longevity and that a range of actors help to start and maintain community gardens. Despite a broad literature that has revealed much about the causes and outcomes of community gardening, there is still not much known about the process of starting, maintaining, and growing community gardens at an aggregate level. Put simply, it is unclear which management experiences are shared across contexts and regions.

Given the expansion of national community gardening associations across the global north, it is important to understand how community gardening is similar and different across contexts. This survey provides that broader context for community gardening. This chapter gains these insights by collecting data about key experiences and issues from people that are involved in community garden management. I undertake this project through a web-based survey of 445 community gardens and organizations involved in community garden management across North America.

The format of this chapter is as follows. In the next section, I explain the survey method, which used community gardening organizations as the unit of analysis. I then present a spatial analysis based on respondent locations; this includes a delineation of survey results into urban, suburban, and rural gardening locations based on census measures. I then examine organization size, evidence of networking, and the benefits and challenges of community gardening. The survey suggests four main challenges which I discuss in detail: funding, participation, land, and materials. In particular, I focus on challenges more closely to draw conclusions to the practice of community gardening and what it takes to make gardens work. In the conclusion, I turn my attention to a process-based understanding of community gardening that expands on the motivation-based explanations in Chapter 2. My conclusions center on the notion that community gardens are united because they are all sites of production, yet the processes of maintaining continuous labor is precarious.

Methods: From a focus on individual sites gardens to an understanding of the practices of community gardening that go beyond the site

As a parallel to a shift in economic geography more broadly (see Chapter 2), this chapter so far has proposed shifting from community gardens to gardening, or from product to process, as a start to examining network dynamics. In methodological terms, one way to make this changeover to process is to ask *how* community gardens work rather than *why* they are there in the first place. It is very likely hard to say why all of the people mentioned above, who come from places with very different social, built, and natural environments, participate in community gardening. Even within one city, community gardeners come into conflict as they recognize that other people approach this

work differently—in my previous research in Miami, Florida, some gardeners are driven by environment and personal health, while others could care less about organic food and simply want to generate income (Drake, 2014). The community gardens literature, however, frequently defines and discusses these practices in terms of motivations and outcomes as I have shown in the previous chapter.

Instead, my turn to community gardening as process—how they work—is grounded in the relational economic geography literature, along with my own preliminary research, which foreground a relational approach. This chapter complements existing case study approaches through a survey of organizations involved in community gardening efforts in North America by illustrating the experiences that are shared across contexts. Although both quantitative and qualitative data are used, I do not use inferential statistics on the former to generalize the results.[8] Rather, I pair quantitative and qualitative data for a critical analysis. Survey and other quantitative methods have long been associated with positivist epistemologies, but they can also be effectively used in qualitative approaches by opening up new categories of analysis and thinking without relying on the development of laws or predictions (Lawson, 1995; Moss, 1995). The objective here is not to replace the context found through case studies, but instead to investigate whether a new ontology of community gardening is possible—and to understand what aspects of knowledge, labor, and material flows I need to study in the subsequent chapters of this dissertation.

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[8] The ambiguity in the definitions of community gardens, and the fact that the total number of community gardens is unknown, limits the use of any strictly quantitative approach such as inferential statistics.

The unit of analysis in this chapter draws on my interest in the geography of community *gardening*, rather than community *gardens*. Since a multitude of actors, in addition to gardeners, are increasingly engaged in supporting community gardening efforts, I contend that these actors must be included in an examination of the issues involved in community garden management. "Organizations" – groups that identify as supporting community gardening – are the unit of analysis, and community garden practice is the object of study. I did not distinguish between non-governmental organizations, government agencies, or informal groups in part because there can be considerable overlap between organizational typologies.

This survey was a collaborative project between the ACGA and the Department of Landscape Architecture at Rutgers University, led by principal investigator Laura Lawson. Collectively, we developed the survey questions in part on past ACGA surveys (American Community Gardening Association, 1992, 1998), the community gardens literature, and our previous empirical research.[9] Although the scope of the survey exceeds the purposes of this dissertation, I participated in the development of the survey questions and I conducted all of the analysis. I draw on the survey data and analysis in this chapter to contribute to a better understanding of the broader network dynamics of community gardening.

The instrument was a 21-question web-based survey sent to community gardeners and organizations directly involved in assisting the management of community gardens in

[9] Although the survey questions were developed collaboratively, I conducted all of the analysis in both a report for the ACGA and this chapter. For the sake of clarity and consistency, I use the pronoun "I" instead of "we" below when discussing questions and results.

2011-2012 (Appendix A). Respondents held roles in the management of community garden activities; we asked respondents about their organizations' location and service areas, partnerships, benefits, challenges, and collaborations. Four question types were used—closed-ended, partial closed-ended, scaled, and open-ended—in order to gather both quantitative and qualitative data. Pilot testing occurred with three key informants in New York, Chicago, and Denver (Montello and Sutton, 2006; Dillman, 2011). After revisions, the survey was sent to the ACGA and Community Food Security Coalition email lists. After removing duplicate and incomplete responses, the sample size was 445; these respondents represented a total of 8,550 community gardens. Respondents were located in all 50 U.S. states, Washington, D.C., the U.S. Virgin Islands, and eight Canadian provinces, as shown in figure 4.1. In terms of analysis, I tabulated quantitative responses in Excel and SPSS; coded the responses to open-ended questions according the lists of networking partners, benefits, and challenges (Tables 4.3-4.6); and identified spatial patterns of respondents in GIS (see next section for detailed methods).

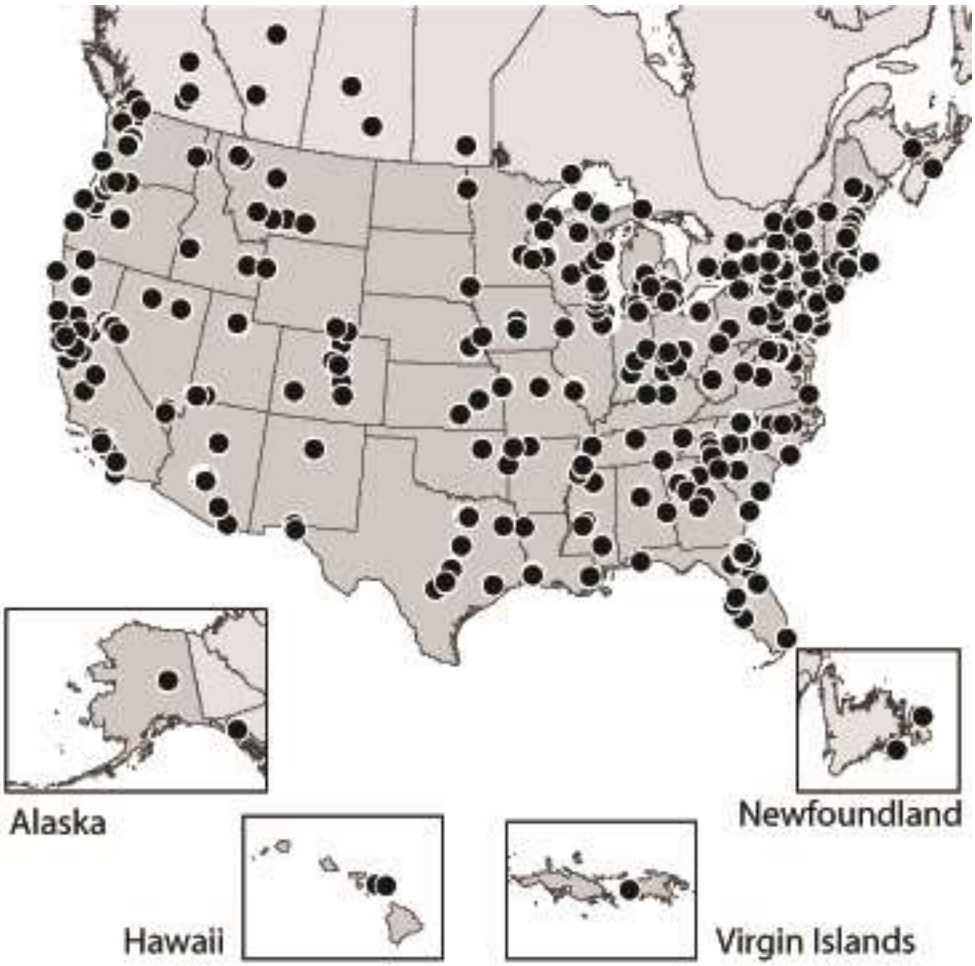

Figure 4.1. Locations of survey respondents

Spatial distribution

Having emerged in cities, it is perhaps no surprise that community gardens are equated with cities. Poverty alleviation, another proposed reason for community gardens, is often associated with urban environments in the global north and rural-urban migration in the global south (Hanna and Oh, 2000; Zezza and Tasciotti, 2010). Case studies in the U.S. are by definition restricted to small geographic areas and cannot speak to the broader distribution of gardening. However, this survey shows that community gardening is distributed across North America and is found where people are found – in urban,

suburban, and rural areas. I produced two density surfaces in order to compare the survey sample with U.S. population.[10] In the contiguous U.S., by comparing the density of respondents (Figure 4.2) to the population (Figure 4.3), it is clear that community gardening is not located in only specific regions, is not confined to cities or particular cities, and is not restricted to locations with a particular demographic profile. While it should be no surprise to find clusters of activity in the northeastern U.S. or the Pacific Northwest (in the former, the literature associates it with community activism and in the latter, environmentalism), it is clear from the survey that community gardening occurs most everywhere. See, for example, the extent of gardening across the southern U.S. in the region which stretches from North Carolina to Texas. Whereas one might expect community gardens to be associated with a given context—whether high-density cities, food deserts, or liberal enclaves—we instead find that community gardening tends to simply be associated with where people live in general. It is a ubiquitous activity, pervasive across regions. Even just among this sample, the only region where community gardening drops off is the high plains, where there are not many people in general.

[10] I used the kernel density function in ArcGIS. For both figures 4.2 and 4.3, cell size is 1000 meters and the search radius is 75 miles. Figure 4.3 is based on the total population from each census tract in the contiguous U.S. (Source: 2010 U.S. Census).

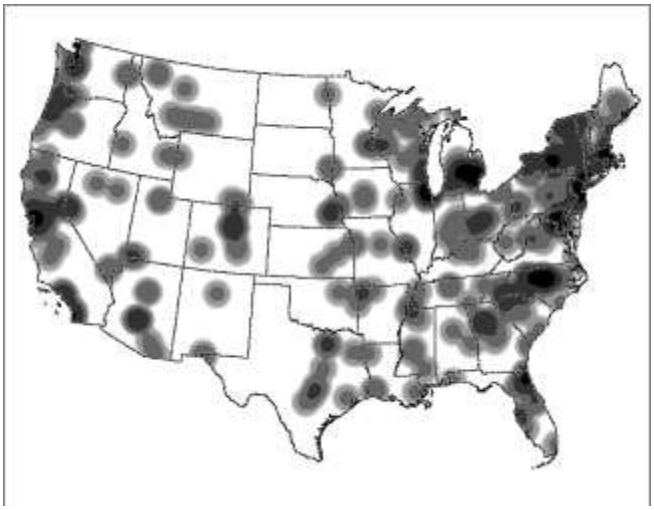

Figure 4.2. Density of U.S.-based survey respondents

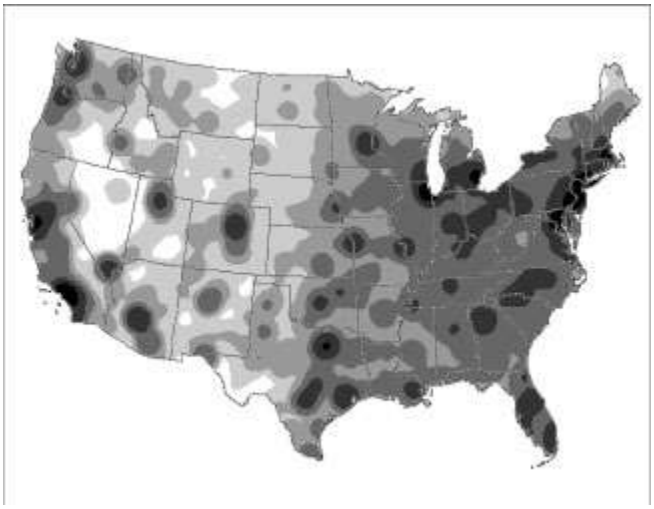

Figure 4.3. U.S. population density

If community gardening is found across the U.S., is it still an "urban" activity? Certainly, New York City gets much attention for its community gardening activism, but it is unique in its built environment and orientation for social action. I thus examined whether there are suburbs or small towns represented alongside these well-known "big city" locations. I overlaid respondents' locations with census geography in order to pose that question. A few comments on definitions of urban, suburban, and rural are in order, however, before reviewing these results.

Since defining "urban" has long been a point of contention for urban theorists, this analysis aims simply to provide a starting point to rethink the ontology of community gardening as a stopgap solution to stereotypical urban problems such as blight or gentrification; if it is found outside of cities then those explanations might apply best to urban settings (Dear and Flusty, 1998; Amin and Thrift, 2002; Short, 2006). Debates around urban- and suburban-ization cover a range of topics: housing densities, morphology, functional relationships, demographics, lifestyles and qualitative characteristics, and the tension between agglomeration and extension, to name a few. As a result, defining urban and suburban in a spatially explicit manner is difficult (Morrill, 1995). Indeed, there are no U.S. or Canadian census definitions of suburban boundaries—even if there were, the definitions would be problematic given the various theoretical frameworks and empirical classifications that might possibly inform those definitions, a concern voiced by the U.S. Census Bureau's director (Groves, 2001). Still, scholars have used various census methods to understand urban and metropolitan areas spatially. For example, suburbs have been defined as the areas within a metropolitan area outside of a central city (Madden, 2003), or the fringe areas of counties with metropolitan areas (Radeloff et al., 2005). In terms of food production, CBSAs have been used to delineate the differences between rural and metropolitan farming (Heimlich, 1989; Rogus and Dimitri, 2014).

For U.S.-based respondents, I geocoded each respondent's location and overlaid these point data with polygon data—Core Based Statistical Areas and Urban Areas—from the U.S. Census in order to differentiate the types of locations in which community gardening takes place. "Core Based Statistical Areas" are comprised of Metropolitan and

Micropolitan Statistical Areas. Metropolitan Statistical Areas are counties with at least one urbanized area and a high degree of socio-economic integration. Micropolitan Statistical Areas are similarly defined, but with a maximum population of 50,000 people. "Urban Areas" are comprised of two categories—Urbanized Areas and Urban Clusters—that represent urban footprints of high population density and urban land use. The former consists of more than 50,000 people, and the latter consists of 2,500 to 50,000 people.

I created the matrix shown in Table 4.1 in order to classify respondents as urban, suburban, or small town/rural, since the U.S. Census only delineates between urban and rural and not suburban. My rationale for this matrix comes from preliminary fieldwork and previous research (Drake, 2010); in this formulation, urban community gardening is located in the highest populated areas, which are the urbanized areas within metropolitan statistical areas. Suburban community gardening corresponds with a range of metropolitan and micropolitan urban areas with lower densities. Small towns and rural community gardens are those areas outside of large population centers. To be clear, I see this as a preliminary attempt to use census metrics at a national scale, and there are likely to be variations within these categories. It is, nonetheless, an informed attempt to understand the patterns of community gardening across a variety of built environments in the U.S.

Respondents were assigned urban, suburban, or small town/rural according to their geographic location relative to Urbanized Areas and Urban Centers (rows) and Core Based Statistical Areas (columns). Classification was done through GIS database location queries using combinations of four census categories: Urbanized Area, Urban Center,

Metropolitan Statistical Area, and Micropolitan Statistical Area. The spatial analysis with Census data draws only on responses from the entire U.S. sample.

Table 4.1. Census-based classification matrix of respondent locations

Census Urban Area Criteria	Census Core Based Statistical Areas		
	Metropolitan Statistical Area	Micropolitan Statistical Area	Not within a Core Based Statistical Area
Urbanized Area	*Urban*	*Suburban*	*N/A*
Urban Center	*Suburban*	*Suburban*	*N/A*
Not within either Urbanized Area or Urban Center	*Suburban*	*Small town/Rural*	*Small town/Rural*

Out of the 420 respondents in the U.S. (representing over 8,200 gardens), 74% are located in urban areas, 19% are suburban, and 7% are in small towns or rural areas. Although it is not surprising that the majority of organizations in the sample are located in urban areas—there is a long history of community gardening in cities—the growth rates within each location category give a different story. By comparing the total number of community gardens affiliated with each organization, with the number of new gardens each organization reported being established in the past five years, I found that 58% of suburban community gardens and 48% of small town/rural gardens are less than five years old, while only 38% of urban organizations' community gardens are less than five

years old. Put simply, organizations outside of cities have been growing more rapidly than those inside cities.

Although this chapter examines organizations and is not limited to individual garden sites, some context from the survey along with imagery can help show some of the geographical diversity represented here. The dense built environment of urban community gardening is evident in Figure 4.4. This density is among the explanations often offered about why people join community gardens—that there is little or no home gardening space. The suburban and rural community gardens pictured in Figures 4.5 and 4.6, however, are likely not shaped by the same context of density. My point here is that community gardening has certainly become established in a range of locations across North America, and from the U.S. data it is clear that it is not just found in major cities but is growing in suburbs, small towns, and rural areas.

Figure 4.4. A community garden that is supported by Isles, a nonprofit organization in urban Trenton, New Jersey and survey respondent. Image source: author

Figure 4.5. A community garden that is part of the Milledgeville Community Garden Association, a respondent in suburban Georgia. Image source: http://mvillegarden.wordpress.com

Figure 4.6. Rural community garden under construction near Big Fork, Montana that responded to the survey.[11]

Organization size and grassroots garden development

Results revealed significant spread and distribution of organizations in terms of size and capacity. Using the natural breaks method, I divided respondents into four categories: small (respondent works with one community garden); medium (two to three gardens); large (four to 30 gardens); and very large (31 community gardens or more) (table 4.2). The "small" category includes individual community gardens and organizations such as neighborhood associations, churches, schools, and cooperative extension offices that work with, or operate, just one community garden. Respondents

[11] Image source: http://www.flatheadnewsgroup.com/bigforkeagle/news/ferndale-church-starting-community-garden/article_f919dddc-0f5d-5901-b02d-bacfec7f59fa.html?mode=story

fitting the “medium” category are those with two to three community gardens and include community gardens that have expanded into additional sites, local organizations and government agencies, and cooperative extension offices. The “large” category includes local government agencies in larger cities, local and regional community garden coalitions and networks, cooperative extension offices, and food banks. Respondents in the “very large” category have more than 30 community gardens; these include municipal agencies that operate community gardening programs in major cities, community garden coalitions and networks in major cities, statewide community garden networks, and cooperative extension. Of particular note across our classifications is that NGOs and government agencies appear in each category. Although future research on the specific dynamics of these types of actors will extend community gardening research, I focus in this chapter on the size of the respondents’ organizations.

Table 4.2. Organization categories

Organization size	Criteria	Number of respondents	Percent of respondents	Number of community gardens represented	Percent of community gardens represented
Small-sized organization	1 garden	172	39	171[a]	2
Medium-sized organization	2–3 gardens	86	19	209	2
Large-sized organization	4–30 gardens	132	30	1545	18
Very large organizations	31 gardens or more	55	12	6623	77
Total		445	100	8548	100

Note: One of the respondents in the "small" category was functioning with a group of gardeners but the actual garden site was not ready at the time of submitting survey responses.

Given the way that organizations of different sizes emerged from the survey, it is important to gauge the extent to which the actual gardeners are involved in starting up gardens. That is, are NGOs and government agencies going into neighborhoods and starting community gardens without the support of the people who are expected to work in them, or are these external entities partners with a group of gardeners who are already trying to start a site? I sought to understand whether size influenced the narrative of "grassroots" efforts – community gardens initiated by gardeners themselves – versus gardens being created by an outside entity, possibly in a "top down" manner. I asked respondents to indicate how many new community gardens developed in the past five years were initiated by gardeners or a grassroots organization, or by external actors. Respondents noted that 81% of the community gardens created in the past five years were initiated from the "bottom-up" and 19% were started by outside organizations. Looking at these same data by organization size, the percent of new "bottom-up" community

gardens for small, medium, large and very large were 69%, 52%, 60%, and 89%, respectively.

Some lessons that inform the fieldwork in Chapters 6-8 are evident here. The proportion of "grassroots" gardens are similar across the size range except for very large organizations. The explanations for this are beyond the scope of this chapter because it may depend on the internal reporting procedures of these organizations, the type of organization, and how respondents define grassroots. To better understand these processes, fieldwork will assess how gardeners define grassroots efforts. Another key point to learn from organization size is that community gardening is more complex, in terms of the actors involved in starting and maintaining gardens, than the literature suggests. There has long been the narrative of a set of residents coming together to reclaim blighted neighborhood space (Schmelzkopf, 1995; Saldivar-Tanaka and Krasny, 2004); the antithesis to this narrative is the overbearing outsider that tries to turn residents into community gardeners (Pudup, 2008, #391; Rosol, 2012). My results suggest, in contrast, a more complex set of relationships. While the binary of insider-outsider conveys a message of "good" versus "bad," it is not yet clear how the relationships between gardeners and other partners play a role in producing community gardens. Further research in terms of fieldwork will provide place-based empirical data regarding these relationships. These figures prompt further research into the dynamics of how community gardens are initiated, and the rest of this dissertation examines these relationships between neighborhood groups and other actors. In the remainder of this chapter, I use organization size as a lens to explore the survey results, and how key experiences might be different based on the scope of work of each respondent.

Networking

Although networking in this dissertation refers to both formal and informal flows of resources, the broad survey in this chapter is to get a baseline understanding of those deliberate connections that form in the practice of community gardening. Here, I assess formal networking practices by asking survey respondents about the relationships their organizations establish with other groups. I asked respondents to indicate the degree to which they utilize or work with thirteen types of partners. Many organizations formed relationships with a range of government and non-governmental partners (Table 4.3). Partnerships are quite common—only one percent do not partner with anyone else—but local partnerships take precedence over regional or national partners. As shown in table 4.3, small and very large organizations offer contrasting examples; the latter tend to partner with all of the types of organizations more than the other sizes of organizations. Quite often, collaborations across the board are based in the need to obtain land, funding, or other resources. Respondents elaborated on these partnerships in open-ended comments at the end of the survey—for example, a respondent from a large organization in Pueblo, Colorado, noted that "employees of the city planning office have been very involved in the gardens and worked with the health department to develop a community garden land use policy."

Table 4.3. Percent of respondents that have the following types of primary or secondary partners, by organization size

Types of partners	Small	Medium	Large	Very large
Agricultural extension agents and specialists	67	80	86	97
Other government agencies	64	76	80	97
Colleges and universities in your community	47	56	83	97
Funding agencies	59	80	80	93
National environmental organizations	32	8	36	50
Local environmental organizations	59	56	77	93
Local social service providers	46	76	85	97
Local gardening clubs	58	44	71	93
Neighborhood associations	39	40	71	97
Foodbank	65	71	77	89
Schools / school districts	58	71	86	83
Faith-based organizations	54	64	75	100
Other	30	0	69	67

Note: Categories sum to greater than 100% because respondents could list more than one partner

Local government support

Eighty percent of small respondents indicated they receive some type of support from local government (e.g., land, materials, staff assistance, and zoning). The results show difference by organization size, with larger organizations identifying local government support at greater degrees (80% for small, 83% for medium, 90% for large, 92% for very large). It may be that larger organizations can mobilize political capital more efficiently and work across municipalities, thus having greater chances to gain support. Additionally, it is not likely that large and very large organizations start out with high numbers of gardens but accumulate them over time; perhaps they have been working longer and have had more time to develop strong relationships with local government.

Local government can thus be an important network partner, but these relationships can also be a source of conflict. A respondent from a small organization in Los Angeles, California, for instance, wrote that the "Department of Recreation and Parks have been very heavy handed in this fee situation [in charging for access to department-owned land]. If you ask individual gardeners who have invested many years and a lot of money into their plots you will find everyone is very anti-city at this point." Another respondent, from a large organization in Somerville, Massachusetts, described their relationship with local government as follows: "It has been very difficult to get the [department of public works] to help maintain the garden when heavy machinery is needed. For example if we have trees that need to be pruned it can take 1-3 years before they respond." Inter-departmental tension is nothing new for any government entity, and here a representative of a city's public health department explains some of these dynamics: "Employees of the City Planning Office have been very involved in the gardens and worked with the Health Department to develop a Community Garden Land Use Policy. The Parks and Recreation Department has not shown an interest in the garden development." Given how respondents took time to provide comments on their relationship with local government, though, these connections are likely to be the most contentious, especially for smaller organizations.

These results extend existing literature by providing context on the everyday actions that draw together various community garden practitioners. Although it might be unsurprising to find that these connections, whether necessary or voluntary, are common, it is not so evident in existing case studies. While it is already clear that networking can build capacity and social capital, the literature suggests this occurs primarily *within*

individual community gardens (Firth et al., 2011). External networking is often presented through community gardeners reaching out to others in times of crisis—for example, when land access is under imminent threat (Smith and Kurtz, 2003; Lawson, 2007a; Irazábal and Punja, 2009). The proportion of partnerships reported here suggests an ontological shift; external connections are not just special cases, but a normal constitutive part of community gardening. Also clear from the qualitative responses is that although connecting might be commonplace, the structure of those relationships can vary considerably. Chapters 7 and 8 examine in more detail how these local relationships are brokered.

Benefits

Although this survey focuses more on challenges by assuming that they represent much of the critical work involved with sustaining gardens, a look at reported benefits is worthwhile. Much community garden advocacy, as well as mainstream research, point to the benefits of community gardening in order to justify the existence of community gardens. These explanations, however, are usually based on the assumption that community gardens serve clearly defined purposes and that garden sites are no longer needed once they address those purposes. Even though the literature makes it clear that there are multiple outcomes of community gardening, it is not clear whether practitioners actually see a clearly defined goal or multiple outcomes. In this survey I asked about benefits with the following question: "Community gardens are associated with many benefits. For each benefit listed below, check the box that is most appropriate to the work of your organization." Respondents then listed whether each option is a primary or secondary benefit, or a benefit they do not see; Table 4.4 shows which outcomes are

considered to be either a primary or secondary benefit. Out of the sixteen options provided (including "other"), eleven were either primary or secondary benefits to over 75% of respondents. This finding confirms that many organizations see multiple benefits derived from gardening. Although I have previously critiqued the notion that community gardens are seen to address multiple problems—surely some garden advocates think of them as a panacea—another way of looking at these results is that community gardens become entwined in people's lives in many ways. As such, there can be numerous outcomes.

These findings lead me to speculate about whether the perceived benefits reflect as much about the ideology of community gardening as they do actual outcomes. Responses could be informed by the organization's own goals, and as such they have as much to do with what organizers want their community gardens to do as what they actually accomplish. While some of the academic literature focuses on a particular outcome – food production, nutrition, community engagement, etc. – it seems that organizations may accept multiple and varied outcomes.

Table 4.4. Percent of respondents who reported the following benefits

	Either primary or secondary benefit	Primary benefit	Secondary benefit	Not a benefit
Food production and access	99.7%	90.0%	9.7%	0.3%
Nutrition / improved diet	99.5%	74.0%	24.3%	0.5%
Social engagement / well-being	99.5%	66.0%	33.4%	0.5%
Exercise/physical activity	98.6%	50.8%	47.8%	1.4%
Individual personal satisfaction	97.8%	49.2%	48.6%	2.2%
Education specifically about gardening	96.7%	68.8%	27.9%	3.3%
Environmental benefits	95.9%	49.9%	46.0%	4.1%
Intergenerational activities	94.0%	36.7%	57.3%	6.0%
Education	86.1%	50.3%	35.9%	13.9%
Inter-cultural communication	85.1%	32.0%	53.2%	14.9%
Neighborhood revitalization	78.7%	39.1%	39.6%	21.3%
Horticultural therapy	68.1%	15.4%	52.7%	31.9%
Art	55.7%	9.8%	45.9%	44.3%
Job training	41.6%	13.2%	28.4%	58.4%
Income generation	34.0%	9.1%	24.9%	66.0%
Other	33.6%	24.5%	9.1%	66.4%

Reasons for garden loss

Essential to the survey was to understand the difficulties that organizations face in supporting community gardening efforts. In this regard, I depart from the standard approach in community gardens research that identifies structural limitations and instead borrow from the work of relational economic geography to reveal what it takes to make these sites work. As the relational economic geography literature has underscored, capitalist firms must connect with other firms and institutions to secure the knowledge, labor, and materials they need to thrive; however, this process is uneven and sometimes fraught with difficulty. In my relational approach to community gardening, I see

challenges as evidence of the key processes at work—in other words, the things that are most difficult to do might represent community gardening practices that are common across contexts. Those challenges are simply not yet known.

While there has been a general upswing in the number of gardens—89% of organizations reported developing new gardens or expanding existing ones in the past 5 years, totaling 2,517 new sites—they also reported garden loss. The ACGA board was particularly interested in understanding what caused garden losses; this has been a recurring question in their previous surveys. Respondents reported that 1,615 community gardens had been lost from 2007 to 2012.

A scan of case studies in the community gardens literature certainly suggests that loss of land to redevelopment is the key issue (Schmelzkopf, 2002; Lawson, 2007a). Strikingly, survey respondents did not only cite access to land as a main reason for garden failure, but also reported declining participation. In asking about the reasons gardens ceased to operate, we found that lack of interest by gardeners was the most frequent reason given (37%), followed by loss of land (30%), "other" (17%), and loss of funding (15%). Table 4.5 explains these responses in terms of organization size. Notably, lack of gardener interest is more highly attributed to garden failure among small organizations, while loss of land is blamed most highly among very large organizations. These trends can be partially explained in the way that coordinators of individual community gardens are likely to be deeply involved in the day-to-day activities of their members; representatives of very large organizations may be negotiating with a number of different landowners in different areas and thus face land issues more frequently.

Furthermore, any individual community garden that lost their land access likely would not be included in the survey sample if the garden ceased to exist.

Table 4.5. Percent of respondents stating reasons for garden loss, by organization size

Reasons	Small	Medium	Large	Very large
Lack of interest	67	27	50	59
Loss of land	11	18	30	59
Loss of funding	22	36	16	24
Other	22	45	22	21

Note: Size categories sum to greater than 100% because respondents could list more than one reason

Individual gardens can be affected by multiple challenges, and in a region there might be different factors at work that affect gardens differently. As a respondent from a large organization in Pensacola, Florida stated succinctly, “Lack of commitment from growers, lack of consistent organization, and lack of education for growers.” Another respondent, this one from a very large organization in Waterloo, Ontario, reported how community gardens might require the support of a range of actors based on the reasons that gardens folded: “one became a private business [because of land loss]; three because agency support stopped; three others [because of] disinterest from the community.” It is not just the direct flows of resources from partners that matter; community gardeners need to integrate their efforts into neighborhood life, and “opposition from neighboring homeowners” who are not gardeners can cause gardens to close down (large organization from Atlanta, Georgia).

These results suggest that there is no single essential factor in garden loss, even though many case studies argue that land access or urban politics is squarely to blame. Rather, it is clear from the quantitative and qualitative responses that the reasons for

garden loss are intertwined and often relative to the context of each site. For instance, decreased interest by gardeners may result in overgrown sites that lead the landowners to revoke leases. Nonetheless, land, sustained gardener interest, and funding are all major concerns for community gardens. It is more likely to be a complex result of the flow of knowledge, labor, and materials, which I examine in more detail in the following sections.

Everyday challenges

In addition to studying the reasons for garden loss, I also sought to reveal the everyday challenges that community garden organizations face. There was a list of twenty-two challenges that respondents used to indicate how often they address these issues. As shown in Table 4.6, community gardeners address a wide range of challenges on a frequent or occasional basis, from educating gardeners on safety, to dealing with neighbors and stakeholders, to seeking funding. Certainly, each community garden's local context shapes those particular challenges. The point here is that a common set of challenges seems to affect community gardens across the broad geographical and organizational contexts in which they is situated; this survey helped me find matters of concern that I then use the rest of the dissertation to investigate.

Table 4.6. Frequency that respondents experience challenges, by percent of respondents

Issues	Address frequently	Occasionally	Infrequently	Do not address
Materials used in the garden (soil, compost, water, etc.)	69	25	4	2
Getting new people involved	62	28	7	3
Keeping people involved long term	61	26	8	1
Horticultural training / gardening education	59	26	11	4
Recruiting volunteers	56	27	11	6
Funding to sustain programs	54	22	13	9
Collaboration with other organizations and institutions	52	28	14	5
Funding for new programs	44	29	16	8
Advocacy across the city/community	40	30	17	10
Understanding the safety of materials used in garden	40	31	24	4
Access to new sites for new gardens	37	29	14	18
Community building before a new garden is started	36	26	14	18
Funding for staff	36	15	11	29
Utilizing social media	36	30	19	11
Planning social events	29	42	19	8
Engaging with non-gardeners	29	36	25	10
Securing / protecting land for existing gardens	24	27	20	27
Cross-cultural dialogue	22	27	25	20
Addressing theft / vandalism	18	27	31	19
Inter-generational dialogue	18	34	27	18
Conflicts with community	9	23	34	26
Other	41	7	0	18

Organization size influences the way challenges are prioritized. For instance, access to land for new sites is a frequent or occasional challenge for 83% of very large organizations but only for 42% of small organizations. This might seem obvious—a group working with one garden that is stable wouldn't face land access issues as often as

an organization that seeks to provide new gardens throughout a city or region – however, this finding brings to light the influence of different missions and scope on the challenges faced. Along this vein, whereas 94% of very large organizations face the challenge of community building before a new garden is started, only 38% of small organizations identified this as a frequent or occasional problem. Funding for staff also emerges as an area of difference, with 24% of small organizations identifying this issue and 74% of very large organizations citing it. These differences also reveal possible differences between larger advocacy efforts that seek growth in gardening and the individual garden or garden group.

The most significant challenges

Whereas the above numbers show that community gardening organizations address a variety of day-to-day issues, I asked additional questions about the *significance* of these challenges. In a set of open-ended questions, I asked respondents to describe their most challenging issues. After coding responses into the categories of challenges in which they best fit (list in Table 4.6), I identified four sets of the most significant challenges for respondents—funding, participation, land, and materials (Table 4.7). These four issues are the most challenging for survey respondents across organization sizes.

Table 4.7. Types of issues reported as the most significant to community garden management

What are your most challenging issues?	Percent of respondents
Funding	61
People—getting new people involved, keeping them involved, or community building	58
Land—access to new sites or securing it long-term	23
Materials used in the garden (e.g., soil, water, compost)	22
Other	17

Funding

Funding is needed to both establish new community gardens and also sustain existing ones. This issue manifests differently based on temporal, geographical, and political-economic contexts. Although it is relatively easy to find grants and in-kind donations to build community gardens, participants recognized that funding is not just a one-time need. As someone from a large organization in Greenwood, South Carolina, noted, "Locating funding to sustain gardening efforts has been very challenging. Funds are somewhat available to begin new garden initiatives; however sustainability funds are not." A respondent from a large organization in Seattle, Washington, shared that concern—"While we are successful at fund raising for our new programs, we have difficulties raising money for our existing programs."

By expressing frustrations, respondents also alluded to the political-economic context of government funding priorities. A respondent from a large organization in Seminole, Florida, wrote about their efforts to dig a new well and install a new water pump—"SO wish the government would help small farmers like us to get a well in.

Billions for war and to BIG business and all we gardeners need is $1,400.00! IMAGINE!"

In sum, this survey builds on the funding issues that are well-known in much of the literature; it elaborates on the breadth of the issue and some of the ways in which it manifests differently across contexts (Armstrong, 2000; Twiss et al., 2003; Wakefield et al., 2007). In other ways, however, it challenges studies that suggest NGOs and local governments eagerly fund community gardens as a way to create neoliberal self-sustaining communities (Pudup, 2008; Rosol, 2012). While such funding may be the case for garden start-up, it is more difficult to secure that resource over a long-term. Funding thus represents a key material that will remain a focus of the rest of this dissertation. How community gardeners get the money needed to start and maintain their sites will bring them into contact with other gardeners and institutions. They will also develop ways to generate their own income as well as configure their practices in such ways that lessens the need for money in general.

Participation and labor

Community gardeners' collective labor is another issue that is pervasive across community gardening contexts. Community gardening certainly requires work and commitment on the part of garden members, as respondents made clear. Producing and distributing food, maintaining the overall garden site, and advocating for resources, and fundraising are all tasks involved in creating and sustaining community garden sites. I explore these themes further in Chapters 6-8; here I use the survey to understand the degree to which it affects garden practice across the U.S. and Canada.

Survey respondents indicated that their garden members' participation is shaped by the fact that each gardener must decide how much to work for their own personal and collective benefit. The decisions between personal and community labor seem to be a two-sided aspect to community gardens—social engagement is a benefit, but getting and keeping people involved is also a challenge. On the one hand, 99.5% of respondents consider social engagement and well-being to be either a primary or secondary benefit; 66% of respondents consider social engagement, community building, or neighborhood revitalization to be one of the most significant outcomes that they have seen. On the other hand, 90% stated that they must either frequently or occasionally try to get new people involved, while 87% reported that a frequent or occasional challenge was to keep people involved long-term. Overall, cultivating individual and community relationships—getting new people involved, keeping them involved, and community building—was one of the biggest challenges for 58% of respondents.

It is often the realities of gardening that influence people's participation; springtime enthusiasm can often lead to mid-summer discouragement amid mosquitoes, heat, humidity, weeds, and pests. As stated by a respondent from a large organization in Avenal, California, gardeners can simply be overwhelmed by the amount of work:

> "People often neglect their garden spaces and claim to not have enough time. We try to inform new gardeners of the amount of time they will need per week to maintain their garden. It can be difficult to get people interested in trying gardening if they have never done it before."

In a community garden, however, these issues are compounded by the fact that people may disagree on how to manage the garden site and to what extent they want to participate in group work days and the maintenance of shared areas. While most

gardeners start out the year full of vigor, their devotion seems to wane as the year goes on as told by a respondent from a small organization in Indian Lake, New York:

> "Though we always seem to have more volunteers signed up to help throughout the garden season we seem to end up without any volunteers come the last few weeks of the season. Everyone seems to be vested in the garden but as soon as the weather doesn't cooperate, repairs are needed, or the bugs are bad, people seem to lose interest."

This commitment is needed not just for the span of one gardening season, though, but over many years—a challenge noted by someone from a medium organization in Idaho Falls, Idaho who stated, "The biggest challenges have been engaging gardeners who will get involved in the sustaining of the gardens in the long term."

What exactly is at stake here is not just gardeners' maintenance of their personal plot in the garden but their collective labor that maintains the garden as a whole. There is an unevenness in the ways that gardeners contribute to collective labor: "We have a hard time keeping some gardeners going with their plots and "policing" those who do not. Most communal work (e.g., path maintenance) is done by 10% of the gardeners" (respondent from a small organization in Oxford, Mississippi).

These comments illustrate the importance that respondents placed on participation in both personal and collective labor that is needed to sustain gardens. The material state of garden sites depends on participants' work; for instance, if gardeners abandon their plots they are overtaken by weeds and rotten produce. This labor extends beyond the cultivation of plants and soil, however, as participants organize food distribution, clean and maintain shared areas, and lobby agencies and organizations for materials and land. Even if the notion that community gardening includes a commitment to working with others, this process is not straightforward given the participatory decision-making

processes often seen in community gardens (Nettle, 2014). Deeper understanding of how and why gardeners choose to appropriate and distribute surplus labor for community benefit is deeply tied to the concerns of community economies research (Gibson-Graham, 2006). I return to this point in Chapter 6 as I explore the internal dynamics of community gardening and the ways that community gardeners work to distribute food to external clients. In the conclusion of this chapter, I elaborate on the concept of labor as a way to find common ground across community gardens.

Land

Although community gardens function as a commons, there are a variety of land ownership patterns on which these sites take place. The literature shows that community gardens are often located on borrowed, leased, or squatted land—whether vacant lots, undeveloped marginal areas, or within parks and preserved land. Respondents, though, stated that nearly one-fifth of garden sites are owned outright by the community garden or gardening organization (18%). Otherwise, these sites are owned by public entities (48%), privately (24%), or by land trusts (4%).[12] Across organization sizes, public land is the highest proportion for each category. Very large organizations reported the lowest rate of garden land ownership—only six percent. In contrast, small, medium and large organizations owned 38%, 10%, and 32% of their gardens, respectively.

Given the diversity of land ownership patterns, conflicts with developers are probably not the only underlying issue with getting and keeping land access. There can be tension as landowners push agendas (e.g., environmental stewardship, nutrition) that

[12] Respondents did not know the land ownership type for 6% of the community gardens they reported.

discourage gardeners who may not share such concerns (c.f. Staeheli et al., 2002). Additionally, when community gardeners are forced to move locations, unexpected challenges can come up:

> "We had one garden, but had to move twice, first from a private space, then from a public space. The second time, we split into two locations. So we had a net gain [in the number of gardens], but it was after we lost two other spaces, and the total space we have now barely replaces what we had at the original garden."
> Respondent from a medium organization Los Angeles, California

This last quote suggests that the social and environmental context of land access is as important as access itself. The size and configuration of land parcels can affect the activities of an entire group of gardeners, and the example above shows how space is important in its various qualities. Just because land is available does not make it suitable for community gardening. Moreover, land ownership, seemingly so vital in a capitalist economy, is less challenging than is the management of those sites. Although land is so often put forward as the essential factor in community garden longevity and in urban agriculture literature more broadly, land access itself does not guarantee a working community garden. If people do not want to work, the community garden will cease to exist. The internal dynamics that govern the labor aspects of community garden maintenance are explored in more detail in Chapter 6.

Materials

Lastly, materials used in community gardens—for example, soil, water, and compost—were either a frequent or occasional issue for 94% of all respondents, a figure that is similar across organization sizes. Twenty-four percent stated "materials" as one of the most challenging issues. More large and very large organizations reported this as a top issue (30% and 27%, respectively) than did small and medium organizations (22%

and 17%, respectively). I suspect that this difference comes from the greater work that larger organizations do to access and distribute materials to a larger number of garden sites. What these figures say about community gardening broadly, though, is that the task of obtaining materials—water, tools, seeds, soil, and so on—is an everyday issue that can lead to networking practices, and that some kinds of networking practices might lead to better materials provision. Additionally, the need to get materials can directly impact other facets of community gardening—the lack of a reliable water supply, for instance, can lead to decreased participation.

Respondents drew attention in their open-ended comments to one specific material: water. In conventional agriculture, water is of course a well-discussed topic. Water access is discussed in many community gardening studies, but is less often the central focus of investigation (e.g. Armstrong, 2000; Twiss et al., 2003; Drescher et al., 2006; Wakefield et al., 2007). Others examine water from a policy and reclamation perspective in urban and peri-urban agriculture (Smit and Nasr, 1992; Perret, 2002). There are many studies on rainwater harvesting and catchment techniques that can be used by community gardeners, but few elaborate on the existing state of water access in various contexts. Turner (2011) shows that in Australia, water conservation within community gardens is hotly debated. In parts of North America, this may be the case as well, but remarks about water in our survey all related to the availability of water—getting it to the garden in the first place.

This survey contributes to understanding water access in community gardening by putting it in the context of resource flows. Specifically, it shows how the seemingly simple matter of delivering water to the garden can be a major task. Respondents did

remark that water access was a general issue. More interesting, though, is how it mattered. Getting water to the garden site, and then making sure that all garden members have access to that water within the site, entails working with external partners. As a respondent from a small organization in Atlantic Beach, Florida, stated, "The city wants to see progress on the garden before it will consider helping to bring water to the site, but how can you have a garden without water?" Alternatives to piped water are insufficient in other cases, as this respondent from a large organization in Pittsburgh, Pennsylvania made clear:

> "Water is a huge challenge. We find that it is impossible to maintain a healthy garden with just rain barrels. But installing a permanent water line is expensive and a long-term financial obligation for the garden."

Still, other respondents brought up the ways that water access and funding are entwined, and the challenges this entails:

> "Our garden needs a new deeper well and a new pump. This will cost us approximately $1,400. We have been collecting money over the past two years selling our extra produce and seeking donations of any sort to get this job completed."
> Respondent from a large organization in Seminole, Florida

> "People are eager to start their gardens, but one major problem is the water meter which costs $10,000."
> Respondent from a large organization in Santa Fe, New Mexico

Lastly, concerns about water availability in places without public water supplies came up:

> "Our water is provided by a well, and Texas has been in a drought. Running out of available water is a big concern for the upcoming season."
> Respondent from a small organization in Round Rock, Texas

These examples show that in a broader geographical context, water access manifests differently. I see this in my own fieldwork as well. In cities, public water

supply may not be available on land parcels that have never been developed (such as utility rights of way). Often, fire hydrants can be used to fill barrels in those cases, but this practice depends on the strength of the relationship between the garden organization and the municipality. In suburban and rural areas, public water supply may not be available at all, in which case wells must be dug. In places where public supply exists, these garden sites may be large enough in area that the cost to extend new pipe and faucets to irrigate all parts of the garden may be prohibitive. In such cases, tension mounts between gardeners and public authorities as shown in the quote above, when water agencies doubt whether the investment would be matched by long-term gardening commitment.

Conclusions

In leading off the empirical work of the dissertation, this chapter raised the importance of moving beyond the individual community garden as the unit of analysis. It started from two questions that challenged the accepted way of conceptualizing community gardens as highly localized, insular, and disconnected. First, it simply asked where is community gardening happening? It turns out that it is a widespread activity across North America—that much is clear just from this sample. Furthermore, although reports show that community gardens are expanding in cities across countries in the global north, this study suggests by census measures that gardening activity more broadly (not just gardens but actors supporting these efforts) is expanding across urban, suburban, and even rural areas in the U.S.

Second, there have been few attempts to systematically understand how community gardens are managed across the contexts in which they are situated. This

chapter has shed light on practices and processes that are shared among community gardens in North America. Building on case study research that has shown both benefits and challenges related to community gardening, I set out to get a better understanding of these issues at a broad scale. In particular, as community gardeners and stakeholders share information, how relevant are their experiences to others in different contexts? This question is not answered through the ways that community gardens have typically been defined—by the motivations of their organizers and as discrete units.

This survey points to the process of community garden management as a way to find shared characteristics of community gardens. I found that garden organizers and managers share the experience of finding and keeping funding, participation, land, and materials. Looking toward the *how* of community gardening, rather than the *why*, is a more generalizable way to explain the phenomenon in general. There is remarkable geographical and organizational diversity in the survey, and the size and purpose is likely to vary as much as the location; there is community gardening from global cosmopolitan cities to isolated small towns, but those involved in it may not necessarily be driven by the same concerns. Whereas one might find community gardens to be a response to poverty in some locations, it is not for many others. When coming together at national conferences, though, people are more likely to find common bonds through the work it takes to manage these sites, regardless of the underlying reasons for getting involved. Given this expansion across much of North America, a definition that unites community gardens would draw on this process of starting, supporting, and maintaining these sites and programs.

In this perspective, I see community gardening as part of a growing social or community economy (Amin et al., 2003; Gibson-Graham, 2006), and a practice that is constituted through local and extra-local networking. People produce and distribute food, and support these efforts, by securing the funding, participation, land, and materials to do so. Even when these management processes are contested and prone to disagreement, it is a collective effort to sustain a commons. Even if motivations differ widely, there is a shared sense of community well-being. Cooperation is not a given, though, as shown above; decisions on how to balance collective and personal labor are always in flux. Across contexts, then, I argue that this particular view of economy is a valid entry point for discussing community gardens.

By looking at organizations and not just individual garden sites, this chapter also rethinks community gardening as the product of networking practices that extend beyond garden boundaries. The work to sustain and grow community gardening draws together a range of actors working at different locations relative to garden sites. Likewise, community gardens differ in respect to funding, participation, land, and materials by the scope of one's involvement. Someone leading an individual garden may turn their attention to developing strong participation among the other gardeners once their land is secured. A very large organization responsible for dozens of sites, however, is more likely to focus on securing land for additional locations and negotiating with various agencies to secure materials for these sites. The nature of community garden management means that at different levels of engagement, actors experience these processes differently. Furthermore the particularities of these issues are shaped by local context, but practitioners can use the topics presented here as starting points for sharing knowledge.

This organizational approach foregrounds the process of community *gardening*, and reveals that networking practices are common across the board. This survey thus suggests an ontological shift in thinking of community gardens not as isolated, individual sites but as networked among many other local relationships. Community gardens are not sites that can be built and expected to run on their own (Drake, 2014). They need to be woven into existing community efforts with attention to the resources needed not just to start but also to sustain them. The remainder of the dissertation returns to the community garden as a locus of activity, but draws on the lessons from this chapter's use of "organizations." How exactly do these connections affect gardening efforts; what role do external partners play in securing resources? How these relationships are structured, and to what effect, require in-depth study; this is the focus of chapters seven and eight, which take on local networking and institutional partnerships.

This chapter began by suggesting that attendees of national conferences might be interested in sharing knowledge and in seeking knowledge that is applicable "back home." While this chapter did not study knowledge exchange at those conferences, it provides a baseline for what topics and experiences are common to many community gardens regardless of context. The resources that may be the subject of networking practices include funding, participation, land, and materials since these are the most-cited challenges. I contend that knowledge about these topics is equally important, and the ways that knowledge, labor, and materials overlap one another through networks is addressed later in the dissertation.

Before diving into how these processes entwine with local contexts, though, another broad analysis is needed. Whereas this chapter provides a contemporary snapshot

of community gardening as a process, the next makes a historical assessment of the ways these practices have been conceptualized, and to what effects. Just as this chapter focused on the process of garden management in order to investigate them as networked phenomena, the next chapter examines how historical discourses have prevented this networked conception and positions community gardens as isolated, temporary sites.

Chapter Five: The tension of means and ends in garden advocacy: A genealogy of the internal and external dynamics of community gardens[13]

The previous chapter revealed the ubiquitous geography of community gardening as well as some shared aspects of how community gardens work. Clearly, community gardening has expanded across the U.S., is growing rapidly in suburbs, and involves a range of actors supporting community gardening in different ways. Yet, it is also clear that sustaining community gardens is at least as difficult as starting them. This chapter addresses this dilemma by returning to a major theme in Chapter 2: community gardens are largely represented as ameliorative and temporary. In this chapter, I use the notion of means versus ends to frame this representation; the dominant discourse portrays community gardens as a useful means toward a variety of ends, but since they are not seen as ends in themselves, they are also portrayed as sites that local authorities do not have to support in the long-term.

Community gardens are consistently praised for all of the work they do, yet despite the long list of positive effects stemming from community gardens, they are almost always understood in popular press and scholarly literature as only a bandage relative to urban problems. They might provide some comfort or support in distressed neighborhoods, but they cannot address urban problems *per se*. This assumption is evident in the way that policymakers often see community gardens as a means to an end,

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[13] A previous version of this chapter was published as Drake, Luke, and Laura Lawson. 2014. Validating verdancy or vacancy? The relationship of community gardens and vacant lands in the U.S. *Cities* 40, Part B (0):133-142. The material used in this chapter is the author's work.

but not an end in themselves. For example, Henderson and Hartsfield (2009), in a paper directed at local governments, discuss how local governments can engage community gardening; they start by stating "the term community garden evokes the image of a blighted, debris-laden corner becoming a green sanctuary (Henderson and Hartsfield, 2009). This statement contains not-so-subtle hints about how community gardens are understood—as spaces that only become possible once something goes wrong in the capitalist economy such that blight, disinvestment, and vacancy emerge within city centers. In that narrative, it is unimaginable that a community garden could also be a part of a thriving neighborhood.

Furthermore, the literature makes clear that the ameliorative properties of community gardens—to produce green sanctuaries amidst urban blight—will only be needed until the underlying problems are addressed, until economies rebound and investment returns). Contemporary scholarly literature often specifically invokes community gardening as a temporary solution to failings in urban economies that manifest in an oversupply of vacant land (Rosol, 2005; Shigley and Cleaver, 2008; Németh and Langhorst, 2013). This is not a recent turn in community garden advocacy, though. Government agencies and philanthropic groups have historically planned community gardens and urban farms as intentionally temporary projects; they have particularly been successful in casting community gardens as only needed during economic downturns, and thus removing support for them when the need for them has ended (Schmelzkopf, 2002; Lawson, 2005). Even in places where local government supported community gardens and saw them as integral parts of the city, officials have recast them as only temporarily needed (Moore, 2006). As such, there is often the

implicit assumption that community gardens are anomalies within the urban landscape, much like the idea of vacancy itself (Bowman and Pagano, 2004).

As a result, vacant land is specifically targeted as the location for community gardens. Scholars, policymakers, and advocacy groups continue to promote community gardens on vacant land, justifying them through the multitude of expected outcomes despite the massive challenges community gardeners have faced in sustaining them (see Chapter 2). In that perspective, community gardens work as sanctuaries during times of blight—a term that carries presumptions about both people and land. That is to say, community gardens provide a bandage for the built environment and the social dynamics of cities; they keep unemployed people busy, provide a sense of food security, and maintain social cohesion. At the same time they prepare the land for reinvestment, quite literally by gardeners' removal of rubble and trash and through the way that community gardens increase property values (Voicu and Been, 2008).

Yet, by shifting to community gardeners' perspective, it is evident that they see community gardening as an end in itself. As meaningful parts of their neighborhoods with ongoing benefits (see Chapter 4), they do not see gardens as merely temporary solutions to the problem of vacant land (Saldivar-Tanaka and Krasny, 2004; Hou et al., 2009; Eizenberg, 2013). Indeed, some scholars point out that defining community gardens relative to vacancy elides their ongoing importance. Knigge and Cope argue that "the term 'vacant' implies a lack or absence, but… [community garden sites] instead reflected the presence, action, and commitment of those who created the community gardens" (Knigge and Cope, 2009, 108). Even though there are some examples of cities making more permanent measures for community gardens, and of individual gardens

gaining permanence, there is a persistent discourse in which community gardening is framed as being relative to some shortcoming in the economy.

This tension between the discourse offered by outside observers and gardeners reflects an undercurrent about whether community gardens are only means to ends, or if they might also be ends in themselves. If they are ends in themselves, then they are integral parts of the urban fabric that might carry their own dynamism and agency. The latter notion is, in fact, evident in scholarly research albeit often indirectly. From a diverse economies perspective, these representations are all too similar to others that frame the economy as uniformly capitalist and all other forms of production as fleeting or extraneous. Indeed, "vacant land" itself is defined by the lack of capitalist activity, with any other uses relegated to interim, illicit, or informal status. With community gardens, these representations take on a clear materiality insofar as NGOs, governments, and scholars simultaneously want to start them but do not want to provide the conditions for their permanence—as evidenced by the discussion in Chapter 4. Certainly, Chapter 4 showed that continuous labor is needed to support garden longevity, but for those gardeners who take an avid interest in their sites it is clear that community gardens are an integral part of life and that they want the resources such as land made permanently available. Perhaps these voices should be something that scholars and policymakers use to inform our ontological understandings of community gardening. Thus, it has become common sense for outside observers to define community gardens as simply emerging out of blight, understood only as a blip in the capitalist economy instead of the hard work of community gardeners (Henderson and Hartsfield, 2009).

How did the common assumption that community gardens are temporary become so prevalent and persistent? Through a Foucauldian genealogy, this chapter unpacks how the narrative of temporariness became dominant despite the gardeners' voices that suggest resources for community gardening should be made permanent. First, I review three themes that explain some of the views on community gardens relative to urban economies[14]. I then elaborate on the discourse analysis method and materials; this involves archival research of documents from the late 1800s to the early 2000s. Then, I examine key discursive moments in community garden advocacy to present the ways that gardens and gardening have been portrayed relative to vacant land. I then discuss how the identification of community gardening with vacancy, and thus as a temporary activity, is not an immutable truth but an idea that has persisted through its continuous discursive reproduction. The development of this narrative reaches a point where community gardeners also use contradictory discourses of means and ends. I conclude by arguing that while it is exciting to see innovative uses of vacant land, the persistence of historical narratives makes it difficult to enact community gardens as something more than a bandage but as a productive part of a diverse economy, whether in cities, suburbs, or rural areas.

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[14] The focus on urban economies here is due to the prevalence of the discourse associating community gardens with cities. In Chapter 4, I challenge the notion that community gardens are exclusively an urban phenomenon. In this chapter, however, the focus turns toward discourse around urban space in order to trace the assumptions of community gardening as temporary.

Discourses of community gardens and urban economies

Before examining the archival evidence, existing literature helps explain the tense relationship between community gardens and urban economies. First, community gardens are often centers for grassroots social movement; they have at times been the center of struggles over the right to urban space, are sites of resistance to disinvestment, and can challenge the status quo favored by the state (Eizenberg, 2013). For example, community gardens were central to struggles over public space in New York City during the 1990s (Schmelzkopf, 2002; Staeheli et al., 2002). Then-Mayor Rudolph Giuliani had embarked on a campaign to privatize city-owned properties, and many of these sites had long been established as community gardens. As grassroots social hubs, community gardens challenged the Giuliani administration's control of social space and orientation toward market-friendly policies. In order to restore the status quo of market-based land development, the Giuliani administration aimed to demolish garden sites but had to first discursively cast community gardens as relics of a bygone era and out of line with the time "after communism." These actions demonstrated the administration's opinion that community gardens had not only served their purpose, they were obsolete in capitalist cities.

Second, community gardens challenge assumptions about the essential characteristics of urban space. The notion of public gardening in cities has long conflicted with planners' ideas: "parks are not areas for market gardens for individual profit but are places of recreation, of inspiration, and enjoyment for all" (1920 editorial in The Park International, quoted in Lawson, 2004). Moore (2006) examines how community gardens challenge the ideals of a capitalist urban landscape—ideals constructed through the influence of the Chicago School of sociology regarding economy and nature. Through

her case of urban gardens in early 20th century Columbus, Ohio, she finds that not only were they sites of non-capitalist commodity production, but they were also places of productive nature—not merely recreational or decorative—within cities. Although once supported by local government, after the Great Depression city leaders thus no longer saw Columbus' gardens as something the city should support. In turn, they redefined gardening from being a livelihood to being a recreational activity. As Moore illustrates, through this discursive shift by the local state, "the 'normal' preexisting practice of gardening became a 'relief measure' and vanished, both from public memory and from the landscape itself, with the passing of the crisis" (Moore, 2006, 187). As the state reframed urban agriculture as an activity meant to address unemployment, it followed and perpetuated a historical pattern in which urban gardening was mainly valued through its intended outcomes; and as Lawson (2005, 288) argues, "if it is a means to other ends, the [community] garden is only useful until those other goals are met."

Third, the planning field has historically found it difficult to consider community gardens a public good. Urban theorists in the first decade of the 20th century—like Charles Mulford Robinson—were not averse to gardening in cities *per se*, just gardening on public land and the planning of space for such activities (Lawson, 2004). They described community-managed spaces such as gardens to be outside the purview of professional planners, did not consider them to be "public goods," and "this perspective framed gardening as a good temporary use of derelict land…but not necessarily a permanent land use" for cities to consider (Lawson, 2004, 166). Examining why city officials in Sacramento preferred parks over community gardens, Francis found that they "saw the chief benefit of the gardens as being 'the property is maintained versus leaving

it vacant,'" and urban agriculture as thus was not seen as a legitimate long-term part of the city (Francis, 1987, 106).

In sum, it is clear that the relationship between community gardens and urban economies is one seen by experts and policymakers as temporary. This understanding is not self-evident, however, but must be continuously reproduced and reaffirmed by marginalizing those practices, such as the cultivation and harvesting of food, that have long occurred in cities (Gabriel, 2011). Community gardens, long associated with the existence of vacant land, increasingly garner attention through the efforts of garden organizers to gain permanence for individual sites. A Foucauldian approach to knowledge can thus shed light on how this assumed characteristic of community gardens persists in spite of the nearly continuous practice over the past 125 years and the increasing attention of community gardeners to its integral role in city life.

Methods and materials

I believe that a historical perspective can shed light on the processes through which community gardening has often come to be identified as a temporary practice—an interim use of vacant land. Below, I use the interpretive frame of genealogy, which is effective in tracing the complicated histories of taken-for-granted assumptions (Foucault, 1984; Elden, 2009). This form of analysis particularly focuses on the ways that dominant narratives persist even though exceptions repeatedly appear (Campbell, 2009). I draw on the contention that discourse is not a neutral reflection of reality but actively shapes it (Foucault, 1981; Lefebvre, 1991; Lees, 2004). That is to ask, does the discourse of temporariness really just reflect the essential nature of community gardens, or does that discourse play an active role in limiting them to being temporary? This is the work of

discourse analysis from a Foucauldian perspective. In sum, I aim to understand how the knowledge of community gardening as temporary has been formed.

I use Foucauldian discourse analysis to understand the tensions between means and ends in the contemporary community gardening movement, as discussed in chapter two and the introduction to this chapter (Jacobs, 2006; Dittmer, 2010). The empirical data include reports, promotional materials, and media articles published around the U.S. from the late 1890s to the 2000s by non-governmental organizations; municipal, state and federal government agencies; private industry; and garden advocacy groups. I accessed photocopies of the original materials that Laura Lawson, Professor and Chair of the Department of Landscape Architecture at Rutgers University, obtained from the following sources: the Library of Congress, National Agricultural Library, university libraries, and horticultural society libraries. Those archival data are now housed in the Department of Landscape Architecture at Rutgers University. Additionally, I accessed newspapers and blogs that addressed community garden advocacy in more recent years, as well as publications by the American Community Gardening Association from the 1970s to 2000s. These documents reveal advocacy efforts in many cities across the U.S., but they all were incorporated into national and regional efforts. Due to my specific focus on community garden discourse, I selected periods of intensive community garden advocacy in the U.S. that have been previously identified (Bassett, 1981; Lawson, 2005). Due to the similarities in the contexts of advocacy efforts, I organize the analysis into the following categories—the 1890s and 1930s depressions, World Wars I and II, and the 1970s to present. Following established discourse analysis methods, I pay close attention to two aspects of these documents (Lees, 2004; Jacobs, 2006; Dittmer, 2010). The first

aspect is the context in which they were produced—these documents were written for specific audiences by people with power to shape discussions over the allocation of space for community gardens. Second, I take note of the text itself—how community gardens and vacant land are portrayed in relation to broader society.

Community gardening as a relief during economic depression

"Vacant Lot Cultivation Associations" in the 1890s

In 1890s America, gardening was an attractive solution for a range of economic, social, and environmental concerns and spurred inter-connected efforts in income-generating vacant gardens, school gardening, and beautification efforts (Lawson, 2005). Of particular interest to this chapter is the effort to engage unemployed workers in gardening for food and income, known as Vacant Lot Cultivation Associations (VLCAs). Advocacy directed toward the unemployed during this period centered on the survival of individual families—allowing poor residents to grow a wide variety of food for household consumption, including food that could be stored for winter, and to sell surplus produce. Starting in Detroit in 1894, the success of "Pingree's Potato Patches" inspired other charitable organizations in many U.S. cities to develop VLCAs that would access land, provide supervision and materials, and enlist unemployed workers. Via the circulation of correspondence between charity organizations in many of the nation's cities, putting the unemployed to work on vacant land became a common method of

providing social aid. By the end of the decade there were reports of 22 vacant lot cultivation associations across the country (AICP, 1898; Speirs et al., 1898).[15]

Annual reports and articles in newspapers, magazines, and charity journals made a case for gardening to help the poor; they also justified gardening as a form of efficient charity that satisfied concerns about the worthiness of recipients and avoiding dependency of government and charity aid. As charity organizations increasingly came to dominate gardening advocacy, the terms of reference shifted from merely helping the poor to grow food toward mantras of self-help (PVLC (Philadelphia Vacant Lots Cultivation Association), 1898; Speirs et al., 1898). For instance, the Association for Improving the Condition of the Poor (AICP) formed through discussions between Bolton Hall, a back-to-the-land activist, and other groups such as the United Hebrew Charities and the Charity Organization Society. [16] As stated in a report of the first year, "the cultivation of the city lots by the unemployed was not a mere charity, but a relief scheme which aimed to establish habits of self-reliance, to teach the poor to become prosperous, to make farming more profitable, and to increase the sum of wealth…" (AICP, 1898, 3). The report also stresses to potential VLCAs in other cities that "any who are able but will not work should not be helped at all. It is easier to get the people back to the land than the land back to the people" (AICP, 1898, 8-9).

As the AICP exchanged correspondence with organizations and governments around the country, normative ideas of self-help and "willing and capable" gardeners

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[15] Boston, Brooklyn, Buffalo, Chicago, Dayton, Denver, Detroit, Duluth, Kansas City, Minneapolis, New York, Omaha, Philadelphia, Providence, Reading PA, Rochester, Seattle, Springfield MA, St Louis, St Paul, Toledo, and Washington, D.C.

[16] For information on the AICP, see (Coble, 2010).

were entwined with assumptions about urban land. Both scholarly and popular literature of the time characterized urban gardening as occurring on waste land and idle land, which needed to be put to use (plan, 1895; Flowers, 1896). As one observer of urban gardening in the late 19th and early 20th century, "both idle men and idle land exist in every American city of any size, and bringing them together will benefit the land, the men, and the community" (Annin Jr., 1915, 346).

However, "vacant lot gardening" at that time referred to large undeveloped tracts at the urban edge or outside of the city—not the abandoned parcels within cities as they would be known today. Typically, organizations made arrangements with land owners for temporary use of a site being held in speculation, often with a stipulation that the land would be given back to the owner in as short a time as 10 days. The Philadelphia Vacant Lots Cultivation Association, which ran from 1897 until around 1927, experienced frequent shifting of garden sites over time due to land development patterns. When the program began, the organization used information from an assessor to develop a list of available plots of land in each ward. In the first year, about 40 people offered their land in lots that varied in size from a single building lot to a sixty-acre tract, mostly in the western and northwestern parts of the city about five miles from city hall. As the economy improved and urban land development resumed, the program had to seek new properties, moving further out to sites in line for future development.

In New York, when organizers first proposed the AICP effort they documented over 17,000 vacant lots (more than 1,400 acres) south of West 145 Street and the Harlem River; however the land was considered unsuitable because lots were too spread out, of poor quality, hard to supervise and secure, and difficult to yield from the "rapacity of

speculators" (AICP, 1898). Rather, the well-connected AICP Committee was able to arrange a donation of 138 acres in Long Island for their efforts; although ultimately the "farm" had to move multiple times through the duration of the program (NYVLGA (New York Vacant Lot Gardening Association), 1907; Hall, 1910).

Relying on temporarily donated land, the "experiment" had to move often, undervaluing the gardeners' investment into site cultivability. Furthermore, the garden organizers expected the newly-trained gardeners to move out of the city and take up farming. Outspoken garden advocate Bolton Hall of New York, emphasized this ambition by stating "the way to cure both [congestion and high food prices] is to make it easy for people to go to the country and to teach them how to support themselves there" (Hall, 1910, 1). Vacant lot gardening was not about creating an urban land resource but a training ground that would move people out.

Subsistence and work relief gardens of the Great Depression

I now shift to the 1930s, when unemployment again soared and local communities and organizations mobilized gardening efforts in collaboration with federal relief programs. These local efforts became the foundation for municipal, state, and ultimately federally supported relief garden programs (Wolfe, 1935). As the scale of gardening discourse and implementation matched that of federal relief efforts, many Americans experienced urban gardening as part of their relief packets. These relief packets often provided materials and seeds to start a "subsistence garden" at home or on a vacant lot, or gave wages for work in a cooperative garden project growing food for institutional use. Indeed, aid recipients were often required to prove they maintained subsistence gardens in order to receive aid (Rehder, 1933; Young, 1933).

Vacant land was the locus of efforts to implement such relief efforts. The emphasis to, at the very least, “utilize desirable and suitable idle plots of ground,” extended to back yards and vacant lots (POUR (The President's Organization on Unemployment Relief) 1932, 2). A relief aid application form from Birmingham, Alabama, for example, asked whether applicants would like to have land provided for them or if “there is a vacant lot near me I would like to work” (Colcord and Johnston, 1933, 67). In some accounts, back yard and vacant lot gardens were even classified together (PECE (The President's Emergency Committee for Employment) 1931; Wolfe, 1935). Vacant lot gardening during the Great Depression implied decentralized, family-scaled endeavor, while the term “community garden” was associated with centrally organized projects on larger tracts with individual assignments (Wolfe, 1935, 5). As Colcord and Johnston (1933, 30) of the Russell Sage Foundation point out, “[since] it is found that vacant lots scattered over the city cannot be secured, a partial solution of the difficulty may be effected by providing a large-area garden for each of the larger districts of the city.” As in the 1890s depression, gardening advocates preferred obtaining large tracts of land in order to manage funding and monitor gardeners’ behavior (figure 5.1).

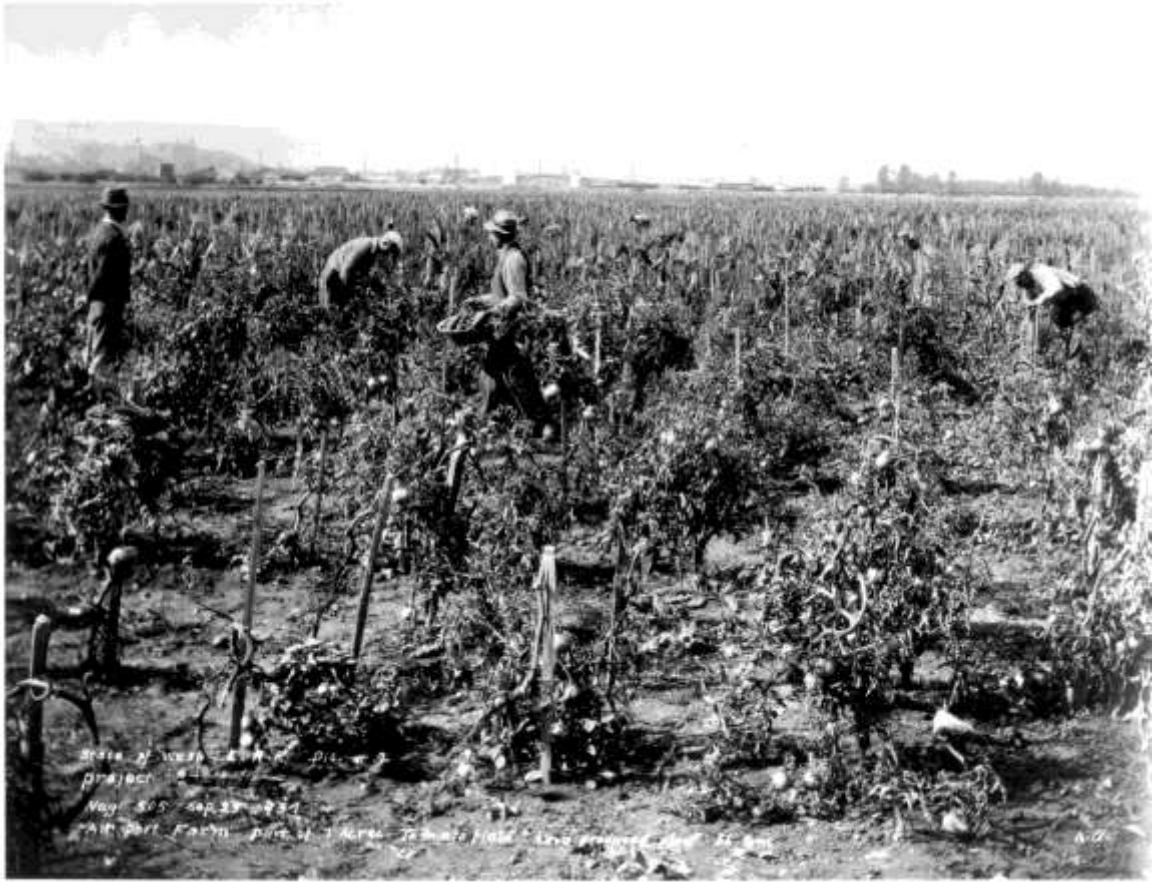

Figure 5.1: the FERA Airport Farm, in Seattle, illustrates a large-scale work-relief program in which the participants earned income growing food for institutional use. Courtesy of Manuscripts, Special Collections, University Archives, University of Washington Libraries, UW 18910

Through these tensions in managing both land and gardeners, it is evident that program managers—who themselves experienced temporary shifts to responsibilities associated with relief efforts such as these—saw relief gardening as a stop gap measure. Federal and industrial sources quite clearly labeled gardens as a resource to address emergency food supply. Gardening advocates emphatically stressed the problem was that most people could not afford to buy the food that was available. Federal documents explicitly stated that garden-produced food would not compete with the food industry and was "not for sale on an already-oversupplied market" (PECE (The President's Emergency

Committee for Employment), 1931, 1).[17] Industrial gardens, such as those at the Goodrich Tire plant in Akron, Ohio, specifically prohibited workers from selling *or* bartering food, even with other gardeners (B.F. Goodrich Company, 1933). The Russell Sage Foundation most clearly stated the role of gardening to address the immediate emergency of food access: "it is the duty of any group sponsoring a subsistence garden plan to take every precaution that legitimate trade, for which a market exists, be not interfered with by the sale for cash of any of the foodstuffs produced" (Colcord and Johnston, 1933, 7). Gardening, then, was organized through a discursive link between vacancy and temporariness—it was about food for the family and the land was temporarily provided for the emergency and not beyond it.

This said, advocates also framed gardening as a means to serve a wider role in the psychological impacts of unemployment and poverty. According to a U.S. Department of Commerce report, “Not only is gardening a means of supplying adequate food at low cost, but there is always the added advantage of preserving self-reliance and self-support of the family” (U.S. Dept. of Commerce, 1932, 1). As such, gardening-as-aid built on the notion that direct welfare has “demoralizing” effects on citizens (Colcord, 1931, 5). Harry Hopkins, head of the Federal Emergency Relief Administration, explains it this way: “When you get a man out of the house and into the open, with spade and rake and hoe, you lift him out of a bad mental state into which enforced idleness inevitably plunges him” (FERA (Federal Emergency Relief Administration), 1935, 56). A 1932 editorial in *Nature Magazine* succinctly frames vacant-lot gardening as a temporary activity in a temporary space. It explains why people would garden in the first place

[17] See also (U.S. Dept. of Commerce, 1932; Harmon et al., 1936).

("work for the unemployed simply did not exist"), informs that the primary site for what it calls "food gardens" are vacant lots ("vacant land about the town was leased or contributed and divided into small plots"), and describes the type of subject that is produced through vacant-lot gardening ("as the gardens grew, so also grew the saving grace of self-respect among those who cultivated and labored there. Men and women might indeed still be charges on the community, but at least they had honest work to do, and by the very measure in which they did that work well they and their families would raise food for themselves" (Nature Magazine, 1932, 5).

The domestic war front: Gardens mobilizing "slacker land"

During both World Wars I and II, federal agencies and national organizations framed gardening as a popular aspect of domestic war preparedness, addressing a strained food system, drawing people together, and encouraging health. In World War I, the message was that people were starving and Americans must grow food so more could be sent overseas. As President Woodrow Wilson stated, "everyone who creates or cultivates a garden helps, and helps greatly, to solve the problem of the feeding of nations" (Wilson, 1917, 220). By World War II, there was more confidence in large-scale agriculture bumping up production; however, gardening was seen as a way to improve domestic nutrition. The importance of gardening was not just in the material production of food, but also in the symbolic linkage of U.S. civilians and soldiers abroad, because as the National Victory Garden Institute put it, "food will be one of our major weapons of war" (NVGI (National Victory Garden Institute), 1943, 3). Campaigns thus promoted gardening in any available space from backyards to public land and vacant lots,

emphasizing food production and an ethic of collaboration, collective welfare, and national morale.

During World War I, rhetoric again personified vacant lots as “idle” or “slacker” land (Figure 5.2). The National War Garden Institute referred to vacant lots as “slacker lands, as useless as the human loafer” (Pack, 1919, 10). This narrative is similar to that of Vacant Lot Cultivation Associations in the previous century, which equated “idle land” with unemployment. Yet, it is evident that people also understood vacant lots as potential garden sites simply because there was often no other option for a place to garden in the city. In a New York Botanical Garden report about urban gardening, Parsons (1917, 10) describes that “for the flat-dweller the problem of a city farm is difficult.” He gives the example of a New York City librarian who is “seeking to organize the people in her neighborhood who live in apartments and endeavor to get the use of the vacant lots in the vicinity for city garden purposes” (Parsons, 1917, 10).

Figure 5.2: Image from Charles Lathrop Pack's *War Garden Victorious* (Philadelphia: Lippincott company 1919, p. 155).

Some gardening land was made available in parks, on school grounds, and company and railroad lands, neighborhood clubs and volunteers were encouraged to identify and establish gardens in back yards and vacant lots that required less centralized control (Conolly, 1918; U.S. Dept. of Agriculture, 1918). An issue of the magazine *The American City* presents vacant-lot gardening as the most effective way to address the war-related food shortage: “This peculiar situation can be met more effectively by vacant lot gardening--and by home gardening--than in any other way” (Stoddard, 1917, 472). Through these calls for decentralized gardening, and without the need to manage land,

seeds, and other garden materials, wartime garden advocates focused on motivating Americans to seize any available space.

During World War II—after two decades and the interlude of Depression gardens--vacant lots remained on people's minds but were downplayed for a number of reasons. Gardening was still paired with notions of food production and national morale; what differed was that the strong tones of work ethic and idleness were replaced with notions of gardening as a health and leisure activity (e.g. Moersch, 1944). Mobilizing idle land was not as urgent as in previous periods of garden advocacy, and more care was given to finding the appropriate site and level of work so that the experience would be enjoyable. I thus find gardening documents that, although strongly calling for all Americans to create victory gardens, caution about their viability in cities:

> Large-town and city dwellers generally are in no position to undertake gardening successfully. Those living in outlying or suburban areas and having large sunny lots, away from interfering buildings, structures, trees, and industrial smoke or gaseous wastes, have a better chance of growing successful gardens than large-town or city dwellers…If a person insists upon making a garden under such adverse conditions, for exercise or pleasure, he should realize the odds against profitable yields (Boswell, 1942, 3).

In addition to these material difficulties to food production, the Greater New York Victory Garden Council (GNYVGC) also reflects this pessimistic view of vacant lots in light of social barriers. Mayor LaGuardia offered few legal protections for Victory Gardens, and so the GNYVGC advises "Victory Gardening on vacant land should not be attempted unless it can be effectively protected by the community itself or is in a community where such damage is unlikely" (New York State College of Agriculture, 1943, 4). In sum, attitudes toward vacant lots ranged from opportunistic use of land during crises to the grudging acceptance of the physical and political realities of securing

productive urban garden space; in any case, gardening outside of one's private property never registers as anything more than a temporary activity.

1970s to present: Community gardeners setting the tone

From the 1970s onward, community gardeners and garden interest groups became key figures in community garden discourse. They talked about how community gardens are integral parts of their lives, but characterized vacant lots as the locations for such activities. By the 1970s, the nation faced a very different social and economic picture than in previous decades. Political movements were often grassroots-oriented; community garden advocates included environmental groups, education groups, and non-profit organizations, for instance.[18] Gardeners' voices began to be heard, unlike in previous periods. For example, in a publication about community gardening there are statements like, "gardening is a pure joy during good times and an absolute necessity during bad times" (Young, 1973, 4). This simple claim marked a change to garden discourse; urban gardening is not *just* something to be done during emergencies. As a proponent remarked, "urban agriculture has finally come into its own… [but] like many other currently popular responses to this decade of crises, urban agriculture is really a very old idea masquerading as a novelty. Food production has long been a traditional part of the activities of city dwellers" (Friend, 1975, n.p.). Recognizing the multiple uses of community gardening, gardeners portrayed it as both a routine and an emergency activity (Figures 5.3 and 5.4).

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[18] Garden advocacy organizations established during this time include P-Patch (1973), Green Guerillas (1973), Boston Urban Gardeners (1977), and the American Community Gardening Association (1978) (Lawson, 2005).

Figure 5.3: Self-portrait of a group of members at the end of a work day at Cook Organic Garden Club, September 2013. There was no sense of emergency or remediation in our work, just a normal part of sustaining the site we all cared for. Photo by Luke Drake.

Figure 5.4: At a community garden in Morristown, New Jersey a small shelter holds coolers that gardeners use to deposit surplus vegetables that will go to a food pantry. Amid the routine integral nature of community gardeners' work, there is still a sense of using the space to do some good for others. Photo by Luke Drake.

The combination of the gardeners' voices and the tumultuous context—defined in the block quote below—in which these voices became heard on a wide scale likely set the tone for the community garden discourse of the 1980s and 1990s. Through magazines, and eventually the Internet, gardeners in cities across the U.S. began to state their talk about social and environmental concerns and situating community gardens as a way to address them. The emergence of this new community garden discourse—that of garden activists—did indeed result from a specific urban experience, as described in the first issue of the *Journal of Community Gardening*:

> Many of us began to do this sort of work because we lived in urban neighborhoods caught in a cycle of disinvestment, arson, and demolition; because we could see the possibilities for a new, productive kind of urban space; or because we knew people who wanted to grow food but had no access to land…Hundreds of garden organizations sprouted up in the mid-1970s, in

> response to rising food prices, the flow of people born in agrarian societies into the country's cities, the end of free-form 1960s activities, the end of the Vietnam War, the demolition of entire urban neighborhoods at the end of a cycle begun with the suburban exodus in the 1950s, the energy crisis, and who knows what else?" (Kahn, 1982).

Seemingly, out of an immense array of devastating social, political, and economic changes there were many people that saw a dire need for community gardens—not just for food, but to reclaim and remake urban space.

Members of the urban agriculture movement of the 1970s used vacant land as the reference point for discussions of gardening: "the backbone of the typical urban agriculture system is the vacant lot garden" (Smith, 1977, 5_ENREF_276). Moreover, the meaning of vacancy changed from earlier in the 20th century—not just unused land, but land that had been abandoned. As municipalities began rent-a-lot programs that garden activists could take advantage of (Lawson and Miller, 2013), there seemed to be a recognition that community gardens become a possibility when the state and capital had found no other use for a piece of land. This logic, for instance, is evident in the following statements: "Vacant lots are everywhere, in every city and every town. Much of this vacant land is created by the economic and tax realities of a neighborhood. Some vacant land is created by geography. Many lots are available for use as gardens" (Jobb, 1979, 68).

These experiences shaped what it meant to be a community gardener, the ways that community gardeners encouraged and recruited volunteers, and how they lobbied public and private actors for resources. The next stage in the development of this understanding was the recognition of the need to sustain garden access. After the flurry of

gardening advocacy by activists in the 1970s, by the early 1980s gardeners voiced concerns about the place of community gardens in the city:

> Many community gardens began as an interim use for vacant land or as experimental projects with short-lived funding…Community gardens are now a vital part of hundreds of North American communities. Yet, more often than not, those who decide how to use the land in our cities rarely take community gardens into account. They remain invisible to planners, architects, politicians, and policy makers. The end result is that community gardens are treated like carpets that can be rolled up and moved elsewhere at will, or simply eliminated as insignificant to a community's well-being" (Gonsalves, 1982, 111).

While activists recognized the results of their efforts had become a "vital part" of cities, the underlying identity of vacancy lingered and continued to mark those spaces as still awaiting other uses.

As community garden activists came to realize that policymakers, not just residents, must be persuaded of the merits of community gardening, advocacy remained focused on gardening as a means to an end. Repurposing vacant land through community gardens to address broader concerns became a common way for garden activists to promote their efforts, just as state- and charity-led advocacy during previous periods. Among themselves, gardeners appreciated their activities as an end in itself; discussions continued to be framed, however, as if there were a continual need to justify the existence of community gardens. By the mid-80s, for example, articles appeared in the *Journal of Community Gardening* on horticultural therapy—"the manipulation of plants not as an end in itself, but rather as a means of achieving specific benefits for people" (Lewis, 1985, 31) as well as food security. "Two gardeners feed forty people," written in the 1980s is strikingly similar in tone to the promises of food production in WWI-era pamphlets (Adams, 1985).

By the 1990s, community gardeners developed agendas for addressing food access, job training, and the environment. The Community Food Security Coalition emerged from an annual meeting of the ACGA in 1994 (Fisher, 1996). The ideals that had previously been voiced by charity groups and relief agencies in the early 1900s were then modified by garden groups: "community gardening and greening groups are broadening their focus to address the emerging issue of food security" (Cook, 1997, 75). Toward the close of the 20th Century, community gardeners had come full circle, incorporating economic justifications for gardening similar to those used by the state decades earlier—"it is important to look at land not only as additional passive open space, but as a place where one can create employment, training, and economic opportunities for local residents" (Riddell, 1998, 65). Environmental concerns are evident in the 1991 renaming of the *Journal of Community Gardening* to *Community Greening Review*.

Community gardeners recognized the integral role of these spaces in cities, and yet they still justified them in ways that portrayed community gardens as a means to an end. Despite the multiple purposes and outcomes that gardeners made visible when they lobbied for space and resources, there remained a recognition that, "in general, people don't recognize that using city land for a garden is a legitimate use of so-called valuable property" (Breslav, 1992, 114). Indeed, in the 25th anniversary edition of the *Community Greening Review* in 2005, the first section is titled "What Good are Gardens?"

In the era of online media, community gardeners increasingly voice their opinions and experiences. By writing blog posts and reports, and contributing to news articles available online, local outlets receive broad scale readership. And yet, community

gardeners send mixed and contradictory messages. On the one hand there are exceptions to the dominant narrative of community gardening as a temporary practice. Community gardeners write about the long-term benefits of community gardening—"this is more than a hobby. It's an attitude, a way of life" (American Community Gardening Association, 2007). They were talking about gardens as permanent sites; some even attained permanence to this day and have evolved into local institutions of their own, like Seattle's P-Patch program. This discourse has, in turn, seemingly affected non-gardening stakeholders to a small degree. Many U.S. cities have proposed zoning for community garden space, although the legislation passed has so far favored commercial urban agriculture instead of community-managed projects (Goldstein et al., 2011; Mees and Stone, 2012). The magazine *Sustainable Chicago* reported on a citywide program to make vacant lots available for urban farming, stating "that land's not vacant, it's fallow," showing one way that gardeners have rethought the meanings of vacancy (Baker, 2013). Rather than struggling to secure borrowed land, whether public or private, some communities benefit from community open space land trusts that hold properties and provide insurance, such as Chicago's NeighborSpace, an innovative program that engages key public land owners in the process of securing community garden sites. These examples show how people are beginning to think that community garden resources should be made permanently available, rather than being driven by a short-term goals (Hou et al., 2009).

On the other hand, gardeners reproduce that dominant discourse by explaining why people would join a community garden and the purposes gardens serve. In previous periods of garden advocacy, outsiders, experts, or policymakers promoted these activities

in relation to the major crises or perceived problems of the time. In the current period, the same techniques are used—except that it is community gardeners who push the notion of gardening as a means to an end. Examples include gardeners writing about how community gardens "transform food deserts into oases" (Sher, 2010), and "tackle modern problems" such as pollution, reduce landfill waste through composting, help to "bridge the hunger gap," and address the obesity epidemic (Ross, 2013). One community gardener, interviewed by the *Denver Post* about why community gardens have increased in recent years, explained that "when times are tough—like the mortgage crisis, the financial crisis and the energy crisis—people tend to think a little bit more about covering their bases and being self-sufficient where they can" (Clotfelder et al., 2008).

The contradiction of means to ends *and* end in itself

There is a long history of understanding community gardening as a temporary practice. For much of community gardening history, institutions controlled the discourse and could easily frame and reframe gardens as a temporary means to an end. From the 1970s onward, gardeners' voices entered the discourse by way of magazine articles, but they still focused on convincing non-gardeners why gardening was a worthwhile activity. There was the opportunity for gardeners to speak an alternative discourse—one where community gardens can be an integral part of the city—but still they relied on age-old institutional discourses to advocate for space. Since then, these alternative discourses have continued to be marginalized by dominant representations of the city as inherently and uniformly capitalist. Gardeners themselves see their activities as addressing emergencies such as unemployment or food insecurity, even as they want them to be a long-term part of the city.

This examination reveals how a taken-for-granted assumption that links community gardens and vacant land came to be so prevalent. This assumption continues to underpin many people's thoughts about gardening and vacant lots, particularly those organizations that are not made up of community gardeners. Yet, as gardeners have become key actors in community garden discourse in recent decades they continue to justify gardening relative to crises even while recognizing gardening's importance in day-to-day life; they continue to reproduce the dominant narrative even as they offer alternative discourses.

Perhaps it is a contradiction and not a tension between means and ends. The crux of this contradiction seems to be that for community gardeners, their activities are both a means to an end and an end in itself. There are multiple positive outcomes of community gardens, and they do serve as ways to address temporary crises. This does not mean that community garden resources should only ever be made temporarily available, however, because gardeners can often come to see these spaces as integral parts of their lives. As such, gardens can also be ends in themselves. Even though community gardens require continuous labor in order to thrive, and as such their longevity is never guaranteed, the resources to engage in community gardening should be made permanently available.. This shift in thinking could open up possibilities for a garden to be just as appropriate as other new land uses, such as housing, parks, or even parking lots.

This analysis extends from community gardens to a variety of other diverse urban economies, because it is not simply a matter of providing legal protections in the form of zoning, but also one of recognizing how the "informal" uses of "vacant" land can be more than one-off projects. Turning to Lefebvre (1991), it is important to understand the

production of space through the interrelationships between representations of space, the meanings people attribute to space, and spatial practice (the physical movements and practices that take place in and through space). I focus here on two kinds of representations—not only those of space (community gardens) but also spatial practice (community gardening). They are consequential in shaping how people see community gardens in relation to broader urban spatial processes. It is clear that institutional discourses have been powerful in shaping policies affecting community gardens and portraying them as temporary (Schmelzkopf, 2002; Moore, 2006; Irazábal and Punja, 2009); yet, as Eizenberg (2012) has shown, gardeners produce their own representations of garden space and practice as meaningful, normal parts of their lives.

This analysis of broader advocacy efforts, however, shows that community gardeners are also complicit in representing their work as subordinate to the capitalist economy. It might be the case that community gardeners are caught between those two competing discourses, but without a vocabulary to rethink community gardens as economic in their own right, they are limited to talking about them in ways that subordinate community gardening to capitalism. That is, the limits to community garden permanence are not inherent to the activity itself but stem from the lack of a coherent framework to see them as integral parts of the city. Following Gabriel (2011), the marginalization of non-capitalist urban space depends on first eliding the idea that non-capitalist space can exist as anything more than an anomaly. Those discourses have become so powerful that even community gardeners experiencing the rewards of their efforts have trouble thinking about them outside of that dominant frame.

Working out this paradox is, then, a challenge for community gardeners and the many other producers of diverse urban economies. The use of the term "vacant land" to refer to the surface on which a diversity of informal, often unsanctioned, but meaningful and productive activities take place has its own discursive power. It is a representation that puts any practices and meanings associated with those spaces into an a priori subordinate position to capitalism. Discourses of diverse economic space are more easily obscured when the actors producing such alternatives also reproduce, in other ways, the dominant narrative.

Conclusions

This chapter used a genealogy and discourse analysis method to explain how various types of community garden efforts spread throughout the U.S. at different time periods, the context from which these discourses emerged, and their positioning relative to urban economies. Through letter-writing campaigns between philanthropic organizations and local governments in various cities, vacant-lot cultivation associations formed in the late 1800s. Federal efforts to control the food supply and maintain social order during wars allowed these practices to expand through decidedly top-down planning. Urban agriculture during the Great Depression is a prime example of this process; sites were managed and subjectivities were formed through the dissemination of rigid policies. By the time grassroots voices joined advocacy discourse in the late 20th century, the historical legacy of those previous advocacy efforts had reinforced normative notions of urban space. Indeed, practitioners came to struggle, perhaps unknowingly, with the contradictory idea of urban agriculture as a meaningful but temporary activity in cities.

Even though Chapter 4 reveals the ubiquity of community gardening in cities (and increasingly, beyond cities into suburbs), and the literature shows continual support to *start* community gardens, this chapter illustrates the power of discourse to marginalize the actually existing economies of community gardening. This genealogy first highlights the historical trajectory of garden advocacy that has produced knowledge of community gardens as temporary uses of temporarily-available spaces. Second, it shows that advocates, and some gardeners themselves, reproduce that dominant narrative.

In response to this dissertation's research questions, this chapter makes it clear that there are often internal dynamics that foreground economic production and diversity, and external dynamics that speak of temporariness, anomaly, and emergency. Whereas the former may help community gardeners as they go about their daily work, the latter create challenges for long-term success. It is relatively easy to find support to start community gardens, as shown in chapter four—funding, land, materials, and volunteers. That ease in securing resources

is explained partially by the way that community gardens are so easily understood as short-term solutions to larger economic troubles that manifest locally. In that sense, it is not controversial to provide resources for a non-capitalist site because there is no expectation for it to permanently replace a "normal" land use. This chapter and the previous chapter show, however, that sustaining them is a major challenge. How might this be made possible? One approach is to insert vocabulary and ways of thinking that support diverse economies rather than hide them (Gibson-Graham, 1996); another way is to better understand those internal and external dynamics that affect the ongoing operation and success of community gardens.

In the next chapter, I turn to those internal dynamics. How is surplus labor appropriated and distributed in a community garden? How do people balance the work needed for individual plots with the work needed to maintain the shared space of the garden site? Is there an ethic of community well-being at work there? By approaching the community garden not as a unified entity but as something constituted through internal networking, I examine flows of resources within the garden site in order to answer those questions.

Chapter Six: Community and economy meet in the garden: Rethinking community gardens as sites of production

From the broad strokes provided in the past two chapters, this study now turns to in-depth analysis of individual sites to better understand the internal dynamics of community gardens. As survey respondents in Chapter 4 made clear, the work needed to start and sustain community gardens is a crucial theme—gardeners' labor is fundamental to the success of a given site. In my own experience as a community gardener, which contributes to this chapter, I saw what this means: we mulched and mowed footpaths between garden plots, repaired water lines, and distributed surplus food to other people. Put simply, a community garden is not an aggregation of personal garden spaces but a site of cooperative enterprise. In the community gardens literature, however, this work is rarely discussed as economically vibrant or contributing to a diverse economy through ethical economic decisions. Indeed, Chapter 5 illustrated there is a dominant narrative that marginalizes any economic dynamism of community gardens. Certainly, gardens serve an economic function in that discourse, but it is merely to ameliorate land and people during times of crisis, becoming obsolete once conditions return to "normal." Yet my evidence so far suggests that there might be a complex process of economic decision-making that has gone largely unnoticed in the literature.

This chapter examines the internal dynamics of community gardens, which help us to better understand the ways that community gardens might connect with one another and to other alternative enterprises. How do gardeners work to start and sustain a community garden? Presumably, working in a community garden involves more than

growing vegetables for one's own consumption, but includes maintenance of the overall site as well as the organization of a group of gardeners.

Community gardens supposedly function through communal labor—but it is unknown what types of labor actually take place in community gardens. To what degree do gardeners work communally or take advantage of other gardeners' collective labor? Furthermore, in what ways might gardeners come to see themselves as economic agents with the ability to experiment with new economic processes? In what ways might concerns for community well-being become entwined with that economic action? This chapter addresses how community gardeners work and if they work more than just for themselves. In other words, "community" and "labor" are topics that I seek to explain in this chapter. What types of labor are found in community gardens, and how might ethics become entwined in the decisions around labor.

Class analysis from a diverse economies approach can help in this regard. More broadly, class has long been an important lens in economic geography, and it has conventionally focused on the exploitive relationships between workers and firm owners by examining the appropriation of surplus labor (Swyngedouw, 2006). For diverse economies researchers, class analysis reveals not only exploitation, however, but also how ethics and equity are inserted into economic decisions. Work in this vein has revealed that in alternative enterprises, people might start to see economic possibilities beyond capitalism, and how workers grow to see themselves not as subordinate to "the economy" but as part of a vibrant community economy, working towards fairness (St. Martin, 2007; Cornwell, 2012). Analysis from a diverse economies perspective also reveals economic politics in sites where it is unexpected, such as the household; it

ascribes economic agency to people otherwise elided by mainstream economic discourse, such as homemakers (Cameron, 2000; Pavlovskaya, 2004).

Work among diverse economies researchers, however, has not taken an explicitly network approach to internal dynamics as in relational economic geography. As REG studies have shown, network analyses should not just focus on the connections between firms, but how firms themselves are constituted through networks (Ettlinger, 2003; Yeung, 2005a). Such work shows that enterprises are not monolithic entities; furthermore, the way that workers share and distribute resources internally can deeply affect external relations.

In this chapter, I use a diverse economies class analysis that is inflected with a network approach. Through participant-observation and interviews, I explore the ways that community gardeners interact with one another to start and sustain their gardens and how surplus is appropriated and distributed internally. This involves addressing the free rider problem in common property management. It is a source of tension among community gardeners, but through the experience of community gardening individuals can become subjects that prioritize fairness and equity. Furthermore, I examine whether surplus is distributed beyond the garden sites, and what effects that might have on the internal structure of a garden. I find that community gardens are all sites of production in a diverse economy, but that concerns for community well-being push some gardens into a community economy. These actions are evident in the ways that the spatial and social organization of a garden are shaped by gardeners' desires to distribute surplus food beyond the garden and its members. This finding comes in contrast to most studies,

which grounds them in community development and minimizes their place in the economy.

Anti-essentialist class analysis of surplus flows in community gardens

This chapter departs from traditional Marxist class analysis for an anti-essentialist reading of class (see also Chapter 2). Drawing on the diverse economies approach, this means rethinking class as a process rather than seeing it as a social hierarchy (Gibson-Graham et al., 2000). Particularly, it is a process of producing, appropriating, and distributing surplus labor. As I outlined in Chapter 2, in traditional class analysis this process occurs between two classes in the capitalist mode of production—workers and capitalists. Traditional class analysis as applied to community gardens examines how gardeners struggle against landowners, local government, and other external structures. Such analysis has revealed how external entities try to shift the burden of food security and green space production from the state onto residents (Rosol, 2012), or how the local state and real estate developers, operating under the logic of capital accumulation, try to take land away from gardeners (Schmelzkopf, 2002; Lawson, 2007a). In such cases, community gardeners work to improve vacant properties, and once these locations are revitalized gardeners' surplus labor is appropriated by those external entities. This type of class analysis reveals how gardeners as a class are exploited, but it tells us very little about the economic decision-making that takes place within the garden.

Since this chapter focuses on the internal dynamics of economic decision-making in community gardens, and not on the struggles of community gardeners against external dominating structures, I draw on an alternative reading of class. The concept of surplus labor as elaborated in a diverse economies approach is an effective lens in this regard.

Rooted in Marx's labor theory of value, surplus labor is "the extra labor the direct producer performs beyond the necessary labor for one's own means of living" (Resnick and Wolff, 1987, 115). In conventional Marxian analysis, this involves the employee producing surplus that the owners then use to turn a profit. In this dissertation, however, the notion of surplus labor is shaped by post-structuralism. In diverse economies theory, the focus turns to the flow of surplus labor through class *processes* rather than to and from class *positions*. This is shown in the work of Resnick and Wolff (1987), who see class as an adjective and not a noun.

The diverse economies approach, following poststructural feminist theory on identity, allows individuals to thus participate in multiple class processes. A male head-of-household, for example, might participate in a capitalist class process as a worker in a capitalist firm, while also participating in a feudal class process at home when his wife cooks and cleans for him at home (Gibson-Graham, 1996). If the same person also works at a cooperative on the weekends, then he may also participate in a communal class process. These identities are revealed by tracing the moments of production, appropriation, and distribution of surplus labor.

The implication of this type of class analysis is that surplus labor can be appropriated and distributed by individuals other than capitalists. While the example of the worker in a capitalist class process has his surplus labor appropriated by the owners of the firm he works for, he also appropriates his wife's surplus labor at home and distributes it to himself by eating the food she prepares. As a worker in a cooperative, he and his fellow workers appropriate their surplus labor communally and decide how and where to distribute it. By reading for economic difference in terms of class, diverse

economies researchers hope to enact a politics where equitable class processes can be developed.

The example of household labor helps situate community gardens in this framework. Households have conventionally been viewed as a site of women's oppression due to the unequal distribution of work within the home that women take on (McDowell, 1993a). Cameron (2000), however, working from the lens of class process, rethinks households not as a place where women's lives are centered around exploitation, but as sites where women and men can participate in a variety of class processes. Using the class analysis of diverse economies, she finds the home to be a place where women can appropriate their own surplus labor as well as that of their partners, and they can make decisions about how to distribute their surplus labor. Such analysis is "a political strategy to represent the domesticated wife and mother as independent and authoritative, rather than dependent and victimized" (Cameron, 2000, 65). The economic identities found, however, are never completely fixed but always in a state of becoming. By shifting our understanding of the household to a site of production with its own dynamism, it shows that the feminine domestic subject can be an agent of change who transforms domestic class processes. The work of Cameron (2000), as well as Pavlovskaya (2004), reveals the home as a place where political action is possible and where a complex set of economic relationships are always in flux. In short, this approach to class analysis of the household rethinks the home as a site of economy with its own dynamics.

In terms of the internal dynamics of community gardens, anti-essentialist class analysis problematizes the notion of "community" and "labor." I use surplus labor as an entry point to what kind of economic decisions take place within community gardens. By using the term surplus labor in the language of diverse economies, I open up community gardeners' work to inquiry. Alternatively, I could use terms such as "cooperative labor" or "communal labor" in this chapter, but that approach would define in advance the type of labor that might be found. My point in this chapter is that I am not trying to define community gardening as a particular form of labor, but to investigate what kinds of labor might be found in community gardens.

My lens of surplus labor, then, also helps to explain how ethical commitments arise and are maintained in community gardens, and how these sites might also be part of a community economy. If, as (Gibson-Graham, 2006, 92) argues, communities are built through the production of surplus, "then the decision-making processes that configure surplus appropriation and distribution will play an important role in determining their ethical character." For community gardens, this means we must understand how surplus labor affects the vitality of the garden site as well as how gardeners decide to distribute their surplus.

The difference between necessary and surplus labor is important in this regard. In conventional analyses of firms, these categories are defined in terms of what is socially necessary to reproduce the worker, and the extra that is appropriated by the owners (Resnick and Wolff, 1987). In this study of community gardens, I follow the approach of Cameron (2000), who sees any production in the household that is consumed by others as an appropriation of surplus. Put simply, the appropriation by others is an indication of

surplus. In terms of the household, when the work of some people, such as cleaning and cooking, is appropriated by others then it must be surplus. To be clear, appropriation is not necessarily exploitation in this anti-essentialist reading of class—surplus can be appropriated by the worker who produced it or as a collective, which are both non-exploitative (Gibson-Graham, 1996). In the community garden, one might produce surplus by maintaining shared footpaths, collecting membership dues, repairing water lines, and of course distributing extra food one produces to other people. In the garden, like the household, when one produces more than they might consume themselves, it is surplus. Thus, the key question is not the difference between necessary and surplus labor but where that surplus goes and under what conditions. In sum, I use the anti-essentialist reading of surplus labor as an entry point to examine the internal dynamics of community gardens and to make visible the economic decisions that guide community gardeners.

Bridging "community" and "economy"

As previously reviewed, the literature on community gardens recognizes a variety of purposes and outcomes; however, the economy enters those stories as a dominating force that dictates why community gardens emerge and not as an object that can be changed by community gardens. That is, the gardens are portrayed as reactionary, and while there might be a range of benefits to them, those outcomes are small and focused on the neighborhood scale. In part, this is due to the way that the economy has become fixed in contemporary society as exclusively capitalist (Gibson-Graham, 1996). As I showed in Chapter 5, this assumption manifests in community gardening through the reproduction of discourses that obscure the dynamism of garden sites.

It is not surprising given those representations that community gardens are often seen as more about "community" while commercial urban farming is seen as "economic," as I reviewed in Chapter 2. Whereas the former is limited by scale, the latter is scalable, having potential to make a real difference for the economy and food production (Rowe, 2014). Planners' efforts to identify and remediate food deserts through attracting vendors, for example, is complemented by work to introduce zoning regulations that include agriculture (Walker et al., 2010; Goldstein et al., 2011). From a conventional economic development perspective, then, community gardens ameliorate economically disadvantaged neighborhoods but are piecemeal.

Even among some community garden supporters, there is a binary division between community and economy. As urban policymakers, for example in New York City, draw their attention to commercial food production, community garden activists fear that such policies will potentially drive community gardeners away from their activist roots as they align with market-based policies (Mees and Stone, 2012). That is to say, if cities support commercial farming over community gardening, then gardeners might willfully commoditize their sites and leave behind social justice. The issue in that situation is that for many people involved in community gardening, their work is primarily about *community* and not *economy*.

Indeed, in scholarly literature the two concepts are often seen as incompatible (see Chapter 2). It is well known that while both commercial urban agriculture and community gardening entail food production, community gardens are sites where food is entwined with a host of other meanings and concerns, as argued in Chapter 4 (see also Armstrong, 2000; Baker, 2004; Donati et al., 2010). Just a few examples show that social

and environmental meanings attributed to these sites come to the foreground in many studies (Saldivar-Tanaka and Krasny, 2004; Alaimo et al., 2010; Firth et al., 2011; Nettle, 2014). Still, urban agriculture is represented as "serious" food production, even though community gardens are perhaps the largest producers of urban food in the U.S. (Vitiello et al., 2010). Given the long history of community gardening, its ubiquitous geography revealed in Chapter 4, and the incipient nature of urban agriculture policies, this should be unsurprising (Lawson, 2005; Goldstein et al., 2011). Nonetheless, community gardens are given short shrift relative to the economy and economic development compared to urban agriculture. It seems that for both policymakers and some garden activists, community and economy do not mix.

Since those concerns about social relationships and environmental stewardship are so important, an examination of community gardens as economic entities must do so in a way that does not circumscribe either community or economy. Here, contributions by economic geographers informed by the cultural turn, and more specifically from a diverse economies approach, are able to help. Such work, for instance, has shown that even in a view of a singularly capitalist economy, community is entwined with economic decision-making (Callon, 1998; Barnes, 2001; Amin and Thrift, 2002). Increasingly, community well-being is seen as an important contributor to economic success (Amin and Roberts, 2008).

Additionally, economic theory has expanded beyond the capitalist firm to consider production across "diverse" or "whole" economies (Gibson-Graham, 1996; Williams and Nadin, 2010b). For researchers working from a diverse economies approach, concern for community well-being does, in fact, play an important role in

production, and can even lead to class processes that are not exploitive (St. Martin, 2007; Hill, 2011). Furthermore, in this perspective "community" does not refer to an a priori entity but rather the process of working with one another to produce and distribute goods and services, and the ethical decisions needed to equitably do so (Gibson-Graham, 2006). These insights point to an approach in economic geography where community is not subordinate to economy.

Methods

This chapter uses participant-observation in a community garden over two years, and 47 semi-structured interviews across New Jersey, to examine the internal dynamics of community gardening. I collected data about the various tasks needed to start and sustain garden and how gardeners appropriate and distribute the surplus to do this work. From 2012 to 2014, I was a member of the Cook Organic Garden Club (COGC); during the second year I served as the president while also maintaining my garden plot. COGC has 78 garden plots and is located on the Rutgers University campus in New Brunswick. Although it began as a student club in the early 1980s and has had to move locations twice since then, it has gradually evolved into what is in practice a community garden just like the others studied in this dissertation. Most of the gardeners are affiliated with the university in some way, but non-affiliated people are welcome to join. Graduate students make up 41% of the gardeners, 25% are faculty members, university staff employees are 13%, while undergraduates make up 8%. 14% of the gardeners are not affiliated with the university. Below, I introduce some of the work involved with starting community gardens but focus mainly on the process of managing and sustaining them.

Surplus from the start: Securing land, water, and other resources to start community gardens

From my anti-essentialist reading of class, starting a community garden involves a variety of work tasks in which garden organizers appropriate their own surplus and distribute it for future use by themselves and other gardeners. The relationship between the role of garden organizer and gardener is important, and a short note on governance will help outline the following sections. There are a variety of governance structures in New Jersey's community gardens, but they all involve a subset of gardeners and sometimes people who are not gardeners performing administrative tasks. There are distinct roles—garden organizer and garden leader—where the former entails starting a community garden and the latter is someone who leads its ongoing work. Individuals often assume both roles, however, starting gardens and continuing their leadership roles long after the gardens are up and running. Whereas the garden leader—the topic of the next section—is a role that often rotates among various gardeners, the garden organizer is a role assumed by one or more people with the knowledge that their work only ends once the garden is successfully started.

The flows of surplus are easy to trace in the start-up of a garden, and the ethics of appropriation and distribution are rather straightforward. This is mostly due to the way that garden organizers willingly make a large upfront investment of time, physical labor, and often money; even if they are new to community gardening, it does not take long to realize the amount of work involved. The first step in starting a community garden is often building a group of community gardeners. Through postings on virtual and physical message boards, announcements at meetings, and simple door-to-door canvassing, people might start "from scratch" when one or two people start out with an interest and spread

the word to others. The method of first forming a group of gardeners is not universally practiced, however; institutions will often build a community garden and then expect people to join, as I have previously shown (Drake, 2014). Those types of gardens rarely gain traction in a community, though, so I focus here on those gardens that are sustained long after being started.

Organizers also obtain resources like land, water, and building materials, which often means navigating local regulations and building relationships with institutions beyond the garden. This is often a difficult process, but organizers tend to recognize all of their work as ultimately benefiting future community gardeners—they appropriate their own surplus and distribute it to future gardeners. A few examples show the details of this work and the ways that the internal function of a garden is constituted through connections beyond the garden. Finding land is easier, for instance, when a group of gardeners forms through a preexisting relationship to a piece of land. In New Brunswick, one garden was started when church members already working at their church's food pantry wanted to extend the fresh produce available, and another garden started when farmer's market customers asked management for a place to grow produce in addition to buying it. In those cases, land was already available because of those existing activities. Garden organizers must also provide water access. Getting water to the garden site is often a difficult task. Since vacant, undeveloped, or abandoned lots are often used for community gardens, there might not even be public water supply at the site. Even if it is there, water meters and spigots may have been removed. Additional resources—like raised beds, compost, soil, mulch, and tools—must likewise be obtained, assembled and distributed by garden organizers and members. Depending on organizers' health and

wellness, they then often perform the physical labor of site construction that future generations of gardeners will ultimately use (Figure 6.1).

Finding and securing resources to start community gardens entails significant distribution of surplus by a few people that benefits many more. This work to establish a garden site also brings garden organizers into contact with other people and organizations within and across communities. The practices of reaching out to potential gardeners and building relationships to secure resources trace connections that mark an ontology of a community garden extending beyond the site itself. The appropriation and distribution of surplus at this stage, however, is not very contentious even though it takes a lot of effort. Garden organizers presumably understand they are distributing their surplus to a larger group of people, many of whom they may not even yet know. There is little doubt, though, that they appropriate their own surplus. Next, I turn to the work of sustaining gardens, where the flows of surplus become more contentious and ambiguous.

Figure 6.1. A community garden organizer and leader (left) lays out lumber for the construction of raised beds at her garden site in New Brunswick, April 2013. Photo by Luke Drake.

Sustaining community gardens: Shared work, "free riders," and external distribution

The work to sustain a community garden is where notions of fairness and equity, as viewed through the lens of surplus labor, become unsettled. Once a community garden is established, it only exists as long as people continue to work to sustain it. Physical maintenance of the site is an important task, and one that matters for gardeners as well as landowners, funders, and other external stakeholders. Even if land, water, and supplies are in place, there still must be a group of people that are interested in growing their own crops and contributing to the shared tasks of site maintenance. Shared work refers to maintenance of shared space and property—gardeners must mow grass, pull weeds,

manage compost, remove trash, and repair tools, power equipment, fencing, water supplies, for example. This can be a significant task: at Cook Organic Garden Club (COGC), for example, in addition to the 30,000 square feet of cultivated garden space, there is nearly 20,000 additional square feet of grass paths and picnic, compost, and manure areas that must be maintained (Figure 6.2).

For a community garden to thrive, people must care about the broader community garden space beyond their personal plot and the other people involved in it. Horticulturally, it matters because by maintaining common areas, gardeners control weeds, pests, and diseases that can affect their own and each other's crops. Aesthetically, it results in a space that gardeners take pride in and enjoy being in. External parties might see neglect, conversely, as a reason to remove support for the community garden, something I reported on in previous research (Drake, 2014). Indeed a long-time member of my community garden, COGC, frequently encouraged members to participate in group work days so that the university would not find a reason to kick us out of the site. From day to day, community gardeners must decide how to distribute surplus labor to maintain the site as a cultivable space; over the long term, this surplus sustains the garden as an organization and its relationships with external entities. It thus takes a community of gardeners to produce a community garden. In this sense, "community" is the process of working with one another and deciding how to appropriate and distribute surplus labor (Gibson-Graham, 2006).

Figure 6.2. Cook Organic Garden Club. Shared space includes: pathways between and around the plots; and around toolsheds, tables, and compost areas around the perimeter. (Source: Google Earth).

Surplus labor and the free rider problem

A problem arises, however, because although community gardens thrive through outlays of surplus, some gardeners may still get to use the site for personal ends even without contributing surplus. This was made explicitly clear by survey respondents in Chapter 4. Such issues correspond with the "free rider problem" that is often discussed in common property theory. Deriving from the "tragedy of the commons" thesis, conventional free rider analysis would position the gardener as a self-interested individual willing to benefit at the expense of the other gardeners (Hardin, 1968). That individual gets a clean and well-kept garden site, and access to resources such as land, water, tools, and compost, by working less (or not at all) than other gardeners to sustain that shared property. Such analysis suggests a particular understanding of economy where distributing surplus labor is difficult to imagine.

Research on common property management has refuted many aspects of Hardin's argument, however, and has shown that overconsumption and exploitation are not inevitable in the commons (Berkes et al., 1989; Ostrom, 1990). Even though community gardens have been studied as sites of collective action (Schmelzkopf, 1995; Eizenberg, 2013), few studies, if any, have examined them as common property facing the issues of community-based management. Given the ubiquity of community gardening across North America (see Chapter 4), such sites are likely to provide a range of people first-hand experience in commons management. Indeed, Elinor Ostrom, who won the Nobel Prize for her work on common property, uses community gardens as a hypothetical example to explain how the free rider problem is overcome in common property (Korten, 2010). The following paragraphs provide empirical examples of how community gardeners appropriate and distribute surplus labor and address free riders.

Techniques of accounting for surplus labor

Given the range of tasks needed to sustain shared property, gardeners must decide what they will do, and how much labor they will contribute. One way gardeners do so is to use what I call "pull" strategies encourage participation through education and social events; this fosters an environment in which people like to distribute their surplus to the garden by making it a place people want to visit regularly. A variety of techniques are used in this regard. Community gardens across the state host orientations each spring to explain responsibilities to new members and update returning members. Gardeners foster camaraderie by hosting workshops, screening films, and hosting speakers that bring people together for fun and learning. Other events found across the state include harvest potlucks, which often occur throughout the year so that gardeners can prepare seasonal

dishes to share. At these social events, gardeners gather to share food they grew in their plots. At "seed swaps," gardeners share surplus seeds they have saved.

Even if social events boost morale, gardeners still need to provide direction about shared work tasks. Thus, there are also "push" strategies to appropriate surplus labor. Community gardens require participation in a variety of ways, typically by asking members to contribute to shared work at various intervals; for instance, weekly, monthly, or seasonally. Weekly tasks are minor, like picking up trash and organizing toolsheds. Monthly and seasonal work includes larger tasks like mowing, mulching paths, or maintaining infrastructure such as fencing or water taps (Figure 6.3). Some gardens ask members to contribute a certain number of what they call "volunteer labor" hours over the course of a season. In these cases, there are no official group work days and gardeners contribute on their own or informally with other people. Some gardens account for volunteer hours by asking members to record their time in a ledger located in the garden shed, but others acknowledge that such a system leads to conservative estimates because not all gardeners take time to record their entries. A variation of this system is to specify volunteer hours over each month of the gardening season rather than a lump sum. In Hopatcong, New Jersey, many members of a new community garden fulfilled their yearly volunteer requirements in the first month because of the large amount of work needed to build the site. The management committee then proposed a monthly volunteering requirement to ensure that site maintenance was performed on a regular basis throughout the season. Regardless of which shared work model is in place, the point here is that even in supposedly decentralized and grassroots community gardens, there are structured collective work practices that enable the garden site to be reproduced.

Figure 6.3. Maintaining the community garden at a group work day. Photo by Luke Drake.

From utility-maximizing individual to becoming a subject of community economy

Gardeners continuously navigate the work needed to maintain their own plots and the surplus needed to sustain the garden; they also navigate those push and pull aspects of being a member. This means that their production and distribution of surplus labor is always in flux. As a result, gardeners are astute at perceiving their own surplus labor in relation to others contributions—or lack thereof. Across survey, interview, and participant observation methods, the issue of sustained participation comes up. While some members love being at the garden and going above and beyond their personal garden space responsibilities, others tend to their own space to the neglect of broader group work. This is most visible, for instance, at work days when some members are cleaning common areas while others simultaneously tend to their own personal plants.

One garden leader explained that tension builds when some gardeners do not contribute to group work, and as a result benefit unfairly at the expense of other doing the work:

> [Some people said] 'we don't mind doing the work, but what about all these other people who aren't doing anything and have the same benefits that we're getting?' I can tell you, from the experience, it really created more tension between people who are doing the extra work and felt like they were doing more. And they were really put out that other people didn't have the same degree of commitment that they had… [but] there's always those degrees of people [that contribute more]" (Interview 20)

These varied participation levels are due to many factors, but seem in large part to be a measure of how gardeners incorporate the community garden as a routine part of their everyday lives. Still, gardeners explain it in different ways. On the one hand, a person might be highly committed to the community garden from the beginning:

> You have to be doing it for eating, not for fun. If you're doing it for fun, when it gets hard then you'll stop. I don't buy any vegetables during the [growing] season. If you do it right, you can even feed two families with one plot. We give food away, [but] you have to be serious about it." (Interview 30)

Whether or not gardeners have—or make—time is also important: "the people that garden a lot [participate in] the workdays. Those that don't, don't have time" (Interview 35).

Even if gardeners start out as free riders exploiting the surplus labor of others, they can grow to engage in ethical exchanges of surplus and thereby developing a sense of fairness and equity. As a long-term member of COGC put it, "Gradually you become more interested. Some people drop off. But some find it beneficial" (Interview 35). The person referenced above who faced a great deal of tension within her garden discussed a similar change:

> I think it takes time before people begin to develop a sense of commitment to the garden. You can almost see the moment at which people at the garden begin to make a connection and take responsibility for what was going on. At the end of

> the second year I was like, 'I'm giving this up, nobody's getting along.' And then you just begin to see little traces of how they're helping one another. So over this 6 month period is when I finally feel that people are gaining ownership. [At a recent garden meeting I thought], 'they've just taken over the meeting, what do I do here?' Not in a bad way, in a good way…So it was like, ok this is really nice now. Each of them now is taking responsibility. If you have 10 people like that, and each of them has three more people they get involved, then it helps. (Interview 20)

Beyond taking care of necessary maintenance, gardeners that do develop a strong sense of community want to instill the same work ethic in others. As one gardener put it, what really matters is contributing to the broader garden: "It could be as simple as cleaning, we don't really care...We just want them to give something back to the garden. And you can see, it's pretty successful in terms of people giving back, not 100% successful, but you know it's a group, a group dynamic, what are you gonna do? " (Interview 1).

These longitudinal observations by gardeners reflect how individuals not only become community gardeners but also subjects in a community economy. Many gardeners do start out as the self-interested utility-maximizing subject of the free rider problem—and indeed, some remain that way—but there can be a shift to a subject that recognizes the equity involved in distributing surplus labor to others. This shift is not easy or ever complete but is ongoing and emergent. The techniques discussed above such as time accounting and rotations of duties help this to happen.

Gardeners can become surplus-distributing subjects in unexpected ways, as in the following example during my term as a community garden president. Although we held official group work days one day each month during the growing season, a network of gardeners went above and beyond this official group work. In the plot next to mine, I often saw new people working in it every few weeks. During my first year in the garden, I was not sure who the assigned gardener was for the plot; however, the next year as

president I was the one who collected contracts, dues, and assigned plots. Over time, it became clear that there were internal networks of gardeners who cared for each other's plots when one person was away. Together, they each had their own plots but also spent as much time working in their friends' plots. The amount of food produced through this method was impressive—in spite of certain urban agriculturalist representations of community gardens as avocational, these gardeners did not purchase vegetables during the growing season, they produced food well into December, and produced enough to share among themselves, their extended families, and other gardeners such as myself who were not in their informal network. "At least half [of what I grow] is shared with people," one gardener told me (interview 35). These practices emerged alongside—or perhaps, in spite of—the push and pull strategies we used to encourage shared labor.

Engaging the community beyond the garden through surplus: Distributing food to other places and people

Surplus labor manifests in a variety of forms, whether it is pulling weeds or in processing paperwork; it also manifests in surplus food that gardeners must decide how to distribute. Even if there is tension among gardeners about how to maintain the garden, they nonetheless work to connect to distribute food to places and people beyond the garden. They do not appropriate surplus solely out of necessity to sustain a garden site; they put internal mechanisms in place so that the garden serves and connects with broader clientele. There are many ways that community gardeners plan and carry out this food distribution, and so those external dynamics are shaped by gardeners' internal work. Actions to cultivate, gather, and distribute food add to the internal dynamics by showing that gardeners do not just work to sustain their garden for their own use of it. Internally,

gardeners work to integrate their space within the broader neighborhood fabric. In this way, the lens of surplus labor provides a way to examine how community ethics are woven into garden management.

Several different food distribution models illustrate how community gardens intentionally engage in establishing local connections. At one end of the spectrum, the entire garden site can be dedicated to produce food for external distribution—gardeners do not take home any of the food. Church and community members work at the community garden at Christ Church in New Brunswick, New Jersey; the on-site food pantry receives everything produced there. Camden Children's Garden, a citywide network of community gardens, operates some of their sites in a similar manner. At these locations, gardeners contribute all of their labor to producing food for external distribution.

It is more common for community gardeners to donate and distribute a portion of their produce. Appearing in many forms, gardens may set up dedicated beds for external distribution or ask gardeners to simply donate a portion of their food. Gardens in areas with pedestrian traffic can set up tables on the sidewalk for passersby to simply take food (Figure 6.4). In other cases, community gardens build donation bins that are placed near garden entrances (Figure 6.5). As people leave the garden, any surplus food is dropped into the box; a designated person—again, contributing additional surplus labor—then transports food to agreed-upon clients such as senior centers or food pantries. Whereas some gardens exclusively produce all food for external distributions, as in the paragraph above, staff from service organizations can also use garden plots for their own consumption. Likewise, gardeners can set up plots within the garden that they exclusively

use to distribute food to external clients. Gardeners can also invite in non-members to participate and harvest by deliberately choosing not to put a fence around the garden. Members of a church in Atlantic City built a community garden but wanted it to be truly open for anyone to use (Figure 6.6). Parishioners wanted there to be no fence; through their own community outreach, residents and some of the homeless population in one part of the city help maintain the garden.

Figure 6.4. Distributing food to passersby at a community garden in Camden. Photo by Luke Drake.

Figure 6.5. Food collection bin at a community garden for external distribution, Morristown. Photo by Luke Drake.

Figure 6.6. A community gardener who wants to distribute food by allowing non-gardeners in—the decision to go without a fence in Atlantic City. Photo by Luke Drake.

The amount of food distributed through community gardens is limited, to a certain extent, by the growing conditions, site size, and horticultural knowledge of the participants. A much bigger impact, however, is made by how much the gardeners are interested in producing food for donation. As such, people can be motivated to produce much more than their own personal consumption needs. In a community garden where the leaders ask everyone to donate 10% of their produce, "In 2011 we donated around 4000 pounds of food grown on approximately 5000 square feet" (Survey respondent 236). Elsewhere, simply setting up coolers for gardeners to donate out of their own volition yielded over a ton of produce over four years that was prepared daily at a local senior center. Some gardens look for a variety of destinations for their food—"We deliver

it to the senior centers, where they have exercise classes. Food pantries, churches. You know, in the height of it in the summer we must have been taking, how many pounds, and 200 pounds a week. It's amazing what a little bed can give you." (Interview 36). In addition to deliveries of food, Maplewood Community Garden has installed garden beds at locations around the community. Expanding outside the bounds of the garden site, members have built raised beds at the local senior center to respond to requests for garden space.

Lastly, community gardens take on more formal aspects of social enterprise when they sell food and agricultural products. The Jardín de Esperanza (Garden of Hope) in New Brunswick grows marigolds for annual Day of the Dead, a Mexican holiday; garden members have sold flowers directly to local bodegas and through a farmers market. All proceeds are brought back into the community garden. Among a set of community gardens in Elizabeth and Linden, plans are in place to allocate food equally between gardeners, community donation, and sales. Such sales are made possible not only through connections to farmers markets, but also through commercial urban agriculture firms that not only grow their own food but purchase other locally-grown crops for sale to restaurants.

Conclusions

Surplus enables the community garden to reproduce itself, even if that surplus is produced and distributed with some occasional difficulty. This does not mean, however, that gardeners use all of their surplus time and energy just maintaining the garden; they also distribute food to the community beyond the garden. In my interviews, nobody stated that they joined their community garden in order to give away their food to other

people. These practices instead emerged through the process of becoming a sharing subject. Whereas surplus labor produces and sustains community garden sites themselves, it also links them to the communities beyond the garden. Food distribution is perhaps the primary way that community gardens connect with broader urban food systems. Although informal exchange between gardeners, and between gardeners and their extended family and friends, is likely to be the most frequently pursued food distribution method, organized efforts to distribute are becoming increasingly common, as shown here (see also Vitiello et al., 2010). Just as the internal dynamics of community gardens can be complex, so can the food distribution methods.

Following the surplus labor that community gardeners produce and distribute helps reveal gardens as economically legible. Gardeners perform labor necessary for their own enjoyment of the garden—most often, this means tending to one's own plants grown for personal or household consumption. Surplus labor, however, sustains the community garden as a site and as a group of people. If one simply tends to one's own plot within the garden, one appropriates the surplus labor of everyone else who is working to gain and secure access to land and resources. Such appropriation is generally frowned upon by other gardeners, and as a result they come up with ways to encourage communal class processes. This analysis reveals that community gardens can be sites where individuals learn to imagine and enact postcapitalist economic processes, even if they had no intention of doing so when they started.

This approach not only provides a way to see community gardens as sites of production, it also gives equal standing to concerns for community well-being. Cultivation practices and even the spatial design of community gardens are deeply shaped

by the ways that community gardeners want to engage the communities beyond the garden. As such, the internal dynamics are not simply about maintaining a garden for its own members' enjoyment. The internal function of these sites is tied to both gardeners' use and the external distribution of surplus food. In that sense, we can see all community gardens as part of a diverse economy, but for them to become sites of community economy there are additional dynamics to be worked out. How will gardeners decide what is surplus food, how will internal organization of the garden facilitate surplus production, and how will that food be distributed and to whom? Community gardens are sites at the intersection of multiple, sometimes conflicting, processes—where concerns for community affect decisions about production, distribution, and consumption, and where individuals must decide how to balance personal and collective.

In contrast to previous analyses that define community gardens as primarily a place of *community* (Nettle, 2014; Rowe, 2014), this chapter suggests that they are also sites of *economy*—community is what gardeners then have to work out in order to sustain the site and connect to places beyond the garden. This is not to say that concerns for community are ultimately determined by the economic functions of the garden. Instead, the economic actions, and the internal socio-spatial design[19] to facilitate those actions, are part and parcel of gardeners' desires to distribute surplus in ethical ways. This does not mean that all gardeners and gardens cooperate in such ways or are free of conflicts. It is

[19] When community gardeners decide to create a plot within the garden site that will be solely dedicated for food donation to external clients, the socio-spatial dynamic of the garden changes. Whereas most community gardens in my research are initially formed as a grid of individual plots, the creation of communally-managed plots transforms part of the space further. Nevertheless, it should not be assumed that such plots are inherently governed communally.

an ongoing process of learning how to balance necessary and surplus labor. In short, community and economy are interwoven through community gardening.

This chapter has examined the internal dynamics of community gardens, but in doing so it is clear that connections beyond the garden are equally important to understand. To start a community garden, people must acquire resources. To sustain them, they must continue to get those resources as well as navigate decision-making processes around labor and surplus. Internal dynamics are affected by those external relationships, and food distribution beyond the garden is affected by the internal spatial and social organization of the garden. Whereas this chapter has mainly focused on gardeners' actions within the garden, next I turn more attention to those external dynamics. How do gardens connect with each other, with partner organizations, and other stakeholders in order to get those resources? How are those relationships structured, and how might community gardens gain access to existing networks in which they can access and distribute resources? These questions are the focus of the next chapter.

Chapter Seven: Know-who, know-how, and know-where: Building and sustaining local networks

The previous chapter's look at the internal dynamics of community gardens showed that networking within a garden site can be deeply shaped by gardeners' efforts to engage places beyond the site. Even as I focused on the internal functions of community gardens, the social and spatial dynamics of those sites can be oriented to, and driven by, distribution of surplus beyond the garden. The findings suggest that internal and external dynamics are co-constitutive. This chapter goes beyond the individual community garden to examine the dynamics between gardens, and between community gardens and other actors that support them such as non-profit organizations. I use a network approach to examine local clusters of community gardens—what lessons about community gardening might be learned when explicitly going beyond the garden site?

The chapter emphasizes knowledge as a key relational process, a theme that is inspired by recent economic geography research and the empirical insights that arose from my participant-observation in New Brunswick's community gardening movement. In their recent book, Bathelt and Glückler (2011) push relational economic geography (REG) research to more fully consider how knowledge shapes the spatial distribution of economic action. This is partly a response to shifts in capitalist economies toward service-based industries like consulting, but it is also a recognition of the complexity of forms that knowledge takes across economies. Particularly, it is a conceptual shift to a relational view of knowledge. Geographers have long understood the importance of knowledge to the spatial patterns of the economy; for example, of research laboratories in

close spatial proximity drive innovation more rapidly than laboratories that are more isolated (Polanyi, 1967; Asheim and Gertler, 2006). Neoclassical economic analyses, however, often view knowledge as a production input (Grant, 1996). REG, in contrast, conceives of knowledge as an effect, rather than precondition, of interactions in space (Bathelt and Glückler, 2011, chapter four). In an REG approach, knowledge is contingent on local and extra-local social relations. The collective result of planned and unplanned interactions is the knowledge that drives innovation and other economic processes.

Relational views of knowledge contribute to notions of "know-how" and "know-who." Know-how, or technical knowledge, is particularly important in industrial clusters. Technological spillovers result from rivalries between firms, who try to stay ahead of competitors' products, as well as from workers that socialize and move between firms (Howells, 2002). For service industries like consulting, however, innovation is not technological but is produced through everyday work with clients (Bathelt and Glückler, 2011). Hence, "know-who" helps us understand that knowledge of social networks, and knowledge facilitated through social networks, is as important to economic action as is technical knowledge (Malmberg, 1997). Being able to tap into clients' networks and share sales leads with collaborators and competitors is vital to firm growth.

Economic geographers have explored the tacitness of these types of knowledge, and why certain knowledge is difficult to codify into written form and transfer over long distances. While explicit knowledge is that which is easily written down—handbooks, technical reports, etc.—and transferred over long distances, tacit knowledge is more nuanced and shared via face-to-face interaction (Gertler, 2003). Because of the nature of tacit knowledge, there seem to be certain advantages to clustering and in being able to

connect with others outside of one's local milieu. While technical skills and personal contacts are most deeply learned tacitly, and thus locally, there is a demonstrated need to acquire external knowledge; otherwise, innovation stagnates. This combination of "local buzz" and "global pipelines" goes far in explaining how local clusters prosper while at the same time building external connections (Bathelt et al., 2004).

These processes feed into this study's research question about the dynamics between community gardens. What do knowledge flows look like in community gardening, and how might they help us understand local networking in community economies theory? This chapter examines "know-how" and "know-who"—which are topics of interest to REG scholars Bathelt and Glückler (2011)—in terms of community gardening. I also advance a third concept, "know-where." Returning briefly to my discussion of methods in Chapter 3, I argued that REG concepts cannot be easily transposed onto a community economies approach but should be modified and supplemented by the theoretical framework offered by the latter. One such area that REG has not addressed is the place-based knowledge that may drive much of community economy actions. Since community, and not only workers', well-being takes precedence in a community economy, it may be the case that intimate knowledge of place that guides economic decision-making.

This chapter assesses these three facets of knowledge through research in the New Jersey cities of New Brunswick, Trenton, Elizabeth, Linden, and Union, as well as research on a "sister garden" relationship between East Brunswick, New Jersey and Melbourne, Australia. A large part of the empirical analysis draws on the case of the New Brunswick Community Garden Coalition, and so a short introduction to the Coalition will

help connect my theoretical context to the empirical materials that follow. The Coalition is a network of community gardens and people supporting community gardening in New Brunswick that aims to build community garden capacity citywide by facilitating a range of knowledge flows. The coalition originated when people involved in various community gardens began meeting with each other to share ideas, dating back to 2009. Seeking to improve community gardening across the city, three people officially founded the coalition in 2011. Two were residents who were both community gardeners and worked in non-profit and education fields that supported community gardening, and the third was a cooperative extension staff member who worked in a range of urban gardening programs.

At first, they thought of their idea to bring community gardens together into a coalition as an experiment; not knowing if it would lead anywhere, they simply wanted to see if coordination and communication between gardens could improve food production. Over just a few short years, the coalition developed into a thriving community organization. Around 10 – 15 people regularly participated as coalition members and were either members of community gardens or supported them in some way. According to the coalition's member packet—the way that residents now register for any of the city's community gardens—the overall goal is "to grow a community gardening movement in New Brunswick so that everyone in our community can benefit from growing their own vegetables, herbs, and fruit. We believe this will make our families healthier, ourselves happier, and our neighborhoods more beautiful and safe." This concern for community and household well-being is seen as happening through the production and distribution of food. The coalition further defines five priority areas in

support of that goal: 1) grow a gardening movement; 2) promote sustainable and safe gardening practices; 3) increase local access to cultural herbs, vegetables, and fruit; 4) promote seed-saving and heirloom varietals; and 5) bring people together to share knowledge and practices. I began participant-observation with the Coalition in September 2012 as a representative of the Cook Organic Garden Club (see Chapter 6), which ultimately led to the research that I present here.

This chapter's empirical analysis is divided into four sections. First, I discuss a participatory GIS (PGIS) project I conducted with the Coalition. This was an action research project to map the relationships between gardens, garden members, and other actors within the city. The project's scope exceeded the concerns of this chapter, so the discussion here focuses on how the PGIS both revealed existing knowledge—and produced new knowledge—of place. The second section elaborates how know-where, know-how, and know-who contribute to "community brain trusts," a term I borrow from one of my interviewees. I draw on further interviews in New Brunswick as well as those in Trenton to explore the dynamics of local knowledge circulation and how external knowledge is integrated into local practice. These interactions among community gardeners and supporting actors are complex, and so in the third section I trace the outlines of a community brain trust based in Elizabeth, New Jersey in a less detailed way in order to summarize its characteristics. The fourth section examines one of the ways knowledge is shared, and its impacts, when community gardens lack local clusters to support their actions. I do this through a brief case of a virtual network that links a community garden in East Brunswick, New Jersey to another in a suburb of Melbourne, Australia.

Together, this chapter elaborates on the ways that community gardening is shaped by the flow of knowledge within localities and by the integration of external knowledge. Community garden organizers build know-where through their commitment to community and through everyday actions to build trust and reciprocity. This knowledge of place leads to know-who, which grants people access to resources for building and sustaining community gardens. This combination of know-where and know-who facilitates the transfer of technical knowledge both within the local network and from beyond it. Know-how and know-who are the connections beyond the local network—the "global pipelines," to use REG terminology, which are more clearly shown in the sister gardens example (Bathelt et al., 2004). External knowledge, however, must be integrated into the form and function of the local network if it is to be used—it cannot be easily transposed from the outside. Taken together, the community brain trust is the effect of the circulation of these three types of knowledge, which are simultaneously rooted in place and shared across distances; virtual networks attempt to supplement these flows or substitute for them when local clusters are lacking.

Mapping the New Brunswick Community Garden Coalition

The chapter's empirical analysis begins with a participatory GIS project that examines the relationships between gardens, garden members, and other actors within the city. This was an action research project, and the design, methods, and findings exceed the scope of this dissertation because the project aligned with a broader set of Coalition goals. The part of the project that illustrates relational knowledge processes is discussed in this chapter; further details on the genesis of the project and how it was carried out are provided in Appendix C. We mapped the locations of gardeners' homes and of

organizations that support community gardening, discussed our findings in a focus group, and developed ways to visualize the results in a way that retained gardeners' privacy. In this chapter, the results "on-screen" are not centrally important—rather, the contribution comes from what was revealed through the focus group to discuss the GIS results. In particular, our focus group demonstrates that knowledge was produced in part through our efforts. The PGIS is important to understanding knowledge of place by showing that it is simultaneously place-based and relational. It is formed through long-term embeddedness but also through interactions with other people in that place.

To briefly introduce the project, it was an effort by the Coalition to gain better "know-where." The Coalition held workshops that brought together community gardeners from across the city to learn topics such as seed-saving, organic horticulture and pest control (Figure 7.1); we also held events such as an annual citywide garden orientation and seed swap to promote a sense of a gardening movement (Figure 7.2). Other than the garden sites' locations (Figure 7.3), however, we did not know much about the spatial distribution of the other aspects of community gardening—such as where the food went after it left the gardens and whether certain neighborhoods had more community gardeners than others.

Figure 7.1. 2013 summer gardening workshop hosted by the New Brunswick Community Garden Coalition. Photo by Luke Drake.

Figure 7.2. New Brunswick residents sign up for community garden plots at the 2013 New Brunswick Community Garden Coalition spring gardener orientation. Photo by Luke Drake.

A lot of discussion went into deciding the location for an event, which was usually at one of the city's community gardens but also at community centers and churches. For us, the location was always a point of deliberation because we were concerned with how many gardeners would find it easy to get there. As shown in figure 7.3, community gardens are distributed unevenly across New Brunswick. Getting across town might be easy for healthy people or those with transportation access, but not for elderly or immobile gardeners. Other than simply assuming that gardeners lived near their gardens, however, we did not know where they actually lived. If gardeners lived near each other, then some of that knowledge could possibly be shared with others who

did not attend the workshops. Questions emerged that revolved around the spatial distribution of gardeners: where should we conduct workshops so that as many people as possible can attend? Did members of the same garden—or members of different gardens—live near each other?

We started with the goal of mapping the locations of gardeners' homes but soon recognized that a number of other assets could be mapped as well. Gardeners' homes represented the inflows of labor and outflows of food, certainly there are other assets that contribute to our efforts. Funding, labor, and construction and gardening materials came from various sources, for example. By mapping these location, we would know much more about the Coalition than if we were to just have a map of garden locations. Our goal with the PGIS project then became two-part: first, spend the summer collecting data on gardeners' locations; and second, use a focus group to analyze those data. In other words, the Coalition only knew one aspect of the community gardening movement—the garden locations—but could plan more comprehensive work by knowing which neighborhoods were and were not affected by community gardening.

We developed a hybrid GIS made of three components: collecting data through paper maps, converting them into digital format through desktop GIS software, and analyzing data through a web based system. Such work follows work to reveal commons and collective management in places where "community" did not seem to exist (St. Martin and Hall-Arber, 2008; St. Martin, 2009). I created a large poster-sized map of New Brunswick, which had the locations of the city's community gardens (Figure 7.4). Each garden was color-coded, and at events we would simply ask people to take a sticker with the color of their community garden and put it over their house. The stickers were

intentionally large enough so that they did not reveal the exact house but a half-block radius, in order to maintain some privacy. If they also took their food to other locations—for instance, the homes of friends and family—they placed a separately-colored sticker on those places. Appendix C contains more details on this study design.

Figure 7.3. Sites represented in the New Brunswick Community Garden Coalition in 2013. City boundary is marked with dark grey line. Map by author.

Figure 7.4. Paper map used for data collection.

Participatory GIS analysis builds knowledge of place—"know-where"

Analysis of gardener distribution and asset mapping during a focus group in October 2013 revealed an important part of community garden production—knowledge of place. With the coalition members that helped design the project, we first examined the distribution of each community garden's members and the distribution of all of the gardeners that participated, through maps that I made with kernel density surfaces for each garden and for the whole study. I used kernel density surfaces to obscure exact locations of gardeners' homes while still showing distribution patterns. Figure 7.5 shows the distribution of the homes of 47 gardeners who participated, along with points showing garden locations. Figures 7.6 to 7.10 show the distribution of five community gardens' members who participated. We were struck by the way that gardeners were unevenly distributed relative to their gardens. Whereas some gardens members' were tightly

clustered near the garden, others were distributed across the city and even into neighboring towns. There were clusters of gardeners nowhere near gardens, and empty space near gardens.

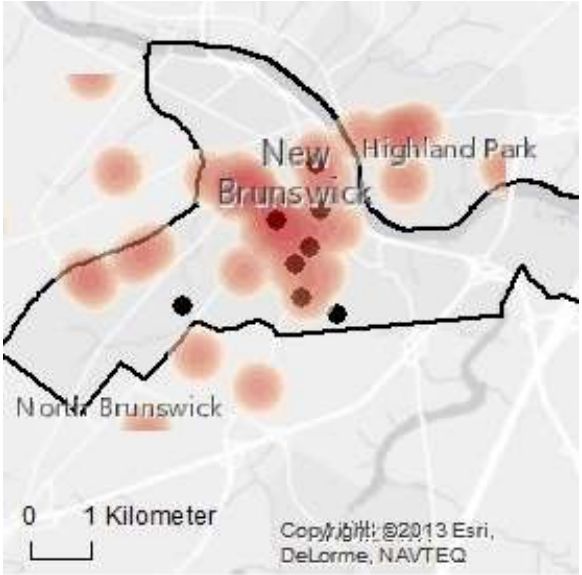

Figure 7.5. Distribution of gardener's homes who participated in the study. Garden sites are points and New Brunswick boundary is indicated by black line.
Darker shading represents concentrations of gardeners' homes.

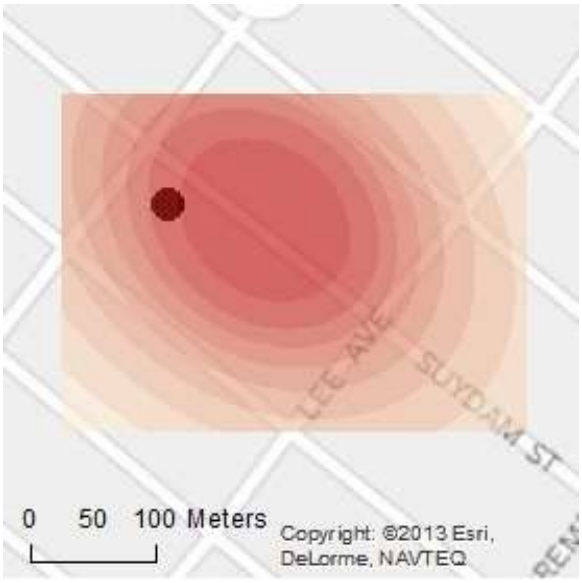

Figure 7.6. Garden A member distribution

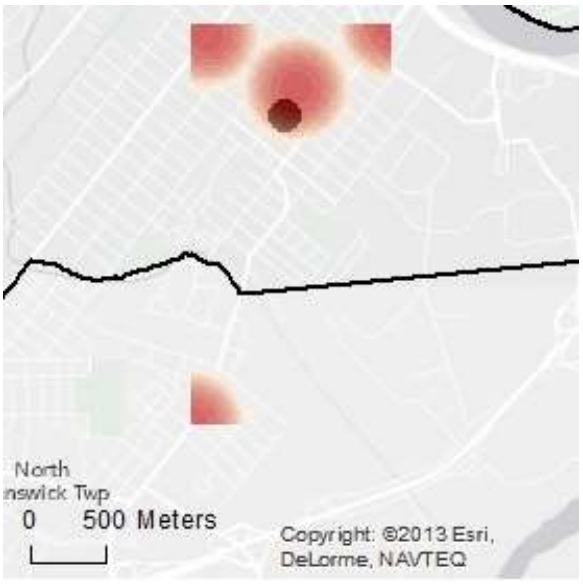

Figure 7.8. Garden B member distribution

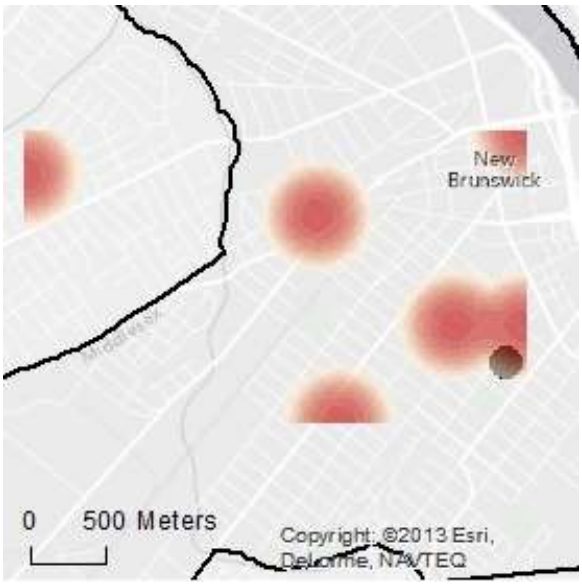

Figure 7.7. Garden C member distribution

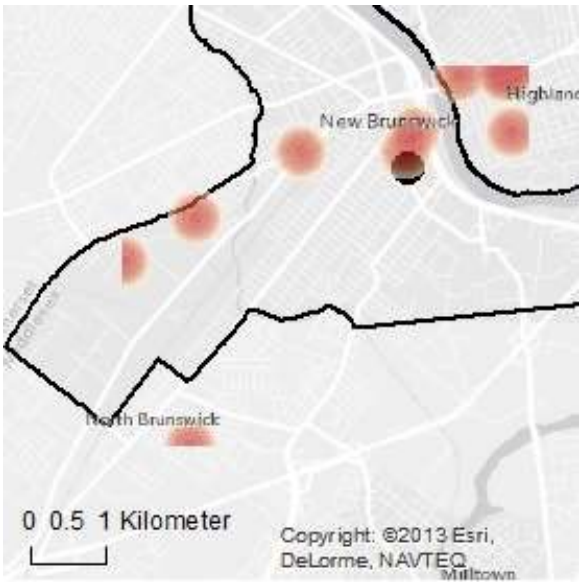

Figure 7.9. Garden D member distribution

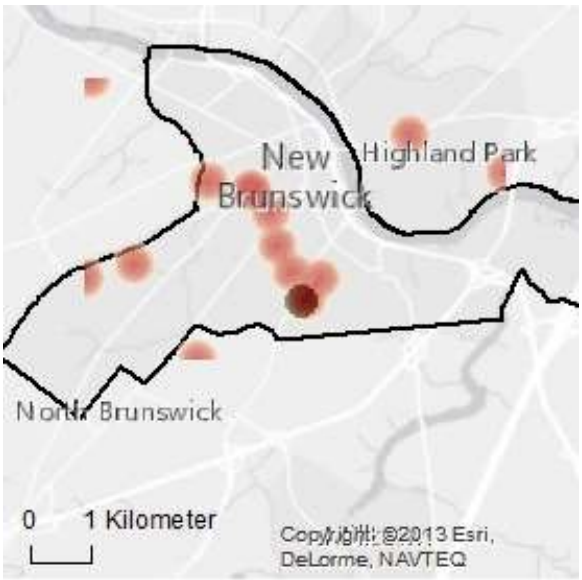

Figure 7.10. Garden E member distribution

Initially, some of the coalition members did not trust the data—even though we collected it ourselves—because they did not expect their fellow gardeners to live in the places indicated on the map. We thus spent a lot of time discussing any points that fell in unexpected locations. I did not expect this to be an issue, but it revealed how much the Coalition was concerned with knowing how the labor involved with community gardening is spatially distributed. Coalition members were deeply involved in improving production and distribution of food at their community gardens, and these findings challenged what they knew about their gardens and the city's gardening activity more broadly. Knowledge of place, or knowing where certain assets are located, seemed to be important to effective function of the coalition.

Even though the point data were anonymous, verification of the points meant figuring out who supposedly lived there. We went into excruciating detail, as shown in the following conversation about which gardener might have placed a certain point on the map:

Luke Drake: Somebody from the seed saving workshop put [the] sticker on here.

Gardener 1: [That woman] was at the workshop.

Gardener 2: She lives there?

LD: She [submitted data] already.

G2: She lives next to the church?

G1: Yeah, she lives right at the corner. That white house at the corner of [these two streets].

G2: Right!

G1: I'm not sure who else lives there, though.

> G2: That's what I was thinking, because that's the only house there is. There isn't anything else there, so they have to live in the same house. Which is why they would overlap.
>
> …
>
> G2: But there's only one address. So they're either at the same address, because I don't think they live in the church [that is at the intersection].
>
> G1: I don't think they gave addresses, they just put the spot on the map. And then in GIS you can just pick the spot.
>
> G2: And that's the only residence on that block. Between [these two streets].
>
> LD: There's one or two. But [she] lives on Raritan, and when I was looking at the stickers... [it looks more like 2nd]
>
> G2: Oh she lives in [this person]'s house!
>
> …
>
> G2: I'm just thinking of the people that live in that house, because I do know the people that own the house. And I know the people that lived in the apartment. So that was...trying to think of who, that I haven't seen at the garden.

Interestingly, the person making this last statement was not trying to figure out which gardener might live in this particular location, but was trying to figure out which specific house the point referred to so that she could think through the people she knew that lived there, and by deduction identify the gardener. This reasoning is only possible, of course, with a deep knowledge of place that comes through long-term residence and getting to know people in the area. Indeed, the coalition member I refer to here was not making judgments about her own community garden's data points, but another community garden's.

As we made sense of this distribution, we drew on our knowledge of New Brunswick to then explain why gardeners were located where they were. Particularly, it

became clear that the ways residents learned about the gardens may have played a role. One of the coalition members, who works for a community development organization that facilitates three community gardens in New Brunswick, found it especially helpful to compare the outreach methods she uses to advertise her gardens; that is, the mapping exercise provided a space for local knowledge to circulate:

> Gardener 2: It's really interesting to look at it and then compare it with how we do outreach for each of those gardens. For [garden A], it's mostly when people are walking down the street and they see it and then they call us based on, "I was walking down the street, and I live across the street..." versus [gardens B or C], it's because we tap into networks that we already have people coming from farther away. So it makes sense, it's just really interesting to look at how it correlates.
>
> Luke Drake: So the outreach methods might be one way that affects...So with [garden A] it's really just people walking by and they call you [with the phone number listed on a sign].
>
> Gardener 3: It's mostly people living across the street or down the street, so they're constantly seeing it and they go "why not?" Versus with [garden B], you already have an established community that then is transferred to the gardening community. Whereas I feel like [garden A] is—I feel like we created the community on that street, do you know what I'm saying?

This portion of the focus group analysis elaborates on themes evident in much participatory GIS research—the agency of maps in learning and communicating about the issues in a place, for instance. This was possible in part because of the way we mapped our community gardening efforts by gardeners' home locations in relation to their gardens.

We then discussed where future community gardens might be best located. To do this, though, we had to provide more context than what was provided in the base map, which was a default street map provided by ESRI. We started by explaining where certain social and physical features were located (such as neighborhoods and shopping areas). One example of this is in our discussion of neighborhoods where Rutgers

University students live; since the growing season is mostly during the summer when students are away, we wanted to know if there might be any non-student populations interested in community gardening. We discussed popular off-campus student housing areas because we did not have any gardeners shown there, and talked about whether many non-Rutgers people live there[20]:

> Luke Drake: I'm not sure if this is all college students here or if there are non-Rutgers people living there.
>
> Gardener 2: Very few actually. It's tended to be students. Most of the houses have been sold and are now...I know the people, I can probably name four people who live in that area *and* own houses there. And they've lived there 30 or 40 years.
>
> Gardener 3: There's [actually] a lot of families that live there. The house will be half college students, half everyday renters. So there are more families than you'd think. And pockets of homeowners. Obviously the closer you get to College Ave it's more students but then all on the other side of Easton, that's all...
>
> G2: Homeowners...
>
> G3: And when you get closer to Central. So once you cross Easton Avenue, then it becomes mixed student-family.

These discussions revolved around our attempt to figure out if certain areas would have people interested in community gardening and how easy it would be to get to existing garden sites from their homes. I posed a question to the group about the accessibility of certain neighborhoods to existing community gardens. One person, who runs a food pantry with a community garden on the site, replied that she has clients in a certain neighborhood that find it difficult to get to the food pantry because of limited

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[20] Although many Rutgers students are involved in community gardens, most are away during the summer, and as such we assumed that there would not be much interest in community gardening among residents of these areas.

transportation options. In this way, our discussion allowed group members to learn from each other and to envision opportunities and challenges in the city's community gardening movement.

In sum, our analysis of gardener geographies challenged our expectations about where gardeners lived, but importantly for this chapter it produced new knowledge about New Brunswick through the interactions between Coalition members. Getting together in the same room to discuss the spatial distribution of gardeners helped all of us realize how people become involved in community gardening, which in turn helped us understand the complexity of the ways in which community gardening is entwined in people's lives. This theme continued to become clear in the next part of the focus group, which was to map the locations of community groups, local government offices, and the private sector that supported the Coalition. This is covered in Appendix C. The mapping project exceeded the intentions of this dissertation, but in the process both revealed existing knowledge of place and produced new knowledge through the interactions between gardeners around a set of maps. The next step in this chapter, then, is to better understand how such "know-where" intersects with other forms of knowledge.

"Community brain trusts": Linking know-where, know-how, and know-who

How are networks of knowledge flows, which were revealed to a certain extent in the PGIS project, formed, and how do they work? In order to better understand how networks are built and how they succeed (or not), in this section I ground the analysis in the different types of knowledge that constitute community gardening networks. I

understand networks through the circulation of knowledge of place, knowledge of whom, and technical knowledge.

In particular, my focus on knowledge stems from one interviewee's use of the term "community brain trust" to explain how knowledge shapes community gardening in New Brunswick. I explain this term in more detail below, but in short it refers to a combination of knowledge of place, of people, and of technical skills. First, knowledge of place comes through a commitment to place: actors within a local environment interact with each other in day-to-day work to start, sustain, and engage community garden efforts. People's commitment to community development and cooperation leads to reciprocity in their actions. In doing so, they build relationships that help access resources to build and sustain community gardens. Commitment to place leads to know-where, which in turn opens up know-who. People found through know-who, in turn, help find and secure know-how, sometimes from outside the local milieu. Know-how, or technical knowledge, must be integrated into local networks so that it works in those local conditions, and so know-how also depends in part on knowledge of place.

The importance of knowledge as an entry point to understanding community garden networking is underscored by the term "community brain trust," which comes from one of the people I interviewed; she had worked in community food security efforts in New Brunswick for over 30 years.[21] When I asked the executive director of Elijah's Promise about networks and what it takes to do her organization's work in New

[21] Elijah's Promise is an anti-hunger non-profit in New Brunswick that operates a soup kitchen, community garden, culinary school, community-supported bakery, and a "pay what you can" cafe. The director worked for three decades in New Brunswick and built a series of relationships with a variety of actors and residents through everyday, long-term work.

Brunswick, she repeated "it's who you know." She went on to elaborate her concept of the "community brain trust" as an individual that can help you find the right people depending on which resources you are looking for—e.g. funding, building materials, volunteer labor. The dynamics she refers to constitute the collective efforts of people involved in New Brunswick's community gardening efforts:

> It's really in terms of networking and getting things done, it's often the same processes that apply to getting things done and building out a way a community responds to a problem or fills a need. It's oftentimes very different because it's about who you know. In other words, the person who is a local community brain trust in terms of knowledge of resources and processes and has that kind of institutional--community-institutional knowledge--gets together with the person in the community that knows everybody, that knows a lot of people. When you put those two things together, that's when the spark happens in *The Tipping Point* [by Malcolm Gladwell]. I think oftentimes, that's why things happen differently in different communities. In part because it's about that right recipe and formula of getting the right people together.

This "right recipe" that she describes is what I see as the confluence of different knowledges. One has to know who to go to for certain resources—for instance, building materials or volunteer labor—but one also has to know the place as well. To know the place means knowing the individual people, agencies, or organizations in a place that are both willing and able to help you secure those resources. Although she emphasizes "it's who you know," her comments also stress that you must also know what makes things "tick" in a certain place.

Building know-where through commitment to place

The first component of a community brain trust is knowledge of place, which comes through one's commitment to place. By working in the community and proving that you are not doing it just for personal gain, you gain access to those networks. In a place like New Brunswick, where a constant supply of volunteers and researchers from

Rutgers and Johnson & Johnson come and go, this dedication is important to those who are in it for the long-haul. As such, access to networks depends only in part on knowing who to go to for them—know-who. Knowing the right people is not enough, though; it takes time and dedication to place to gain access to those people. As the Elijah's Promise director said, "[P]art of networking is also learning how to work relationships for mutual benefit. Because if it's always a one-sided gig, those people say, 'see you' and they avoid you." Community gardeners and garden organizers in New Brunswick achieve this by building relationships with each other, with non-profits, and with individuals from institutions like Rutgers and Johnson & Johnson.

Long-term commitment builds trust, which is important in relational economic geography (Murphy, 2006), but it is a commitment to *community*, other than *profit*, that drives those processes in New Brunswick's community gardening network. Steve, one of the co-chairs of the coalition, explains how one develops this commitment to, and knowledge of, place. His story is especially informative because he had spent the past few years working in various organizations in New Brunswick, allowing him to carry forward those connections formed at each job. A New Brunswick resident, he initially worked as an AmeriCorps volunteer with Elijah's Promise before getting a job with Rutgers Cooperative Extension. In those positions, he established and managed two community gardens along with other community-based food programs. He emphasized first the importance of building relationships with others that might endure over time:

> The more that you can band together with people who are doing the same thing, the more effective you can be. I guess I just try to take what relationships from the Food Alliance and the Coalition that would be helpful, as far as having consistent meetings with people that are not a part of Rutgers. If I didn't have that, then I would be only working with Rutgers Gardens folks. *And I don't think I would be able to get as much done* [emphasis added].

Important for him was the frequency at which he met with and interacted with other people. This everyday work is one part of building community brain trusts. Second, this commitment to place is also a commitment to community:

> At the most basic level, [building and maintaining community gardens] happened because in the non-profit world, you're all working for the community. In the business world, you're not going to go talk to someone from your competitor, but in the non-profit world you're kind of working for the same [thing]—maybe you're working for a different mission or a way of doing things, but there's no competition. Maybe for grants, but that wasn't that big of a deal, at least here.

To summarize up to this point, knowledge of place is built through working *in* a place with a commitment to community rather than just individual gain.

Trust and reciprocity

If commitment to community builds trust, then everyday actions of reciprocity are the mechanisms that prove one's commitment. Steve goes on to explain that trust and reciprocity are even more important in community gardening than to conventional businesses:

> You're relying more on community relationships or partner agencies, which is a little trickier because they don't have to help you. If you're all in the same [conventional] business, there's an organizational chart, you're on the top and they have to do what you say. But [community gardening] is more like, you just have to like each other if you're going to work together, and you have to help each other out. Consistency is really important--to be around, and to build relationships with people. To help them out. It helps that we're in a line of work where if I[22] help another organization with something, I'm already helping myself in a way. Because we have the same vision, or overlapping vision. I don't think [community gardening] would be possible without working with or partnering with other people.

[22] The "I" refers to both the interviewee's role as a community garden organizer and as a resident.

In the community garden coalition, reciprocity often meant members taking on responsibilities for workshop planning and production—marketing the event, producing documents and workshop materials, translating materials into Spanish, soliciting food and financial donations, among others—so that the burden did not fall completely on just a few people. More broadly, it could simply mean going above and beyond one's offer of help on a particular project. This process of developing knowledge of place thus occurs through everyday actions based in concern for community, which in turn build trust.

Know-who: Trust and reciprocity provide access to social networks

Next, "know-who" is important because it allows community garden organizers and supporters to access resources available within New Brunswick and beyond. Returning to the example of Elijah's Promise, its executive director had built knowledge of place in New Brunswick for over thirty years and also used her knowledge of people to be successful. She was involved, among other things, in community gardens, a farmers market, a community-supported bakery, and the local food policy council the New Brunswick Community Food Alliance. For her, understanding the needs of the community was crucial "know-where;" she was able to work to address those needs through the addition of "know-who." She managed relationships with other local organizations as well as institutions with Rutgers University, Johnson & Johnson, and the City of New Brunswick (see also Chapter 8). She also points out that "know-who" is important because not only can your personal contacts help you, but their extended networks become an asset too:

> You can't do the work that I do without networking. You can't do community-based work that's helping people and trying to address community issues and concerns if you're not networking. You have to figure out who [can help you].

> Part of networking is understanding not only who somebody is and what they do, and where they work and where they're connected. It's also understanding in a broader way, who is their network…

What she points out is that actors in a community brain trust make an effort to follow each relation to other possible nodes that may be sources of knowledge, labor, and materials. It takes time, however, to build knowledge of place and knowledge of people. The Elijah's Promise director goes on to explain some of the details of this process with an example of a composting project she worked on when she sought assistance from Rutgers University:

> If I know that somebody at Rutgers could help with something but I don't go to the right person at Rutgers, I'm not gonna get results. Because Rutgers is a really good example of how systems operate. There's a lot of decentralized silos with things happening over there. I remember a while back, not too long ago, I asked [one professor] for something. He couldn't help us…We weren't getting anywhere with him, which is why we went to the county [government] finally…Again, you go to who you know to see if they're the right person. And if not, do they know who might be the right person, and you keep going until you get to where you need to get to…Eventually you know enough people and you have a good enough sense—instead of doing the runaround thing where you keep going to the wrong person and you're not getting anywhere, you kind of know where the best place is to start to have the shortest distance from point A to point B.

She points out how extended networks—not just the people you know, but the people your partners know—help improve efficiency. This process is illustrated by one of New Brunswick's churches, which built a community garden to supply fresh food for a food pantry located at the church. Gardeners at the site are typically parishioners, but anyone can become a gardener; however all of the food goes directly to the food pantry. When the food pantry's director told me about the project to start a garden at a coalition meeting, I reached out to an instructor in the Department of Landscape Architecture, who organized a group of students to assist in cutting the lumber and assembling raised beds at the garden. Other coalition members reached out to 4-H and an office at Rutgers that

coordinates student involvement. These connections to institutional actors in close proximity provided a labor source that quickly allowed us to build the community garden.

In sum, building a network of people that trust each other can lead to efficient procurement of labor and materials. One develops network connections through shared work, which leads to greater trust among broader actors who can then produce surplus labor for you. These relationships played key roles in securing materials and labor that constituted a range of diverse economic sites. The effects of these processes are not simply to attract resources from the outside, however. Community brain trusts can also leverage their capacity to expand operations beyond the locality. The executive director of Elijah's Promise, for example, found that over time she came to know which individuals, organizations, and offices could most efficiently assist her. By knowing her contacts' extended networks, she also realized that projects she started in her own service area could be expanded to other places. For instance, she told me about an idea to support a countywide community composting program:[23]

> What we're doing here in New Brunswick and learning can be passed on and shared with others in the area. Wouldn't it be nice one day to see the county composting--there's a big day the county does now a food collection day for hunger. Wouldn't' it be nice if there's a big compost day, and everybody's compost is being delivered to community gardens and residential garden pick up points all around the county and everybody can have free compost, and free this or free that. Or food recycling, or whatever the issues are. There's a ton of ways we can learn from each other. So where do we start with that?

Her answer relied on both knowledge of place and people:

> I would start by going to see the Freeholder [county elected official] who I know, who is most concerned with sustainability issues and practical issues for how do we build a more sustainable environmentally county? I would say let's go talk to [him]…You know this is what he's interested in, and he has oversight of all the

[23] Composting programs such as these collect household and commercial food waste that is centrally composted and distributed to gardeners.

> parks in the county. Lo and behold, maybe we take this whole ripple effect and have a much wider impact down the road.

Perhaps in that elected official's mind, this would be an environmental issue, but for this study a countywide composting program that targets community gardens would be evidence of an expanding community economy. The ideas presented to me show that those possibilities are already being imagined, in part because of the dynamism of the community brain trust.

Know-how: Integrating external knowledge into local practice

The third component to this analysis is "know-how"; how does a community brain trust learn to do community gardening? Knowledge about networks—individuals and organizations that can make things happen, *and* their extended connections—shows the importance of "know-who," and knowledge about place is built through trust, reciprocity, and concern for community. Community gardening, as shown in previous chapters, also involves myriad technical skills. At first glance, these are skills related to gardening: construction, horticulture, water management, and pest and disease control. However, these tasks must be learned and conducted in the social and spatial context of community garden. A group of people gardening in close proximity with shared resources means that garden management is not simply a matter of learning best practices that may work in commercial agriculture or home gardening. Crop rotation, for instance, is a standard technique to manage pests and diseases but does not work well in community gardens; garden plots may be too small to effectively rotate crops, and gardeners may be interested in growing similar crops as their neighbors. Decisions about how to manage surplus (see chapter seven) are also not learned from horticulture

textbooks. Put simply, getting resources is one part of networking, while figuring out how to be productive is another part.

"Know-how" is developed perhaps first within individual community gardens, as I showed in Chapter 6, but it can be developed more efficiently through external dynamics. Conversations between community gardens and site visits among gardeners have been shown to be an effective way of learning, and these were key mechanisms of the New Brunswick Community Garden Coalition as well (Cameron, 2011). Of particular interest here, however, is the flow of "know-how" into the local network from outside because it travels over distance better than know-where and know-who. In relational economic geography, technical knowledge is most easily codified into written form and transferred over long distances, as opposed to tacit knowledge that is learned through everyday contact and face-to-face interaction. The following examples show that "know-how" can be acquired externally, in part because it can be written; face-to-face interaction, however, can be an important learning mechanism and so regional travel can be important.

Going elsewhere to learn through face-to-face interaction: Isles, Inc. in Trenton

Isles is a non-profit organization that operates a community garden support network and agricultural job training programs at around 40 sites in Trenton, New Jersey. They do not directly manage the gardens but assist residents who try to start them. They also have demonstrations and workshops around the city to bring residents together to share knowledge. The urban agriculture director explained how both the technical and the intangible are a part of learning through trips to other places. He visited an urban farm in Brooklyn through a field trip hosted during the American Community Gardening

Association's conference in New York City. There he learned about a community composting system. He took that idea to build a larger worm composting system in Trenton that would work through the winter. The benefits of such learning, he points out, are twofold: "Just picking up little techniques like that. Or generally being inspired by work that other people are doing can kind of amplify the effects of what you're doing in your own community." In this example, technical knowledge that could have been learned through written means—composting systems—was better appreciated through the tacitness of seeing it in person and building camaraderie with others. This involves not just learning, but also getting encouraged by the work of people in other places—the Elijah's Promise director spoke of the "ideas and energy" that are shared when attending meetings and workshops in other places. Technical knowledge, then, still plays an important role but it is perhaps better learned through face-to-face interaction.

Subordinating external knowledge to local practices: New Brunswick Community Food Alliance

External knowledge still must be integrated into existing norms and relationships in order to be put to work. The New Brunswick Community Food Alliance (NBCFA, "the alliance"), is a case that demonstrates how the tacit knowledge of place and relationships join together with explicit, codified knowledge. It is also a case that shows how those relationships of trust and reciprocity can lead to the acquisition of knowledge and other resources. The NBCFA is a food policy council that coordinates a range of food-related work and advocacy. It originated through conversations between residents, academics, non-profit leaders, and municipal officials in 2011. The NBCFA comprises

five workgroups: Healthy Food Access, Community Engagement, Food Economic Development, Advocacy & Policy, and Agriculture.

The food alliance emerged from efforts that built the lengthy history of food-related work in the city. Thomas, for instance, is a long-term member of New Brunswick's 2nd Ward Block Club, a neighborhood association that engages with numerous community affairs. As a resident, he was interested in helping to start a community garden on Suydam Street after learning about a right-of-way owned by the city that had not been developed. Due to the 2nd Ward Block Club's existing relationship with the city government, it was fairly easy to gain permission and free access to the site, which began in the early 2000s. Through that work, Thomas became involved in food-related efforts, such that in the early 2010s when ideas began circulating in New Brunswick about a food policy council, he was on board.

A variety of residents, non-profit employees in New Brunswick, and academics from Rutgers were a part of this formation; once established, it functioned through commitment of those people working and living in New Brunswick on a daily basis. A graduate student at the Bloustein School of Planning and Public Policy studied food policy council models from around the country to provide some materials from which to learn. A USDA grant provided initial financial support, which was secured through the efforts of Elijah's Promise (a New Brunswick anti-hunger non-profit) and DEVCO (a public-private redevelopment company in New Brunswick). There were a lot of hands in the pot, so to speak, trying to get the food policy idea going.

The NBCFA was not built entirely endogenously by this eclectic mix of institutionally-driven actors, nor was it a model transposed from elsewhere. I asked

Thomas, for instance, how the people involved in starting the NBCFA took what was learned from researching food policy councils and applied it in New Brunswick. As Thomas explains, it was not transposed onto the city but carefully integrated into existing local relationships:

> I would say we used that [food policy council] report as sort of a model, but we didn't try to fit what we came up with through the forums into somebody else's forum. People had enough expertise already, from other projects they've been on, to know how to put something like this together. We just had to focus our efforts on this specific question [of food]. And knowing how to get information out of residents, from other things that I've been involved in, other people have been involved in, initiatives that are going around the city. If anything, in my mind those [existing] things were the model.

Even though the team had collected some codified knowledge of food policy councils around the country, Thomas is quick to point out that they were really building on the collective experience of those people who had been working in New Brunswick for some time. This experiential knowledge was the core on which they launched this new effort, even if the specific configuration of actors and procedures in setting up a food policy council was new ground. Thomas goes on: "they were things that we already had going on, so we said let's look at it that was…I think everybody just had some experience already and just knew where to go to keep going."

The inflow of know-how to the NBCFA, in other words, worked not on its own terms but because those local actors subordinated it to know-where and know-who. Rather than simply transposing outside knowledge, interviewees preferred to see it as a guideline that needed to work within the existing community brain trust.

In summary, community brain trusts innovate and build capacity through inflows of know-how; although such knowledge can be more easily transferred over distance than

know-where and know-who, face-to-face interaction aids that process. Such interactions lend excitement and encouragement when visiting others in other places, as evident in examples from Trenton and New Brunswick. The Elijah's Promise director explains as much:

> Some of the first activities of the food alliance were to really get people together to go visit and learn from others in the area who are doing this work. Because one of the best ways to get excited and energized and motivated is to see and learn from others, and get excited by the possibilities. I think that those coalitions and networks, they're great as far as information and energy and ideas, but then when you come back home, you've got to have a system of communication and ability to make change that is in place so that you can implement.

Additionally, reports and communication from a distance holds value as a set of guidelines that can then be integrated into know-where and know-who. When the food alliance was starting, its members learned about food policy councils across the country but put those lessons in service of the existing community brain trust.

Community Brain Trust at work: "Come Grow with Us!" in Union County, New Jersey

Community brain trusts can then facilitate flows of labor and materials as these everyday relationships are built through hard-earned trust and reciprocity and mobilized through know-where, know-who, and know-how. In the Union County cities of Elizabeth, Linden, and Union, Come Grow with Us! (CGWU) coordinates the circulation of labor and materials between community gardens and urban agriculture sites, and it is a program of local non-profit organization Groundwork Elizabeth. Groundwork is a national network of local non-profit organizations focused broadly on neighborhood revitalization and community development. The national organization is funded in part by the Environmental Protection Agency and National Park Service. CGWU focuses on

community food production and distribution, and aims to expand a local economy based on these activities.

CGWU relies on relationships to not just leverage its capacity in order to start and maintain urban agriculture and community gardening, but actively structure a network of production and distribution through 13 garden and farm sites. Resource inflows, such as horticultural inputs, are targeted to support the local economy. For instance, CGWU purchases seedlings from local hobby farmers to supply to its community gardens. Within the network, surplus distribution occurs in a variety of ways. While some community gardens distribute their food to the gardeners, others function more like a distribution hub. At the First Baptist Church community garden in Linden, three gardeners work at the site but distribute all of the food to neighborhood residents through a church in a manner similar to a CSA; they also arranged a "donation harvest," where residents can harvest their own produce in exchange for a monetary donation. In Elizabeth, the Portuguese Social Club, a cultural hub for the Portuguese residents in the area, added a greenhouse to their existing community garden to produce hydroponic greens for sale. This greenhouse, along with the other community gardens, is part of CGWU's plans to grow seedlings for distribution to garden sites and to sell produce to a commercial farm based in nearby Newark; this represents CGWU's work to identify channels for distribute food beyond the local network. These actions are the result of know-where, know-who, and know-how that circulate within and across this community brain trust.

CGWU also aims to expand its operations by adding more income-generating activities:

> CGWU: [We plant] basil at all of our gardens, and then we make pesto out of it. Our next move is to do food processing. There will be a farm stand here next

> year, and we'll get into food processing as well. On the farmers market level number one, and then more of like the Whole Foods things.
>
> Luke Drake: With the plan to do food processing and having a market, the plan is to sell produce and value-added products?
>
> CGWU: Yeah, and a couple of the gardens [are expanding their cultivated area]. So next year here, we'll have five more beds, we're pulling this [fence] over that way, we're gonna have either 5 or 10 more beds in here. They're gonna do a pumpkin field, watermelon field, and a corn field. They're at the level where they can have sales. You'll see it.

In the next year, 2013, they realized some of these goals but reassessed the likelihood of others. Although the greenhouse did not yet meet expectations as a place to grow produce for sale, they did, in fact produce seedlings that were distributed to the other community gardens in the area. A local hobby farmer based in nearby Clark provided additional seedlings, as did Garden State Urban Farms. The connections in this network that were expected to facilitate an outflow of resources—in this case, selling produce—instead provided additional inflows. This is not to say that the goals of selling produce are dashed, though. Instead, one might see that local network as having expanded, and in the future the potential for additional innovation is already in place.

Sharing knowledge (and some labor) through virtual networks: "Sister Gardens" in New Jersey and Australia

In the discussion on external knowledge above, it became clear that the flow of know-how can also be entwined with less tangible encouragement and emotional support; by sharing technical knowledge, community gardeners from different places are motivated by getting to know other people that are engaged in similar practices. In places where there are few or no other community gardens to connect with, electronic communication has partially substituted face-to-face communication. Although the

intensity of interactions formed by CBTs has formed the basis of this chapter, there are resource flows that connect community gardeners who may never cross paths in person. In the dawn of the Internet age, some geographers questions whether electronic communication would render spatial clustering and face-to-face communication a thing of the past (Amin and Graham, 1997). These fears did not come to pass, though. In this study, electronic communication has supported the spatial clustering and local networking. Individual community gardens and local networks in Chapters 6, 7, and 8 use Internet message boards and email lists to plan, solicit ideas, and announce news. Such tools have not superseded in-person meetings but have in fact made it easier to get people together. There are cases, however, where virtual networks seem like the only option for community gardeners to exchange ideas and work together.

The East Brunswick Community Garden (EBCG) is just a few miles down State Highway 18 from New Brunswick. In a bucolic suburban setting, EBCG is the only community garden in the township. Like the Cook Organic Garden Club (Chapter 6), though, it covers a much larger area than most community gardens in denser cities. While the median number of plots per garden in New Brunswick is 28, there are 175 plots at EBCG. Furthermore, each year since it began in 2009 it has added more plots and expanded in area and membership.[24] As a result, this one site represents a clustering of residents from around the township who are interested in community gardening; however, the garden leaders do not connect with other community gardens.

[24] The history and development of the East Brunswick Community Garden is covered in more detail in Chapter 8.

This is an important distinction for the garden leaders, because they must continually make decisions on how to manage the site and its collective labor (as does any community garden, as discussed in Chapter 6). As one of EBCG's leaders told me, there is no reason to reinvent the wheel—if somebody else had addressed a management problem, it is better to learn from their mistakes than to go through them all over again on your own. With no existing public database of community gardens to access, the leaders simply did not know about other gardens around New Jersey. They began searching the Internet for community gardens, and instead of finding other sites in the area, they actually found a garden in a town of the same name in Australia. In "Brunswick East," a suburb of Melbourne, members of the Merri Corner Community Garden were also in the process of starting up their site.

During EBCG's second gardening season, the founders of the U.S. garden contacted the Australian gardeners, which led to the two groups becoming what they called "sister gardens." They have since built a relationship through which they share knowledge and labor. In their words, it is a "joint gardening community" that spans half the globe. They have used Skype to tour each other's gardens (shown in Figure 7.11), and the leaders of the two gardens help each other with advice on garden management. Additionally, they have worked with each other to draft funding applications. Merri Corner received a grant from an international garden-funding program and shared the information with East Brunswick, including writing a recommendation letter for the Americans' application to the same organization.

Figure 7.11. Members of the East Brunswick Community Garden sharing a virtual tour over Skype with Merri Corner Community Garden in Brunswick East, Australia. Photo courtesy of Liti Haramaty.

The real impact seems to come, though, through the back-and-forth communication between the leaders of the two gardens about everyday management issues. As the EBCG president put it, "They'll send us emails that mimic the kind of emails that we send to each other [internally], of some frustration or some success, whatever it is, that sound just like us." I visited the Merri Corner gardeners, who are actually part of a local community garden network in suburban Melbourne. Even so, the leaders enjoy being in touch about once a week with EBCG. For them, it allows them to be more candid about their challenges without fear of offending any friends, families, or

neighbors that they might risk by sharing with the local network. Merri Corner planned a big garden event to do some of the initial construction at the site. According to Liz, one of Merri Corner's gardeners,

> It was a great event, but nobody really put their hand up to help. We must have emailed [EBCG], and I must have made a passing reference to it, and they just wrote back the nicest email. Just really reassuring that they face the same thing, and 'often it's type-A personalities that get involved in this like most of us are, [but] not everyone is like that, and not everyone wants that. [But] it is worth it, you do see there's a reason for all of this.' It was just lovely to hear—they just articulated everything that I had been feeling. It was nice to know that it wasn't just us.

The Merri Corner gardeners recognize that on a day-to-day basis, they were more likely to focus on each other and the labor and materials needed to build the garden than to spend energy building a transnational partnership. Still, they see the value of that relationship, as put into words by Liz: "there's all that tactile stuff that you can't do because of technology, but that doesn't mean that there's not some kind of connection. Then you can look at how you can use the medium that you've got so that people have something they can do with their hands." For another garden leader in East Brunswick, this connection provides encouragement in a way similar to that discussed in the section on community brain trusts above. "It's people on two sides of the world enjoying the same thing," she says. "It's a connection, and with the Internet and all those kinds of things, it's fun, it's cool, it adds to the sense of community and the purpose. And it makes the world smaller. It adds a global dimension to the whole thing." When community gardeners are faced with dominant narratives that their activities are small, fragmented, and temporary (see Chapter 5), this kind of reinforcement is strong.

Conclusions

This chapter began by recounting a participatory GIS project that revealed how knowledge of place is important in the everyday function of community gardening. Coalition members became more concerned with figuring out why gardeners would live in various parts of the city, or outside the city, than with our original intention of producing an asset map. The participants linked gardener distribution—the locations of gardeners' homes relative to their gardens—to the way that residents became involved in community gardening. In some cases, this was because of existing family ties to certain gardens, and in others it was through the outreach efforts of organizations that help coordinate gardens; for others, walking past garden sites everyday prompted them to join. Coalition members also revealed and created knowledge of place through the project by discussing why certain parts of the city had no gardens. Knowledge of place—know-where—emerged through interactions and through everyday work in the place. It is still unclear, though, how know-who and know-how may play parts in local community gardening networks.

Beyond the PGIS project, interviews and participant-observation in New Brunswick, Trenton, and Union County provided deeper insights into the constitution of networks through knowledge flows. This ethnography looked at the mechanisms through which local networks are formed, which I discuss in terms of "community brain trusts." Three types of knowledge are important in network formation; the embeddedness of actors in place, along with connections across the city and beyond, form those community brain trusts. Knowledge of place is built through a commitment to community, which manifests through everyday acts of reciprocity and trust-building. Access to social networks is granted through know-where, and this know-who allows

those in the network to efficiently identify and secure resources to start and sustain community gardens. It is important to know the right individuals or organizations, and to know how those potential linkages are connected to others. These relationships are not accessible by just anyone, however; it is not enough to know about networks. Reciprocity and trust is needed for entrance into those networks, to remain within them, and to acquire resources. Reciprocity and trust, in turn, is developed by embeddedness in place and dedication to the community—however defined—and not just personal gain. In short, know-where and know-who are reflexive processes. With these pieces in place, external knowledge in the form of know-how can be brought in; however, external knowledge is less likely to be useful without an existing local knowledge network. Explicit knowledge is best put to use if it can be integrated into local networks, and it is assimilated well when learned through face-to-face interaction. In this way, there is a spatial dimension to those connections beyond local networks. Even though electronic communications have vastly improved information exchange, it is through travel to other places and interacting with other community gardeners that they best produce and acquire new knowledge. Taken together, these "community brain trusts," as labeled by one research participant, do not just facilitate the flows of resources but can form the basis for the deliberate coordination of production, distribution, and consumption.

Commitment to place does not necessarily lead to parochial attitudes of self-determination, however. Indeed, many of the people that I worked with in this chapter actively seek out connections with individuals and organizations outside of their everyday routines. Although many of these interactions are based on the exchange of technical knowledge—for instance, composting techniques and the management of

gardeners' labor—an equally important outcome is the reinforcement one gets when seeing people in other places doing similar work. This, I feel, is not displayed in the REG literature. These interactions reflect a sense of a bigger purpose; not in the sense of addressing a set of problems (see Chapter 5), but in reconfiguring relationships with other people and the environment.

Although this chapter focused on the everyday actions among "grassroots" actors, their linkages with institutions both near and far also became evident. In the PGIS project, we encountered other forms of resources, such as funding and donations, which broadened our network to local businesses, Rutgers University, and New Brunswick headquarters of Johnson & Johnson. The influence of institutions' policies and discourses has great effect on community gardening, as shown in Chapter 5. The interface between community gardens and the institutions that channel resources is thus the focus of the next chapter.

Chapter Eight: Local networking among institutions and community gardens

This dissertation has traversed a range of organizational and spatial units thus far to assess networks that shape community gardens. From the national scope of community gardening practice and discourse, to the internal dynamics within community garden sites, and branching back out into local networks, this study has examined ways in which we might see a community garden as more than a small, discrete infill in the fabric of the mainstream economy. This final empirical chapter closes the study by locating the place of institutions in this network approach to community gardening. The previous chapter, which discussed knowledge flows within and across localities, ended by pointing out the participation of local institutions in those processes. In that case, local government, a university, and the headquarters of a global corporation became actors in a network of flows that enabled certain aspects of community gardening. This chapter examines local institutions' relationships to community gardening in order to not only better understand the external dynamics of community gardens, but also to contribute to institutional analysis in the community economies literature.

In the panoply of economic geography, institutions are a significant part of economies, even though they are both broadly defined and broadly interpreted (Aoyama et al., 2011). Generally speaking, institutions are patterns of behavior that shape economic activity. More specifically, economic geographers are often concerned with what are called institutional environments and institutional arrangements (Martin, 2000). Local customs and work practices, along with formal rules and regulations, make up the former. Particular organizations, such as NGOs and trade associations, emerge from those

environments and constitute the latter. Organizations working within those environments play a key role in shaping economic activity by facilitating knowledge and other resource flows within a locality and across locations and regions (Bathelt et al., 2004; Wolfe and Gertler, 2004; Bathelt and Glückler, 2011). The close spatial proximity and interaction of a variety of institutions is particularly important in local economic development, which some refer to as institutional thickness (Amin and Thrift, 1995; Raco, 1998).

These definitions of institutions are important for both relational economic geography (REG) and community economies research. In REG, including institutions in analysis is a way to reconcile the tension between what some see as the atomism of neoclassical and the determinism of Marxist approaches (Yeung, 2005b). Institutions shape firms' behaviors by enabling and constraining many of the possible actions that firms can take. They connect firms, spur innovation through research and development, and foster learning and knowledge-sharing. In this way, putting institutions into the analysis lets us "ground" those processes that might otherwise be referred to simply as context. Rather than stopping the explanation at terms such as "context," researchers can use institutional analysis to go further in explaining the non-economic actors that shape the flows of knowledge, labor, and materials.

Community economies research, in contrast, has not analyzed institutions to the degree found in other economic geography approaches. In part, this is due to its project of rethinking economy as already diverse and foregrounding a politics of non-capitalist, collective production, which called for significant work at the site of the enterprise and the individual economic subject. Much work has been devoted to performative and participatory action research to imagine and enact new economic subjectivities.

Community economies action research aims to introduce new discourses of economy not only into scholarly literature but also to research participants. As such, much of the attention in this subfield is on the enterprise, cooperative, or community project as the site of economic action. Because of the work that has gone into researching those sites, institutions simply have not been center stage. To be clear, institutions have not been totally ignored in community economies research, but they have been given different treatment than other subfields and most often indirectly. Indeed, one could argue that the starting point of diverse and community economies—to unsettle the notion of the economy as singularly capitalist and introduce discourse of non-capitalist futures—engages a set of formal and informal institutional environments of capitalism.

In practice, there have been a few efforts to foreground institutions in community economies research. The norms and regulations of marine spatial planning, which operate on the assumption that fishermen are individual self-maximizers, are challenged by work showing collective class processes in the fishing industry (St. Martin, 2001, 2005b). Institutions such as NGOs, schools, hospitals, and local authorities are also seen as local assets in economic development, though with an approach drawing more on an asset-based community development than with economic geography (Kretzmann and McKnight, 1996; Gibson-Graham, 2005). Furthermore, community economies researchers have redefined institutions in ways that foreground economic diversity instead of relying on definitions rooted in the capitalist economy—for instance, rethinking the household as an institution with economic agency (Safri and Graham, 2010). Others have studied subjectivities within institutions, using action research to

introduce new ideas of regional development into government agencies (Cameron and Gibson, 2005b).

Still, community economies remains focused on the sites of production and consumption. This creates openings for critiques of the approach, especially for those who see economic action as taking place in relation to larger institutions. For many, the focus on cooperatives and subjectivities foregoes insights provided by political-economy; for instance, the way global institutions such as the World Bank contribute to poverty while shifting burdens for development to localities (Watts, 2003; Kelly, 2005). Such critiques point out that power is often missing from community economies analysis, and that to ignore the institutions that may constrain or shape community enterprises is to ignore the broader contexts that ultimately determine what is possible. This is present in critical research on community gardens, as well, which have recently argued that the growth in community gardens comes from the shifting of burdens of food security and environmental stewardship from the state to communities (Pudup, 2008; Rosol, 2012). Such critiques do not work from the assumption that community gardens are sites of economic production.

Critiques about power have, however, been addressed throughout the diverse and community economies literature, and the formulations of power in this literature can apply to institutions as well (Gibson-Graham, 2002, 2003b; McKinnon, 2007; St. Martin, 2009). Such work aligns with other post-structural accounts that see power as relational, contingent, and the effect of interactions rather than something that precedes them (Latour, 2005). From an ontological perspective, community economies theory sees agency as distributed and not held within one individual or entity; it does not work within

a conventional structure-agency dualism where “macro” causes changes in “micro” and vice versa. Instead, power is conceived through Althusser’s concept of overdetermination, which sees social processes as being constantly in a state of mutual constitution (Resnick and Wolff, 1987).

By shifting from an outlook of community gardens to sites of economic dynamism, those power dynamics can shift as well. In REG, for example, any firm needs a host of institutions (government and otherwise) in order to function, network, and grow into agglomerations. Institutions shape firms’ actions but do not inherently wield ultimate power over them. Whereas community gardens might be perceived as weak, inefficient, and in need of “larger” institutions to actually survive, small businesses might be perceived as dynamic when they show that they can survive despite their need for larger institutions.

My network approach allows us to rethink the relationships between institutions and community gardening as more symmetrical in terms of power—at least until we uncover the details of the relationship. That is to say, I do not assume any particular power asymmetry until the evidence is in. This aligns with notions of power in a community economies framework, where institutions, like power, should be examined through the lens of overdetermination. Rather than forces that are ultimately more powerful than a community enterprise, research on institutions’ roles on community economy can start by posing their relationships as open questions: how do institutions shape community economies? How do those relationships and moments of interaction unfold, and to what effect?

This chapter focuses mainly on community gardeners' relationships with institutional arrangements and institutional environments (terms I draw from Martin, 2000), through interviews and participant-observation in eight cities and towns across New Jersey (see map in Figure 8.1).[25] In this chapter, I identify institutional arrangements as formal organizations by their relational proximity to community gardening. In contrast to the previous chapter where community brain trusts are deeply committed and engaged on an everyday basis with community gardening, I see institutions as entities such as local government, large non-profit organizations, and corporations that engage or support community gardens but with less continuity than those individuals and organizations described in the previous chapter. Since I base my study in community economies theory while drawing on REG, I add to what are considered institutions in conventional economic approaches by including capitalist firms.[26] In REG capitalist firms are the economic actors and institutions are "non-economic" socio-cultural contexts that shape firms' actions. This definition, though, is relational and not absolute; one should define institutions as that which is contextual relative to the economic actors in question. In a community economy, those context might include other capitalist firms as well. By this I mean that institutions, in community economy approach, might include capitalist firms when they relate to community gardens in ways similar to NGOs or other institutions.

To better understand relational action between institutions and community gardening, this chapter expands empirical observation from community gardens to

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[25] Atlantic City, Camden, East Brunswick, Hopatcong, Maplewood, Newark, New Brunswick, and Trenton.
[26] See chapter three for a full explanation of my methodology that draws together community economies and relational economic geography.

similar projects. Particularly, a farmers' market, a community orchard, and various other urban agriculture projects are included here alongside community gardens. This broader analysis emerged as the data began to show that community gardens are directly and indirectly connected to institutions through this broader set of urban agriculture and community-oriented food projects. In this network approach, community gardens both precede and emerge from these related sites in part through institutional action, as I will show below. This is particularly relevant since this study has gone beyond the spatial and organizational boundaries of community gardens, something I address in the concluding chapter.

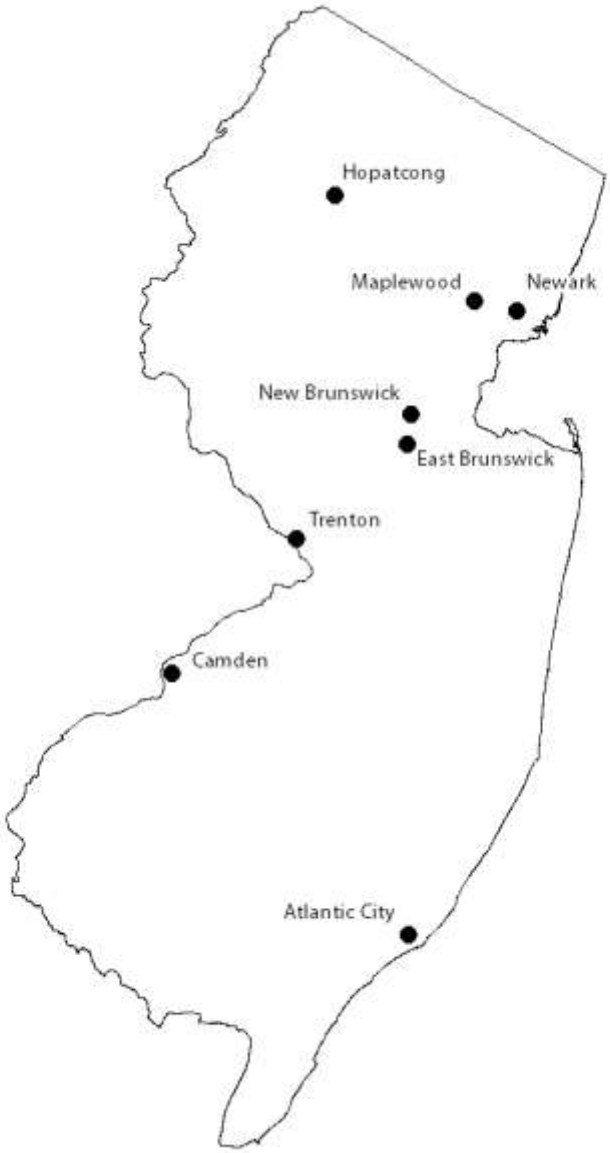

Figure 8.1. Research sites in Chapter 8. Map by Luke Drake.

My findings in this chapter suggest that institutional action can support community gardening in terms of efficiency and innovation, without it leaving community gardens ultimately dependent on those institutions. Institutions can shape the spatial patterns of community gardening by directing the flows of resources to certain

places at the exclusion of others, and as such can provide a link to external sources of knowledge, labor, and materials. They do not, however, function through inherently unequal power relations where community gardeners simply take whatever they can get. In order to start community gardens in a given place, institutions must rely on communities to mobilize those resources since community gardens require continuous labor to be productive (see Chapter 6). For this to happen, there must be trust and reciprocity between institutions, such as universities and NGOs interested in community gardens, and community gardeners. The contingent relationships are also evident within and between institutions as well, and sometimes those institutional efforts, which appear to emerge from the façade of a strong, monolithic organization, are as fragile as small-scale community efforts.

Institutions as nodes in networks: Shaping patterns of community gardening

In New Jersey, community gardens are clustered in cities that also have strong institutional presence. Compared with the data in Chapter 4, Figure 8.2 shows that like the U.S., community gardening has expanded across much of the populated areas of the state.[27] Concentrations are found, however, in and around urban centers like Newark, New Brunswick, Trenton, Camden, and Atlantic City.; there, institutions focus on their

[27] This map represents the spatial distribution of 218 community gardens that I located through statewide surveys from 2011-2012. I emailed questionnaires to cooperative extension staff in each county; accessed surveys completed by attendees at the 2011 and 2012 New Jersey Community Garden Conference; and searched internet databases.

"backyards" bring in resources and work to improve community well-being. In the process, they facilitate spatial clustering of resource flows.

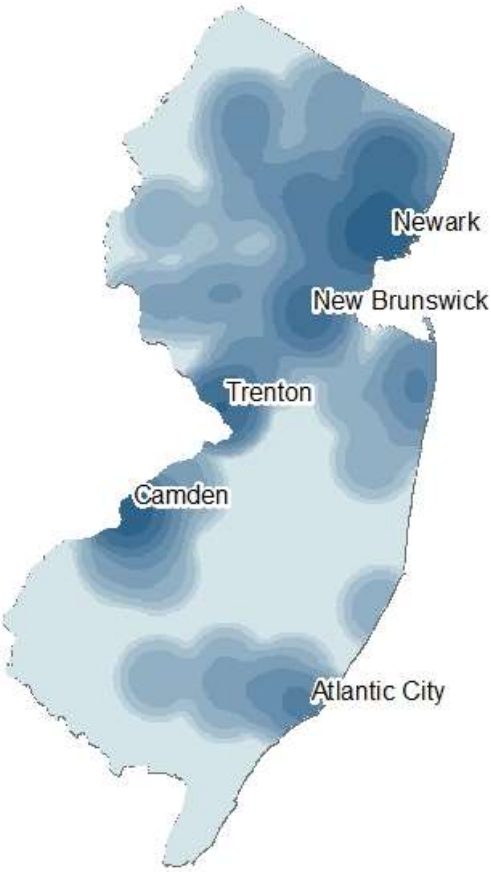

Figure 8.2. Spatial distribution of 218 community gardens across New Jersey. Darker colors indicate higher concentrations.

Place-based NGOs such as Isles, the Greater Newark Conservancy, and the Camden Children's Garden represent one way that community gardens intersect with institutions.[28] A common way that communities connect with institutions is by engaging local governments for resources such as water and land access, and those NGOs often mediate and act on behalf of individual community gardens. Across New Jersey's urban

[28] In Trenton, Isles; Newark, Greater Newark Conservancy; Camden, Camden Children's Garden.

settings, for example, local groups often acquire water through fire hydrants that are located near garden and farm sites. When local efforts are linked with organizations that have strong relationships with local government, this process is easier. In Trenton, Newark, and Camden, large non-profit organizations aid and facilitate urban agriculture and community gardens. These organizations act as liaisons between neighborhood groups of gardeners and local government.

The executive director of Ag in the City, a statewide non-profit organization whose aim is to connect and develop urban agriculture efforts across New Jersey, sees these larger organizations as key actors in facilitating local efforts. She points to the work of Isles, Greater Newark Conservancy, and Camden Children's Garden, as examples of large organizations that work within a specified territory and have built up strong relationships with local governments and grant agencies over a period of time. As such, they link community gardeners to institutional resources, as she explains:

> A lot of times, the people that are getting water and are getting debris removal, who are getting clean soil for raised beds--a whole host of things--they are getting them from the non-profit that is organized in the community. Like Isles and GNC are the brokers for the city, for the lack of a better term. They'll arrange for the fire trucks to come to your location and water, maybe. Or they'll figure out a way to get the fire hydrants open for you twice a week. But they sort of broker those deals.

These organizations facilitate community gardens by offering technical and advisory services to residents that want to start gardens. The organizations do not directly manage them but help obtain land and materials, often at prices well below market rate; they also run educational workshops. They work with local governments to secure public land at low-cost lease rates, for example as low as a dollar per year. These organizations also

more directly run community-oriented urban farming programs as income-generation and job training projects.

Figure 8.3. Residents take a break from preparing a community garden site in Camden, Sept. 2012. Residents got the land and materials such as mulch with the assistance of Camden Children's Garden. Photo by Luke Drake.

Figure 8.4. A staff member of the Greater Newark Conservancy inspects a rainwater cistern at a community garden in Newark, Sept. 2013. The NGO facilitates resource provision to community gardeners from local government and other sources, such as this cistern that was installed by Rutgers University. Photo by Luke Drake.

These NGOs also play a role in getting public land for use in various urban agriculture and community gardening efforts. “Adopt-a-lot” programs, for example, are active in Newark and Camden; municipal government provides inexpensive leases on underutilized public lots, which are common ways to access land for community gardens. Although any resident could use these programs, non-profit organizations that are familiar with the process more efficiently help residents to access the land. In addition to facilitating land leases, these organizations provide materials and technical assistance to residents. Greater Newark Conservancy has a program called “Plot it Fresh,” where they help residents access materials and labor on top of the adopt-a-lot program:

> We take the adopt-a-lot and we build the whole thing out. It's not like we're just starting people off with an adopt-a-lot and they're on their own. We go in, and we'll fill out the whole site with beds or get a whole bunch established and then we can add on. We'll usually set up rain barrels, put compost in, and then we charge $10 a season for gardeners to use a 4x8 [garden bed] (Greater Newark Conservancy employee).

In Trenton, Isles performs similar services but in more of a consulting and education role, rather than the full construction offered by GNC. Isles' urban agriculture coordinator explains their process as follows:

> For the most part, we respond to a community need. People that are interested in starting a [community] garden, may be aware of another successful one in another neighborhood or with another organization. So they reach out to us, and we help with the technical and organizational assistance. They may say, 'I've got four neighbors, there's a vacant lot across the street, can you help us develop this into a garden?' So then we bring our expertise, and our relationships with other organizations including the city to help them develop. We'll do a site evaluation, we'll check it for exposure. We'll help with soil testing. We can check to see if there's water access, if there's a fire hydrant that we can get permission from the city to use for the gardeners. Evaluate it for security, those types of things.

Isles is not just channeling flows of resources available through the city but is also at a nexus of overlapping networks; they provide a connection between neighborhoods, and between residents and local government. An Isles program director emphasizes that they take their lead from residents:

> Sometimes, somebody comes to us from the very beginning. Sometimes, people have already found a site and started the lease process on their own. Sometimes, a garden has already existed, but they want to make it more robust. It really depends on the needs of the community. Just to stress the fact that we don't manage these gardens--they're not our gardens.

Even though these NGOs act on behalf of community gardens, they do not set out to coerce or manipulate people into becoming gardeners or turning sites into gardens. Rather, they act as nodes in linkages that connect community gardens to the local

government and aid the flows of resources. They act as a bridge to institutions that are seeking to channel resources into those cities.

Figure 8.6. One of the 54 community gardens in Trenton that Isles supports, Sept. 2013. Photo by Luke Drake.

In Atlantic City, AtlantiCare is a health care provider and major employer that has been a link with external funding sources and local community gardens. It approaches community gardening as a public health tool, and seeks to establish community gardens in each of the city's six administrative wards. To do this, it has sought out external funding opportunities and local organizations in and around Atlantic City in order to support community gardens. AtlantiCare secured, for example, a $50,000 donation from the Dave Matthews Band, commemorated with a sign at the Hope Community Garden (Figure 8.7). It seeks out local partners for service delivery, however, like county agents from cooperative extension, churches, and non-profit organizations. It also negotiates

with the Atlantic County Utility Authority to deliver free soil and mulch to community gardens throughout the county. Community gardens are often the target of health-related grants, but interestingly in Atlantic City the program director saw it as bit of an alternative to the casino-driven investment that has long characterized the area:

> I think one of the successes for us [is] this has been a non-casino project. A lot of the development in the city is either driven by the city administration, or CRDA [Casino Reinvestment Development Authority], or the casinos. So we're kind of like this different group that's doing stuff, and we're kind of just getting our hands dirty and starting it without waiting for a lot of permission.

Putting these resources in place is only one part of the equation, however. How those resources get put to use, and result in actually existing community gardens, is understood through the relationships with residents that are explained in the third section of the chapter.

Figure 8.7. Sign at Hope Community Garden, Atlantic City, acknowledging local and extra-local resource flows. Photo by Luke Drake.

There are also instances where the emergence of community networks (chapter four) translates into a reputation that draws the interest of institutions. In April 2014, I received a phone call from an employee of The Nature Conservancy—which he described as "the world's largest environmental non-profit"—about a grant his NGO had received to install water cisterns at community gardens in New Jersey. The TNC grant was funded by Johnson & Johnson, who suggested to TNC that they focus on New Brunswick because of the active community gardening scene in the city. This grant would provide cisterns to existing community gardens, and it included social research that TNC would conduct on gardeners' water conservation practices. During this initial phone call, I suggested that he bring the idea to the New Brunswick Community Garden Coalition given the importance of community support for such projects. In May he attended our meeting, and had already had a few additional conversations with the Coalition's co-chair. Although the original grant called for a period of TNC social research before the cistern installation, the Coalition made it clear that following that timeline would mean they would not be installed until December. That would mean the cisterns would not be used at all during 2014. As a result, TNC modified their grant terms with Johnson & Johnson so that there would be no research component and the cisterns would be installed during the summer of 2014. The grant will pay for all materials and a licensed contractor to build the cisterns at three community gardens, and it will provide estimates at seven additional sites that the Coalition can use for future use in grant proposals.

Institutional environments, in which norms, practices, and regulations shape economic action, can also work in the favor of community gardens. The adopt-a-lot

programs described above are one such example that are not present in suburban community gardening, since urban areas have been dealing with abandoned properties for much longer. In addition, local institutional environments shape network linkages between community gardens and NGOs through funding mechanisms. The Greater Newark Conservancy, for example, has benefited from a large influx of money through a Newark International Airport tax. A portion of the tax each passenger pays to depart Newark is allocated to the City of Newark. Then-mayor Cory Booker designated a portion of these revenues to urban agriculture efforts in the city, which has played a large role in GNC's ability to expand well beyond community gardens to larger urban farming projects. GNC started its second urban farm in 2013, and the two sites employ participant's in the city's transitional jobs program for incarcerated individuals. This institutional environment, in which public monies are distributed to community enterprise development, has helped a much broader assortment of food-related ventures grow in addition to community gardens.

This is not simply an uncritical celebration of institutions fostering community gardens in dense urban centers. Plenty of examples in the literature show how institutions constrain community gardens, and I address distrust that this creates in a section below. In chapter five of this dissertation I show that discursive norms and historical institutions also constrained innovation in community gardening. It could also be clearly argued that the adopt-a-lot programs that provide land to community gardens could just as easily be taken away in favor of real estate development, since local governments are merely looking to find the "highest and best use" that is available. The case of Mayor Giuliani's effort to sell community gardens in the 1990s in New York City is a well-known case of

this in the U.S. (Schmelzkopf, 2002). Focusing on institutional attention in these dense urban centers, however, gives only a partial view of how these spatial patterns form and change. For one, it shades the analysis with themes of philanthropy—that community gardens simply remediate broader economic woes (see Chapter 5). What about institutional action in small towns and suburbs, though, where such "urban" problems might not grab the attention of foundations or corporations looking to fund community gardens?

If institutions can draw resources to urban centers, as well as constrain community gardening in some instances, then what do these actions look like outside of those clusters? I have shown in chapter four that people are engaging community gardens across the U.S., not just in urban centers. Simply because cities draw the lion's share of institutional interest does not mean institutions have no relational action in suburbs or small towns. The other side of this coin is to examine how community gardeners access resources in places where there is less institutional interest and thus less facilitation of resources. How do community gardeners access the state and other resources, which so often occur through the help of institutions in cities, in places where institutions are less concerned with community gardening and where land is not a hot-button issue like in the denser urban centers?

Institutional action outside of clusters

Cities with strong and active institutional presence, like those described above, see efficient and innovative actions to start and sustain community gardening. Yet, as Figure 8.2 shows, community gardens are expanding elsewhere in suburban areas, just not in the concentrations as those found in the larger cities. What about those community

gardening efforts that might not be under the scrutiny or interest of large NGOs? Some cities and many suburbs receive much less institutional attention when it comes to funding agendas. Just as institutions can direct resources to those areas they perceive as needing community gardens, they can also overlook areas where there are interested people already engaging it or trying to start new sites.

In places such as this, it often takes a few key individuals longer amounts of time to gain the support of local government. In Maplewood, New Jersey, a group of residents got together to plan a community garden. Over several months, they convinced the local government to support the project in finding public land for the site, which is now located behind the town's municipal building (Figure 8.8).

Figure 8.8. Maplewood Community Garden, January 2013.

One of the residents recounts the process of starting the community garden, where a group of community gardeners had formed but they still needed a site:

> Irene: I started it, we had a group of about 12 people show up for the first meeting. Pretty much those people either are still involved and have a plot or stayed connected to us in some way. So it's been really good.
>
> Luke Drake: How did you market the new community garden [to the city] before it was even started?
>
> Irene: We have in town what's called a Green Team, which addresses all these sustainability issues. So I gave a presentation to them, and I asked for their support. I got members from that group to come and join us in trying to set up the garden. Then we went through a variety of steps. We had to go through town council to make a presentation.

In contrast to the examples drawn from cities above, the community garden was not a "no-brainer" for the local government, and there were not a host of large institutions working on the community group's behalf to help start it; rather smaller entities like the Green Team were leveraged. The new community gardeners thus capitalized on much of the discourse presented in chapter five—nutrition, food access, and sustainability—as they worked on their own to convince local authorities to provide resources; they also introduced notions of community well-being.

> Basically we just talked about community and how everyone together would develop a sense of creating space, and sharing recipes, and sharing ideas. And that pretty much did it. As long as [city government] were sure that it wasn't gonna infringe on anybody's space, they were happy.

Local government supported the garden and helped them find two potential sites, but in both cases there were residents adjacent to the proposed sites that did not want the community garden. Yet, neighbors of the proposed garden sites needed to approve the project, and those relationships proved more difficult to build than those with government. People were either not interested in community gardening, or they were

afraid of strangers near their houses. Although the garden ultimately started—and eventually expanded into a second site in another part of town—it was still a matter of months to secure a site from the local government. This is a far cry from the "adopt-a-lot" programs and NGO assistance to quickly turn vacant lots into community gardens in other cities.

In suburbs and small towns, the lack of institutional support can mean community gardeners spend years trying to get land and other resources from local government. In East Brunswick, a suburban township in central New Jersey, it took six years for a group of residents to get land to start their community garden (Figure 8.9). When a group of residents first organized to create a community garden, they faced resistance from both residents and town officials. "A lot of people said we don't need a community garden in East Brunswick, because everybody has backyards" recalls Liti, one of the garden organizers, "So at the very beginning the town wanted to see that there's actually a demand, that people would actually come." Dave, another organizer, pointed out that the then-mayor thought the community garden was a "frivolous expenditure."

Figure 8.9. East Brunswick Community Garden, June 2010. Photo courtesy of the Friends of the East Brunswick Environmental Commission.

The organizers continued their push for a site, but they did not want just any available land—since the town has no traditional center, they wanted it to be located at the municipal complex where the town hall, public library and senior center were located. Dave saw this area as a potential "main street":

> I wanted the garden to be here, in the center of town, because I thought that a community garden should be centrally located. We got high-density apartments, we got a senior center. A lot of community gardens I've looked at are tucked away in weird corners, underneath power lines. There's a great, big one in Florham Park--it's at the back end of a sewage treatment plant. They got a big space, it's a great spot for a garden, but it's just out of sight, out of mind. I wanted it to be in the middle, to be something bigger than that.

What ultimately led to the municipal complex being used for the garden was the organizers' continued push and a new, more supportive, mayor. This process took six years, however.

Once it started, the community garden increased in popularity—and size—and government support increased as well. Liti points out that "We're a very important social place. People said to us, that 'I come to the garden and I spend 40 minutes out of an hour just talking to people.'" For the garden organizers, this aspect of the community garden was important and was foregrounded more than it is in the urban sites I visited. The organizers really wanted to build a town center and overcome the individualized lifestyle that accompanies the built environment of suburbia. As it became clear to residents and town council that a community garden does have a place in the suburbs, interest and participation took off. The community garden was initially built with 80 plots, and individuals or households from East Brunswick could sign up for those plots. "[We] instantly filled them up and had a big waiting list. We had enough of a waiting list that we started opening up spots on the outside of the garden, just to let people garden" (Dave). By the second year, the garden expanded in size to 175 plots to keep up with the demand. In response, local government expanded its services to the garden. The municipality provides the land and water for free. Additionally, the municipality picks up compost and garbage, and they mow the area around the garden.

This group of gardeners began their solitary work without institutional support, or even the assistance provided through local networks of community gardens (see chapter four), leading to a long effort to get resources. Even though it took several years to break ground, the gardeners did not take the first site that was offered to them, because they

wanted to create a social space that was centrally located in the township. Once the garden was established and began to flourish, though, it became so popular that the town began providing additional services.

In the small town of Hopatcong, a group of residents trying to start a community garden faced resistance from both local government and other residents. Unlike Maplewood, the government was not supportive, and unlike East Brunswick, sizeable number of the town's residents simply did not want a community garden. Unlike those other two places, however, there were some local institutional assets that provided resources. Early in the community garden's development, interested residents sought town council support for a site. This group had persuaded the town's environmental commission to support the project by framing the garden as potentially part of the town's sustainability program. Thus, it got on the council's agenda, who said they would provide a piece of land for the garden—but would provide no other resources.

Indeed, the town provided nothing except for the plot of land. The community garden president reported that it took between $25,000 and $30,000 to prepare the site (Figure 8.10). Although many residents were interested in the community garden, it was mainly those who were already gardeners. Otherwise, public funding was made difficult by residents who resisted the project, which manifested heatedly in discussions on local news websites. The garden's president said, even after the garden has been up and running, "people are like 'I don't want the town, the taxpayers to pay for it.' So that's why we had to raise the money." Additionally, she said that many people did not see the community garden as something that belonged in the town—"Some of the negative people in town were like, 'why do we need a community garden? That's more for people

in New York.' Without broad support for public funding, the gardeners organized several fundraising efforts on their own in order to reach those people who did like the project. They benefited most, however, from a local shooting club that makes annual donations to community groups. As the garden president put it, "It's a shooting club for businessmen, and they like to give lots of money to organizations. So we asked them and they said yes we'll pay for it." The community garden got up and running, but in a strange twist is constrained by town council in its search for more funding. The garden is actually recognized as a subcommittee of the town's environmental commission but the gardeners are trying to sever those ties so that they can become an NGO and apply for more grants. In sum, there was institutional support, but it was more of a one-off connection than the result of the ongoing interactions between institutions, local government, and community gardeners.

Figure 8.10. President and Vice President of the Hopatcong Community Garden, June 2013. Photo by Luke Drake.

In suburbs and small towns, local networks and institutional action are spotty and more ephemeral compared to that in cities. Outside of clusters, then, individual connections must be forged without the aid of existing strong local networks. The effects are quite different than some previous examples where institutional action is intertwined in existing networks. In those urban areas, clusters of community networks and institutions can quickly start community gardens. Institutional environments that include such norms as “adopt-a-lot” make it even faster. Continued support, however, can be more difficult to come by as local governments in urban areas seek to redevelop properties or are simply too weighed down with other responsibilities. In the examples of small town and suburban community gardens, though, initial local government support can be extremely difficult to secure, in part because of assumptions of why community

gardens exist and where they are located—as tools to address "urban" problems (see chapter five). Moreover, non-profit and corporate institutions are much less prominent than in urban areas. In terms of continued support, however, urban areas rely more on those community networks to keep up resources provision. In non-cluster areas, there is less network structure to rely on and local government can be an important partner.

To simply look at the relationship between community gardens and institutions as a cautionary tale (Pudup, 2008; Rosol, 2012), however, would sidestep the contingency and open-endedness that is important to analysis in both REG and community economies research. Institutions are not inherently poised to enable or constrain community gardening, just as they are not for small businesses or large corporations in conventional economic geography. Rather, it is more fruitful to look at how those relations are enacted (Raco, 1998).

The remainder of this chapter examines how those connections are made and enacted. Having looked at how institutions are nodes in resource flows, I now turn to them as networks themselves to understand the dynamics within and between institutions. The last section examines the relationships between institutions and communities. Specifically, it shows that within institutions seeking to engage communities, action is contingent on individuals' relationships with others and levels of cooperation and trust.

Institutions-as-networks: Trust and reciprocity within and between institutions

Although institutions play a large role in directing external resource flows, and the configurations of those flows depends largely on local contexts, there is a degree of contingency within these institutions that show that they do not wield unilateral power

over communities. I examine this in detail through the case of the community apple orchard at Shiloh Community Garden in New Brunswick. I trace how the resources of Rutgers University came together to build an apple orchard at the site, which is shown after its completion in Figure 8.11.

Figure 8.11. Apple orchard after its construction at Shiloh Community Garden, April 2013. It was built in the "wall of fruit" technique, which allowed 40 young trees to be planted in a small area. Photo by Luke Drake.

Shiloh Community Garden was started by Elijah's Promise, an NGO examined in the previous chapter, and the garden manager is an alumnus of the Bloustein School of Planning and Public Policy at Rutgers. This story begins in the middle of existing set of networks that bring together gardeners, a local non-profit, and Rutgers University. The garden is open to all residents of New Brunswick and is part of the New Brunswick Community Garden Coalition. The garden manager is an Elijah's Promise staff member

who assigns new members, manages tools and grounds keeping, and schedules events. As a Rutgers graduate who had worked on food systems planning with a professor, the two along with the Elijah's Promise executive director had been exploring options for a community fruit orchard to complement the non-profit's anti-hunger and social justice goals. Separately, on a field trip to Philadelphia to visit community-based food initiatives, the Elijah's Promise director and one of the deans at Rutgers' School of Environmental and Biological Sciences (SEBS) began talking about building a community orchard in New Brunswick while they sat together in the van. The non-profit would need materials such as trees, and digging and trellis equipment, along with technical knowledge, to properly build the orchard. The dean she was talking to had experience with agricultural-related service projects, as well as the necessary contacts at Rutgers Cooperative Extension offices across the state that could bring in orchard capabilities.

That dean set out to pull together funding, knowledge, and labor to build the orchard, and as I interviewed him I found out that we had both applied for the same grant to work on New Brunswick's community gardens. He began preparing an application with the Shiloh Community Garden coordinator for a University-Community Partnership Grant.[29] Coincidentally, I had also been co-writing an application for the same grant with the chair of the Garden Coalition, but we did not know of each other's applications. It was revealed in the following interview:

> Interviewee: "So [another Rutgers professor and someone from the coalition] were doing a grant for the community thing."
>
> Luke Drake: "That's what I was involved in."

[29] Administered by the Rutgers University Office of Community Affairs.

Although we eventually merged our ideas together into one grant, the dean was unhappy when first learning about our other application.

> Interviewee: "*I* was doing a grant with Elijah's Promise for the same money [emphasis in original]. It wasn't until [the garden coordinator] finally said, you know, [these other two] have a grant [application]. I said, hold it, this is bullshit. So I went marching over there [to the other office], I said 'honey, you're the flavor of the month, but your star will fade soon too. Let's do this together. I just need a couple thousand dollars, you have grand plans.' So we collaborated and there's a section in that grant that covers the trees and the trellis. So the networking is then you have to convince people."

Although he had written a line into that other grant to cover some of the orchard expenses, it was not secured yet, and he also had to recruit someone for the construction. He called a Cooperative Extension agent based in northern New Jersey, whom he had gone to graduate school with, who specialized in fruit.

> Interviewee: "[The Extension agent] goes, 'we'll do a 'wall of fruit'. This is how you do it.' Well I go, 'I don't know how to do it, you'll have to help me do it.' So he looked at me and goes, 'I know what you're up to.' I said, 'well, just as long as we both know what we're doing here.' So then we did it.
>
> Author: What did he mean by 'I know what you're up to?'
>
> Interviewee: Well, he knew I was scamming him into helping me. I said 'I don't know how to do this wall of fruit, how to put this trellis in.' He worked his balls of that day--two days actually.

This dean worked a few other connections that way—"cajoling," as he put it, to get another technician to help with the construction and some power equipment. Although these remarks reflect different personality traits than shown in the discussion of local networks, the point here is that these actions so far have been as piecemeal as the solitary community gardens' efforts in the suburbs; each bit of support is a struggle to obtain. In this case, though, reciprocity came into play as people called in favors with others. As the dean put it, "Again, all these things are [working because] people do you favors. Now

you can't overuse it, and you can always make it clear, as you know, Luke. You always make it clear you're doing it for something. This wasn't going to benefit me a bit. In fact it literally cost me money." This last statement referred to how, even though he had added the orchard cost onto a grant, that money was not guaranteed and still did not cover the whole cost of the project. Indeed, the trees were delivered from Cooperative Extension but still had not been bought when we planted them.

He recounts specific, informal conversations that helped provide incremental support for the orchard through calling on long-standing relationships. For instance, as he went to buy lunch for the work crew on the orchard construction day, he ran into an "old friend" who happened to be on the university's Board of Trustees. This extended quotation reveals how the perception of reciprocity is important, as well as the informal conversations that produce institutional actions:

> So I'm at Starbucks buying some coffee before [picking up lunch for everyone], and [the Board of Trustees member] said, 'you're dressed up looking like a farmer today.' I said, 'I am, I'm planting apple trees. But like all farmers, I can't pay for it.' She said, 'what do you mean?' I said, 'well, we don't have any money but we got the goddamn trees.' She goes, 'well, what are you doing about it?' I said, 'well, I wrote a check out for $500 and gave it to the foundation, and said to put it in an account where I can pay for the trees.' She goes, 'well, I'll match it.' So she wrote out a check. **So in the course of a cup of coffee, I convinced myself I had to write a $500 check, and I got [her] to, so now I've got a thousand dollars**. This is networking, Luke! This is truly networking. So now we got trees, we got a team, we got some--most of the money. I also had some money in an account. I got a teaching award last year for a thousand dollars. I was going to call this a teaching orchard. So I got that thousand dollars, my own 500, [her] 500--so far we're moving ahead. But all this is done with smoke and mirrors.

It should also not be forgotten that these many wheels were set in motion long after a local non-profit planted the idea for the orchard in these institutional partners' minds. Institutional action, though, was contingent on a number of interactions that relied on real or perceived reciprocity. In doing so, funding, materials, technical knowledge, and skilled

labor, were arranged to produce a community apple orchard. In sum, although institutions like Rutgers may be seen as being able to wield power over a group of community gardeners or a local non-profit, they are not monoliths that can simply throw their weight around at will. Rather, institutional action has its own set of internal dynamics that are contingent on the enactment of various relationships.

We built the orchard on a Saturday in April 2013. Not only was this institutional work fragile and filled with contingency, it also depended on the labor from the New Brunswick Community Garden Coalition and residents who were not community gardeners but supported the project. That day was a lot of work, and it manifested the confluence of knowledge, labor, and materials in this case. There was a high level of technical knowledge involved in planning and building this "wall of fruit" style orchard, which nobody at Shiloh or the New Brunswick Community Garden Coalition previously knew. The technical experts brought in from Cooperative Extension, the labor of those two people, residents, and members of the New Brunswick Community Garden Coalition (which included myself), and funding assembled through the sources in the account above.

It was a long day, where we spent most of it using spud bars—long iron bar with a pointed end—to break through the rubble that had been used as infill underneath the site in years past in order to set the wooden posts shown in Figure 8.11. Figures 8.12 through 8.15 show the transition of a grassy lawn to orchard through the inflow of resources locally and extra-locally.

Figure 8.12. Taking measurements before building a “wall of fruit” with 40 trees in two rows. Shiloh Community Garden is behind the fence in the background. Photo by Luke Drake.

Figure 8.13. A Cooperative Extension staff member uses a “spud bar” to break through rocky subsoil while a community gardener watches in the background. Photo by Luke Drake.

Figure 8.14a: It took several hours to dig the 18-inch post holes. Cooperative Extension faculty and staff use a gas auger to dig through the first several inches of soil. Photo by Luke Drake.

Figure 8.14b: It often required a group to break and lift out rocks and rubble in the subsoil. Photo by Luke Drake.

Figure 8.15: The author breaks rock with a spud bar while Cooperate Extension staff use an auger. Photo by Anthony Capece.

Institution-community interface: Trust and reciprocity between institutions and community gardeners

The first part of this chapter showed how institutions can work as nodes in networks of resource flows, and the second section traced how institutional actions are contingent not only on trust within and between institutions, but also on labor from the

community. This section examines how those resource flows that support community garden are actually put to use by community gardeners. This is an important point because community gardens require the continuous labor of gardeners to exist (see chapter six); even with land, water, and other materials, those resources do not guarantee a viable community garden. What happens on the community gardeners' side of those relationships, and how do institutions interface with communities?

Seeking out trusted local partners

Institutions may have the capacity to shape resource flows by directing them to certain cities and neighborhoods, but to make those resources work, they need to connect with those everyday community networks that are discussed in the previous chapter. In many cases, this is simply a practical matter—institutions need partners to implement projects, or institutional actors simply don't have the technical knowledge to do it. AtlantiCare, in southern New Jersey, actively seeks out funding opportunities for community gardens but does not directly start or manage any projects. They work with local partners to activate those resources that they are able to bring in. AtlantiCare's program director put it this way: "Our ideal is to work with another agency that can kind of operate the project. Because again, I have no gardening experience, so we really want to have somebody else operate and we can't be the 'man on the ground'" (AtlantiCare employee).

In their case, the "man on the ground" included actors that in other cases in this study are considered institutions—notably Rutgers Cooperative Extension. In Atlantic County, an extension agent had been very active in working with residents and local churches and non-profits in their community gardening work.

Beyond gardening-specific reasons, though, the more crucial point is that local partners are needed to mobilize those resources. The degree of localness is not fixed, though. That agent reflected the same ideas in her own comments about that work; she also recognized the need to find those community partners. Whereas AtlantiCare needed a local partner with gardening expertise, Cooperative Extension needed trusted leaders to enroll residents' support. For instance, the agent helped a pastor start a community garden at his church, and reflected on his role in helping her reach residents:

> Again, you really need someone that's local to talk to the people because when it's, you know, like Rutgers or somebody else trying to do it, [people are] not as receptive as [they are with] community leaders. And he's definitely a community leader. People know him, they love him. And he's really produced a whole lot from it (Cooperative extension agent).

In sum, the degree of "localness" being sought out in a partner depends in part on the type of resources being activated. AtlantiCare needed a partner with gardening expertise to implement the programs it was funding, but Cooperative Extension needed individuals that were trusted by residents in order to activate those resources and fulfill its mission within the state.

Community distrust of institutions

In places where community organizations and networks have a long histories of experiencing institutional efforts to engage community gardens and other research projects, those people "on the ground" might be skeptical of institutions making those inroads, even if there are promises of resources. Examples of this are evident among New Brunswick's community gardeners, some of whom have turned down offers of land because it was unclear if that land would be available long-term or not. At the November 2013 meeting of the New Brunswick Community Food Alliance's urban agriculture

workgroup, members brought up how certain representatives of the city government had invited some residents to talk about converting a gravel lot into a community garden. This lot is shown in the background of Figure 8.16 and is across the street from Shiloh Community Garden. It had potential as it complemented the existing community garden and apple orchard across the street.

Figure 8.16. The gravel lot in the background had been informally offered to community gardeners. Photo by Luke Drake.

That garden's coordinator, shown on the left of Figure 8.16, expressed hesitancy about the idea. "There are a few issues," he said. "Who owns the land and what kind of life expectancy can we get? [That lot] is privately owned and the word was that it was going to be developed." Thomas, another person active in the Alliance who is a long-term New Brunswick resident, was part of this current discussion with the city. He points out a similar skeptical attitude: "that's the thing—if [the city is] just thinking it'll be a one or two year thing to keep the lot clean, and here's a cheap way to get people to do it [by

letting community gardeners take care of it].” At this NBCFA meeting, the general agreement was that we would not help build a community garden if we knew it was to be a short-lived project.

Among the community gardeners in the city, we knew the risks of property development and did not rush blinded into any available project. Particularly, those people who were long-term residents or who had worked in community gardening for many years also recognized when they were just being used for a quick fix, as was evident here.

This skepticism may emerge from past experiences with institutions that have left community actors feeling used, or even left in worse conditions than before. These matters are intensified when it comes to community food efforts more broadly given the increased interest by scholars and funders in recent years. The executive director of Elijah’s Promise reflected on decades of experience with Rutgers University in New Brunswick, and told me about the tenuous relationship between Rutgers University and residents and activists working to improve food security in the city. She sees the rapid increase in interest by researchers and students in food as a blessing and a curse. On one hand, researchers can bring in external knowledge about community gardening, leading to innovative ideas and energy works elsewhere can be brought in with resources to make it happen: “people with some kind of bird's eye view of larger, what's going on in other places and models and systems and understandings of things.” On the other hand, it has been difficult for her to manage the rapid surge in interest by researchers in food systems. Paradoxically, when the Elijah’s Promise director started her work 20 years ago, it was

easier to get work done—albeit with fewer resources—because there were only a few university researchers involved in food that vied for her time:

> It was simple for us in those days, even though it was more difficult to get things done, because there were a few of us in the community doing this work. There were a couple people at Rutgers doing the work. We all knew who each other were and we worked together. More recently, there's been a few of us doing the work in the community, [but] now there's 5 million people at Rutgers doing the work. So you know, trying to keep track of everybody and what's going on in this mushrooming of activity is really exciting, and then there's also the challenge of how to harness all that energy productively so that we're not stepping on each other's toes and duplicating efforts, making things worse rather than better.

Indeed, many years ago she had worked with a Rutgers professor to start a community garden near the current one she helped start (Shiloh Community Garden). Not long afterward, though, the garden was destroyed as the site became part of the new parking deck built for the Rutgers University Public Safety building. These actions help lead to distrust but did not deter community gardeners in the city. Rather, they became more skilled at recognizing opportunities for long-term land use. Shiloh Community Garden, which was spearheaded in part through Elijah's Promise, sits atop an abandoned cemetery, for example. Knowing that no property developer would touch the site, community gardeners took advantage of that particular institutional environment and built a garden that has flourished and expanded since it began.

Trust can be regained, however, through long-term productivity and commitment, and not just superficial interest; this is made more difficult not just by the larger number of people trying to do research community gardening and related work, but also by the cyclical nature of individuals working in institutions. Researchers and employees at universities and firms come and go, not necessarily knowing the full history of what work has come before, and not sticking around to follow through. The Elijah's Promise

director takes a long view, and outlines that she does not want to see a situation where there is a well-coordinated and resourced-driven effort, but little resident input:

> It's also really important that we're looking at how do we make these shifts on the ground and make this progress and structure those collaborations and relationships and partnerships in a way that the work will be continuous, so that we don't find ourselves down the road--all the sudden we got a bunch of gardens all over town in parks and they're all overgrown, and you know we did a really good job of mobilizing staff of organizations and students from Rutgers, but we didn't engage and develop leadership among residents. So these are the challenges that we really have to look at as we're doing all of this.

In other words, she is not only interested in starting community gardens, but in securing the resources needed to sustain them over the long term. Yet she worries about university faculty and students detracting attention away from those sustainability efforts.

The case of Rutgers University and New Brunswick exemplifies such a pattern. At the core of this tension is the fact that a relationship—both real and perceived—already exists between the university and city residents. This relationship, though, is one based on unequal power as the university conducted research and service projects on, rather than with, residents. “Traditionally,” the Elijah’s Promise director notes, “there's been a disconnect between those [university] folks and the community in terms of the people on the ground who make things happen,” referring to herself and others as people living and working long-term in the city—the community brain trust.

Rebuilding trust? The New Brunswick Community Farmers Market

The case of the New Brunswick Community Farmers Market (NBCFM) illustrates how trust can be regained and how community gardens can emerge through those processes. NBCFM began as an effort by Rutgers and Johnson & Johnson to increase access to healthy produce and health education in New Brunswick. It originated

in separate discussions by faculty at Rutgers and employees of Johnson and Johnson; the two groups then connected and brought their ideas together. On the Rutgers side, faculty and staff from the School of Environmental and Biological Sciences (SEBS) and Rutgers Cooperative Extension (RCE) had been brainstorming ideas for a farmers' market in New Brunswick that could also provide health education. The director of RCE recalls, "We began this conversation about 'can we bring farmers and fresh food into this neighborhood [near Cook Campus]?' The goal was pretty simple in bringing food there, but also using that as an opportunity to be a focal point for nutrition education and health-related education efforts located at that site."

On the Johnson & Johnson side, Colleen Goggins, then-World Chairman of Consumer Products at Johnson & Johnson, told me of her interest in addressing health concerns in New Brunswick:

> I was on [J&J's] corporate contributions committee with a lot of other representatives from J&J. They started talking about the rate of obesity among the schoolchildren in NB. It was staggering, something like 46% for girls and 52% for boys, or something like that. I started thinking, it's really appalling, when you think about the fact that J&J is in large part a company known for taking care of mothers and children, and yet in our own backyard we've got this almost epidemic of childhood obesity, with all the problems that portended.

While Rutgers and J&J had separately started their own conversations about a farmers market, these conversations came together through an existing relationship between another member of J&J's corporate contributions committee and the executive dean of the School of Environmental and Biological Sciences.

> There's a guy at J&J named [name withheld] who had connections to Dean [Bob] Goodman and maybe some other people. The dean had just come to Rutgers maybe a year or two before that… We all started talking about what we would need, where would we put it, and ultimately J&J and Rutgers--and I think Rutgers was the one who got the city involved--it was sort of a three way consortium to get the farmers market up and running (Goggins).

Rutgers Cooperative Extension and the School of Environmental and Biological Sciences saw opportunities to bring fresh produce into the city after faculty had conducted research identifying food insecurity among the city's residents.

The farmers' market was on the drawing board with Rutgers and J&J, but the idea had yet to make it through J&J's internal funding mechanisms. The people interested in starting the market tapped into Johnson & Johnson's existing block grant program, which is administered each year to fund a variety of Rutgers programs. "People [at Rutgers] write proposals and compete for chunks of the block. That's where support of this market came out of the block. It turns out to be a pretty sizeable piece of the block grant because, one, they really like [the market] and they see it as a major piece of their community social responsibility. God bless [J&J's grant administrator], who has really championed this program for us with J&J" (RCE Director). The person who runs this grant program was convinced in large part because of plans that, "at the time we launched [the market], it was the only farmers' market in the country that measured behavior change" (J&J Grant Program Manager). Monitoring and evaluation is important to funders, and in this case the outcomes were measured through customer surveys as well as by monitoring the customers' use of government food assistance to buy produce.[30]

The market launched in 2009, and the next year residents spearheaded an effort to build a community garden at the site (see Figures 8.17-8.19). J&J provides more than $100,000 each year to NBCFM, which pays for the market manager's salary and benefit, wage labor for hourly workers, materials and supplies for building the market pavilion. It

[30] Known as Supplementary Nutrition Assistance Program (SNAP) and Women, Infants, and Children (WIC); also known colloquially as food stamps.

also provides funding for Elijah's Promise to purchase fresh food at the market. The community garden, named Jardín de Esperanza (Garden of Hope), drew on some of these funds for materials, although the residents who became gardeners built it themselves. The community garden more recently launched a social enterprise selling a special variety of flower for Mexican Day of the Dead celebrations and other horticultural products. How did this project go from institutional drawing board to site of community action? It involved careful attention to the way the founders framed the ownership of the market and brought in community advisors, as I show next.

Figure 8.17. New Brunswick Community Farmers Market, August 2013. Photo by Luke Drake.

From its beginning, the case of NBCFM starts not only with institutional actors' concerns to address health issues, but also with recognition of community distrust of Rutgers and J&J. The RCE Director called it a "'glass wall' between campus and the community, which has existed in New Brunswick for a long time." Jaymie Santiago, who worked as the market manager from 2009 to 2012, provides a richer description of this

distrust and how Rutgers and J&J addressed it. Jaymie was both a Rutgers employee and a New Brunswick resident; he straddled both worlds of institution and everyday life as a Latino resident in the city. He told me that residents were generally supportive of the university, but due to the history of the way the university interacted with residents, many people felt skeptical of efforts to engage them. As he put it, residents had lost a lot of trust in the university:

> I think that just like any other university city in the country, when you look at a research institution like Rutgers, we are infamous for going into the community and telling them what's wrong, and then walking out. … In the community, they think of Rutgers as a positive thing, but then there's that other aspect of using New Brunswick as a guinea pig, if you will, for all of the research projects that students must do.

Rutgers faculty and staff thus started from the idea of long-term commitment and meaningful engagement, similar to the desires expressed by non-profit actors above. The RCE director framed it as, "we want to create something sustainable there that becomes a part of the community…not like some other markets where they'll just free-run as a business, because we're trying to provide access to food, with the health and educational piece to it [free blood pressure screenings, educational materials, and nutrition materials]." The next step was to make inroads to the community.

Community engagement in this case meant not just creating awareness of the market and its services to the community, but also bringing in community members to help make decisions about the program. The market organizers formed an executive committee and an advisory committee in pursuit of this goal. The executive committee was Rutgers, Johnson & Johnson, and the City of New Brunswick, while the advisory committee comprised numerous residents, community leaders, and NGOs from around the city. The market manager, introduced above, played a key role in bridging the

university and the community. In the lead up to launching the market, he visited schools, churches, and synagogues across the city to introduce the market program and stress that it was specifically aimed at the community. This was not just to drum up business for the farmers that Cooperative Extension was recruiting to be market vendors; there were also nutrition education workshops and free health screenings to be offered. As such, there was a big emphasis on "community ownership," as many people involved in the project put it.

As the market manager, Jaymie not only worked for the university but was also a city resident—uncommon for many university researchers—who culturally identified with many of the residents through shared Latino heritage. He described his role as the manager in terms of a connection, or backbone, between the executive committee and the community:

> [The executive committee] kind of moved the vehicle, the farmers market. Then there was kind of the day-to-day, and that's really where I was the key person. I was the backbone, so to speak, between all those pieces. The backbone for the funder, the backbone for the university, the community, and this group of the advisory committee.

After the market was built and opened in 2009. He played a crucial role in making the market a popular destination in New Brunswick. He was actually the second manager, as the first one worked only a few months; she did not really connect with the community and was not a resident like Jaymie.

> I lived and breathed the community, so when I clocked out, I was still turned on in the sense that I went home and I still saw the same people. For me, I just never disconnected. I never disconnected from the community…Why I think a lot of people listened to me, is that I live in the city. To them, living in the city, speaking Spanish, and just kind of being a part of the community, kind of the same struggles as them, they really took to me.

He credits, of course, numerous other individuals and organizations that were a part of getting the market up and running. Part of this was Rutgers-led research on food security that provided supporting materials that showed a need and thus helped to secure funding for the market. Still, the manager knew the community and was a part of the community—culturally, linguistically, and academically.

> I did the grassroots. I was not only a part of the community, but I wanted to help the community. I was that person, the connection between [Cooperative] Extension and the community. Not only that, but with my background in nutrition and health, I knew what plagued the city in that area.

This open-ended orientation to the community resulted in residents building a community garden at the market site. As people starting buying produce and turning the site into a social destination, customers increasingly asked the manager about a place to grow their own produce. The manager conducted weekly customer surveys, and it was through those conversations that the residents' desire to create a community garden at the market became known: "The garden evolved from that. It evolved from the community's interest. And then me saying, 'how would you like to utilize this space as a community garden? You think people would use it?' I would ask those questions to the residents, and there was a very, very strong interest." In the market's second year, neighborhood residents, through the market manager, secured resources to build a new community garden at the rear of the market site's property. This included materials and labor to design and build raised beds and fencing, bring in soil, and extend piped water supply from a nearby university building.

Residents became market customers and then community gardeners through this institutional-community connection. The manager noticed gardeners growing lots of

Mexican marigolds—taller and a different variety than the decorative marigold common across U.S. gardens—that were a part of the Mexican Day of the Dead tradition. These flowers started showing up more and more in the community garden, which was normally used for food production (Figure 8.18). The market manager then provided additional space for gardeners to grow those marigolds.

Figure 8.18. Mexican marigolds grown for Day of the Dead in Jardín de Esperanza, Sept. 2012. Photo by Luke Drake.

From the community garden, a social enterprise followed the next year. The manager secured additional space at the site that was devoted to marigold production—in the first year they grew 10,000 plants, and in the following year it increased to 15,000 (Figure 8.19). They sold the flowers directly to residents through the farmers' market, and they also sold to retail shops in the city. Revenue went back into the community

garden as operating funds to sustain the garden site. In addition to income-generation, the marigold project also facilitated cultural expression. Not only did gardeners take part in a time-honored horticultural tradition, the market put on a Day of the Dead celebration on-site.

> We decided at the end of the year when we harvest them, we put on a small demonstration to show people what the Day of the Dead meant. Giving them that cultural connection. Giving the gardeners the sense of pride that we took interest in their traditions, and at the same time fund the community garden on a year-to-year basis.

Figure 8.19. The community garden's first area used for commercial marigold production. It has since moved to a hoop house to extend the growing season, and this space became a children's garden. Photo by Laura Lawson, Sept. 2012.

Even though it was that market manager that catalyzed the institutional-community relationship, those practices set in motion a set of norms that remained after the manager left to take a different job with a New Brunswick NGO. The market has since changed managers, but these early actions set the tone for residents' involvement in the ongoing evolution of the site. The social enterprise expanded to include sales of herbs popular in Latino cuisine, flowers, and vermiculture worms. The community garden sells these products at the farmers' market, to local retail stores, and at special events in the city; the money goes back into the garden but at this point earnings were not distributed to individual gardeners.

Even though that manager who was the "backbone" has left, the relationships and norms he was a part of have remained. Furthermore, the manager that replaced him came from Elijah's Promise—bringing a preexisting set of locally networked relationships into the position. As the director of Cooperative Extension explains, "[he] has a very good reputation in the community from his prior work at Elijah's Promise" (RCE Director).

In sum, even though institutions might carry much weight when it comes to community gardens, they do not shape the spatial distribution of community gardening solely of their own accord. This section has examined the enactment of those resources flows and the importance of trust between institutions and community gardeners—and broader community residents as a crucial part of resource flows. Community gardeners must be willing participants in institutional actions, because they can recognize and resist being exploited. Although institutions might be able to control some of the resource flows that enable community gardens, community gardeners are still needed to ultimately put those resources to use.

Conclusions

Institutional action has long been a part of community gardening across the U.S., which continues today. This chapter has examined institutions as nodes in networks that are active in clusters of, as well as individual, community gardens; I also looked at institutions-as-networks to assess the dynamics within and between institutions. The findings of this research, which included cases from large and medium sized cities across New Jersey, to suburbs and small towns, suggest that institutions have important roles by mediating relations with local government and accessing external resources. This helps shape the spatial distribution of community gardening by putting those institutional actions to work in places where they focus their attention; in this case, cities with so-called "urban" problems get institutional attention. This, perhaps, is a legacy, and reproduction, of those expectations and assumptions about why community gardens exist, which I examined more closely in chapter five—temporary relief from various sorts of crises. As I showed here, community gardeners take advantage of those norms and assumptions by seeking out institutional support and benefiting from network relations that connect institutions, local government, and external sources of knowledge, labor, and materials. This can lead to innovative and efficient practices, such as residents being able to quickly build a community garden through NGO assistance with construction and land acquisition.

Institutions do not hold inherent power over community gardeners, however, because on one hand, institutional dynamics can be contingent and fragile, and on the other hand, community gardeners can resist institutional efforts with unity. Additional cases in this chapter follow the many conversations held within and between institutional actors and the contingency in how they got others to go along with certain projects. While

some efforts by community gardeners appeared piecemeal, such as Hopatcong's search for funding, the community apple orchard built by Rutgers was also a piecemeal effort. This is not meant to devalue the project—I spent several hours digging through rock to help build the orchard—but to show that institutions do not inherently wield monolithic power. Indeed, it values the work of the community gardeners, who initially wanted the orchard and put institutional gears in motion to get it. Furthermore, there is the possibility that individuals can occupy subject positions as both community gardener and institutional employee

Likewise, community gardeners are not ultimately subordinate to institutions because those resource flows must be enacted by community gardeners. Certainly, institutions can constrain and impede gardens, as has so often happened in the past; moreover, institutions can exploit communities as they conduct research and so-called "community engagement." Furthermore, residents are not so easily turned into community gardeners by those outside interventions, however, because it takes a lot of work (see Chapter 6). Although others have argued that community gardening involves the intention to turn people into neoliberal "self-reliant" subjects (Pudup, 2008; Rosol, 2012), I have previously argued that these intentions do not always lead to actions, and resistance can simply be to not participate (Drake, 2014). This chapter shows that such actions can lead to distrust and skepticism among community gardeners, even as they work with those institutions. As such, the enactments of institutional-community networks are contested.

In suburbs and small towns, however, this supposedly easy fit between community gardens and institutions—even if contested—is unsettled as those sites seem

out of place to non-community gardeners. Without a lot of institutions, or at least, the institutions that typically support community gardens, these places lack the assets of the cities in the rest of the study. Paradoxically, then, these suburban locations have fewer community gardening assets even though they are richer in personal income. Community gardeners work harder to start up in those places, in part, I argue, because their actions challenge accepted meanings about community gardening. Since it has become associated again and again with the alleviation of disinvestment, unemployment, environmental injustice, or food insecurity, community gardens were simply not in the realm of possibilities for many people in the suburbs. Institutions are not racing to the suburbs to help start community gardens. Yet, people continue to become community gardeners—in one case, residents had been "community gardeners" for years before they even broke ground.

Community gardens can be a part of "problem solving," and as such are linked with other community development projects that benefit from institutional action. At the same time, however, this chapter unsettles some deeply held meanings about community gardening. We often think community gardens are about addressing a set of issues, but maybe people are simply there to grow food with other people. In this chapter, the counterweight of the suburban cases is telling. Rather than view them as evidence of the "mainstreaming" of community gardening, we could instead see the growing movement of people to produce and sustain commons where it is least expected—the individualized lifestyle and comfort of suburbs. As Chapter 6 shows, running, and participating in, a community garden is more work than simply making a garden in one's backyard; this

chapter shows that in the suburbs, even starting one is difficult. Again and again, people continue to do it and persist through those challenges.

Lastly, this chapter has linked community gardens with other forms of commons and other food systems projects. An apple orchard and a farmers' market were linked spatially and temporally to community gardens. One of those community gardens began selling produce, which is normally associated with another category of analysis, urban agriculture. The network analysis in this chapter and in previous chapters has identified how resource flows link together not only community gardens with each other, but with other forms of production, distribution, and consumption. In the next, concluding chapter, I return to the definition of community garden to problematize the category itself and how it helps to isolate what in practice are sites connected to local and regional economies.

Chapter Nine: Conclusions: Toward a relational conception of community economy

Scholars, activists, and practitioners increasingly point to the emergence of forms of production, distribution, and consumption that foreground ethical and equitable relationships with other people and the environment. This dissertation has examined community gardening, a practice that has expanded both geographically and in the public's eye in recent decades. Although much has been written about the causes and outcomes of community gardening, little research has actually shown how community gardens function in terms of economy. The processes through which people learn about community gardens—how to start and manage these collective garden spaces—is often lost in the search for essential causes and effects.

As I have shown in this dissertation, such approaches to community gardens render these sites merely as reactions to dominant political-economic forces—means to an end—and hide any dynamics that might connect garden sites to each other and to partners locally, regionally, or beyond. Furthermore, dominant approaches mute the economic production and distribution that occurs in community gardens; as a variety of scholars working in the alternative and diverse economies literatures have pointed out, the economy includes much more than conventional capitalist firms.

I took a network approach in this study to trace the flows of resources that help build, sustain, and change community gardens. My approach was grounded in the theory of community economies (Gibson-Graham, 2006), drawing on previous research that examined how food production in community gardens was influenced by a concern for community well-being (Gibson-Graham et al., 2013). Community economies theory has

been largely built on studies of individual firms and sites; much work has focused on economic subjectivities and the processes through which people come to think of themselves as economic actors. Furthermore, the ethical decisions that comprise community economies have been systematically laid out in several studies and theoretical interventions (Gibson-Graham and Roelvink, 2010; Cameron et al., 2014).

Such literature has expanded our knowledge of existing, and possible, economic alternatives. There has been little theorization, however, of the local or regional dynamics constituted by community enterprises; other branches of economic geography have long explored clusters and network processes among capitalist firms and industries. The focus in community economies research up to this point has been on individual sites and not as much on the networked system of flows that may or may not connect them. It is thus unclear how community enterprises might be a part of an actual community economy. As a result, there is a demonstrated need to examine the relational dynamics of community economies.

To this end, my theoretical framework draws on relational economic geography (REG), a parallel strand of work that explores the link between local contexts and broader spatial flows and how intersections between the two shape the geography of economic action. Scholars using an REG approach pay close attention to context, contingency, and path-dependence in the capitalist economy, themes that resonate with a community economies approach. As I discussed in Chapter 3, some effort is required in order to bring REG in conversation with community economies, particularly because monetary profit is not the only goal in the latter. I bridged these two literatures by answering two questions addressed at both theoretical models—what flows through networks, and how

are these flows configured? In both literatures, knowledge, labor, and materials flow through networks, and these flows are configured through processes related to institutional action, place-making, and trust and reciprocity.

From the conceptual model in Chapter 3, I examined places that foster community gardens, along with their internal and external dynamics. My findings suggest, in theoretical terms, that a community economy site is not a discrete unit but exists through inflows and outflows of resources, connecting the site and the people working in it with places near and far. Such sites often result from everyday relationships that build trust and reciprocity through a demonstrated commitment to community well-being. The local capacity that is developed through these processes is supported by flows of knowledge and other resources from outside the area that foster innovation and lend a sense of a "bigger picture" to practitioners' efforts.

What places foster community gardens?

My first research question—what places foster community gardens?—emerged from observations that community gardens appeared to be popping up all over the place. A glance through community gardens literature, however, suggests that the "home" for these sites is large, dense, and cosmopolitan cities. In places like New York City, Berlin, Los Angeles, Toronto, and the San Francisco Bay Area, there are supposedly the right mix of factors that facilitate community gardening. High density living means that anyone hoping to grow food must usually find some type of community open space to do so. Pockets of poverty and "food deserts" mean that poor urban denizens must resort to growing their own food in order to get fresh produce. And the community activism that is found in such cities is a natural precursor for people to take collective action in securing

and maintaining garden space. These are the contemporary contexts that frame community gardening—and those contexts have become conflated with an essential nature of community gardening, too.

Chapter 4 revealed that although community gardening is alive and well in those cosmopolitan urban centers, it has also found a home in suburbs, small towns, and even rural areas. With this diversity, it is wrong to make sweeping judgments about an essential nature of community gardens where those judgments rely on claims about causes and outcomes. For instance, to claim that community gardens emerge because of poverty or to address poverty, one only has to look at the rapid growth of gardens in middle class areas to see that this claim is not universal. Indeed, one of my interviewees, a middle class community gardener, was surprised to learn that there were over 100 community gardens in Camden, New Jersey, one of the poorest cities in the state (and the nation). Put simply, community gardening is not a singular movement.

Looked at broadly, the diversity of geographical contexts renders certain causal explanations about community gardens partial. Perhaps the best general statement one can make about the causes of community gardening are that people want to grow food, and for various reasons they end up doing it with other people. This is incredibly vague, though, and lacks the explanatory suaveness of commentators who claim to have found what community gardening is really about. If we look at *how* community gardening works, as I have done here, we start to see more about the places that foster them.

Ironically, one way that community gardening works is through discourses around the intentions and outcomes of community gardens, as I discussed in Chapter 5. There is a long history of community gardening in the U.S., and that history has been

accompanied by normative discourses that frame community gardens as means to an end, rather than a normal part of everyday life. These narratives originated with institutions such as local government, charity organizations, and large firms, who were indeed responding to changes in the mainstream economy. Certainly, there were food shortages and unemployment in the late 19th and early 20th centuries that community gardens helped address—I do not deny the multiple positive outcomes of community gardens Yet, the pamphlets, letters, and memoranda that I examined from that era only display those institutional organizers' intentions, and not the gardeners' experiences. Indeed, a critical reading of those materials reveals ulterior motive such as preventing riots, keeping unemployed workers from moving away in search of jobs, and reducing the burden on charities.

My point here is not to use that critical reading to dismiss the work that community gardens do, but rather to make it clear that historical actors created a narrative where community gardens are an exception, not something to strive for. Those stories have become naturalized to the point where today, community gardeners reinforce the "means to an end" discourse when talking to people outside the community garden. When trying to get resources, they must advocate by stating that their garden addresses sustainability, poverty, food insecurity, or a range of other outcomes. Among themselves, however, community gardeners often just talk about their love of gardening and their experiences in doing it collectively.

What do these reflections on discourse say about the places that foster community gardening? Here, a key takeaway might be to elaborate instead about the places that *sustain*, rather than simply *start*, community gardening. The places that sustain

community gardening are those places where it has become clear to more than the gardeners that these are integral activities to community well-being rather than simply a stopgap solution. New York City and Seattle, for example, have begun committing public resources to the long-term success of community gardens. Going back to my earlier comments about where one expects to find community gardens, these two cities should not surprise anyone—they are the cosmopolitan urban centers where one would expect to find such innovation. Yet there are other unexpected places that sustain community gardening.

The efforts by what I have called community brain trusts (CBTs) and by government-community partnerships in suburbs also show the type of places that foster and sustain community gardening. In the cities I studied in this dissertation, the collective efforts of community gardeners to engage each other and seek out resources builds a capacity that helps sustain gardens through challenges they might experience. It also attracts the interest of external actors—such as when The Nature Conservancy called me about the rise of community gardening in New Brunswick.

Suburbs are at first glance quite difficult places in which to start and sustain community gardens. This is for many people a result of those discourses and expectations about where they are located and what they are trying to address. Many of the suburban gardeners in this study related stories where neighbors and government officials resisted the idea of a community garden in their town because it was something that belonged "in New York City," for example. Yet, once a community garden is established, and if it succeeds in attracting people and serving as a social space in addition to a food production space, community gardeners can show that they improve well-being and are

not just reacting to some underlying problem. The case of East Brunswick Community Garden, for instance, encountered such initial resistance but has since become an important place in the town. Local government has, in turn, provided additional services to the garden such as composting and financial assistance.

In sum, the places that foster community gardening are places where there is strong communication between garden sites, and between gardeners and institutional actors. In cases where there are few community gardens to form those bonds, such as suburbs, once community gardeners show that they have created a site that is an integral part of the town's fabric, local authorities aid in helping to sustain and innovate community gardens. Communication, sharing knowledge, and working to rethink community gardens as everyday sites—places with these characteristics foster community gardening.

Community gardens as relational and performative spaces

To judge a community garden by the area covered by its borders is to miss its network geography that links it to other places; to see it as passive space is to overlook the continuous work that gardeners perform to sustain it. In other words, community gardens are both relational and performative spaces. These two related geographical themes are evident in this study in the way that gardens are produced, on the one hand, through inflows and outflows. On the other hand, those relations must be enacted. Taken together, the internal and external dynamics I have discussed in this study make this point.

Critics of post-structural thought have questioned the usefulness of "relationality" talk—yes, geographical phenomena are contingent, but what difference does it make

(Jones, 2009; Jacobs, 2012)? In my discussion of community gardening across New Jersey, I have shown how the community garden, which may appear small amid the rest of an interconnected capitalist urban fabric, is produced through relations that extend beyond the gardens' borders. These relations are not just limited to intimate ties within a community, but draw together NGOs and other alternative enterprises near and far. It also is not just an array of broader forces bearing down on a neighborhood site—garden outflows are equally important in this process, and in one sense the relationality of the garden would be incomplete without looking at the effects of the garden that extend near and far as well.

Knowledge inflows

What are some examples of these inflows and outflows? Knowledge in various forms—know-where, know-how, and know-who—converges with various people involved in building and sustaining a site. Working in a city or a neighborhood with a long-term commitment, which means not just coming in for a one-time project, helps develop know-where as people interact to figure what makes a place "tick." Know-how is sourced through written texts, and as such can travel long distances, but it is taken up more effectively if learned face-to-face. Know-who, the knowledge about social networks, is the gateway to resources and getting things done; not just anyone gains access to those knowledge networks, however. What ties these types of knowledge together is a concern for the well-being of the place, which people prove through perseverance, reciprocity, and trust.

Labor inflows

Labor to build and sustain gardens has a network geography that is spatially distributed across neighborhoods and cities. On the one hand, this work primarily comes through the gardeners. They do not necessarily live in close proximity to their garden, however. Through a participatory GIS project in Chapter 7, I found that they can be clustered close to the garden, or distributed across an area. These patterns are not random, though, but are shaped by the way that any given garden is integrated into other social networks in a city. While some gardeners simply find out about their site by walking by it, others initially learn of theirs through participation in other sets of social networks that bring their attention to the community garden.

It is not just gardeners' inflows of labor that support the gardens; labor is also sourced through institutional ties and community brain trusts. Often, there special projects that call for increased amounts of labor. Whether it is too much work for gardeners to do on their own, or they are simply too busy with other aspects of their lives, those extended networks are crucial for bringing in additional labor. Furthermore, at times labor is tightly linked with knowledge—in the case of the community apple orchard, the technical advisors from cooperative extension found it easier to teach by doing. This example of tacit knowledge underscores how certain resource flows are intimately connected.

Materials inflows

In terms of the inflows of materials, they range from soil and tools, to water, to financial support; they are acquired locally, regionally, or beyond. These flows can be highly uneven, as shown through the example of water access as first discussed in

Chapter 8. Whereas the use of rainwater cisterns is linked to concerns about environmental stewardship, the common practice of using fire hydrants to fill up rain barrels comes down to a lack of access to municipal water supplies. Given the historical narratives that have so often relegated community gardening to take place on "vacant lots" (see Chapter 5), these lots are frequently not connected to water mains or have faucets for watering plants. Lots that have never been built upon, such as rights of way, literally have no connection to water supply; others that might have water meters might not have proper infrastructure within the site to water crops properly. To address these concerns, community gardeners devise a number of ways to access water, which involve reaching out to community and institutional partners locally and beyond.

Outflows

Community gardens are not, however, just the product of external flows bearing down on a piece of land. They are produced through outflows from the garden to other places as well; food production is shaped by distribution and consumption. Gardeners are there for reasons too diverse to simplify in a study like this, but one of them is to produce food. That food goes somewhere, though, and is eaten. Whether it is the gardeners taking it home or distributing surplus to a variety of other locations, those outflows keep the gardeners coming back again and again. Indeed, if the food did not leave the garden, it would quite literally become a mess as rotten vegetables would pile up on the ground or in compost piles. And so the outflow of materials is a basic necessity to sustain the garden and gardeners' spirits and health. It is more than materials that flow from the garden, though. As they become entwined in broader networks, community gardeners

share the knowledge they've learned with other gardeners in other places, and they contribute their labor to helping build and maintain other garden sites.

This outflow of resources, in turn, builds local and regional dynamics and invigorates gardens who return to their sites with additional lessons learned and increased morale to innovate their gardens. After my data collection ended, the New Brunswick Community Garden Coalition began planning a tool and labor sharing program. Certain tools and equipment that are used infrequently, such as rototillers, are shared between gardens so that each one does not have to purchase one of their own. Labor sharing, which had been happening informally, started to be solidified. It was facilitated through a shared online document that tracked which gardens needed additional labor for certain projects. The coalition also began building a software application to coordinate surplus food donations to food pantries. Regionally, there are not the everyday interactions to the extent found locally, and here it is knowledge that is the key mechanism. Community gardeners shared knowledge on site visits and at workshops as they met each other in various cities (Chapter 7). One garden's inflows can be another's outflows, and these connections help constitute the local dynamics of a community economy that could extend to other alternative enterprises. Inflows and outflows are constantly moving and shifting, and although they might challenge the longevity of a garden they are most certainly a fundamental component of how the exist in the first place.

Network configurations: Four examples

The connections between community gardens and the organizations that support them show that they are integrated into broader networks. It is just that an individual community garden is produced through inflows and outflows; gardens, community

organizations, and institutions comprise an interconnected system. My findings suggest, however, differences in the ways these networks are configured. Four types of networks that stand out in the study are described below and visualized in the diagrams of Figures 9.1 to 9.4. They represent four ways that resources flow between community gardens and through them to other places. Ties between garden sites, however, can be direct or indirect depending on that configuration, gardens might connect more or less with each other than with external NGOs, for instance.

Centralized Distribution

In the first network, local NGOs act as central hubs, distributing resources to urban farm and garden sites. Following my analysis in Chapter 8, given their close relationship with community gardens and everyday interactions, I differentiate these NGOs from institutions in order to reveal the way that resources flow to community gardens. Isles in Trenton, and the Greater Newark Conservancy (GNC), as discussed in Chapters 7 and 8, are examples of these hubs. In these networks, individual community gardens connect indirectly with one another through the work of the central hub. Isles and GNC distribute resources to the community gardens, such as legal advice, technical consulting, educational workshops, and seeds and seedlings. Through close relationships with government agencies and funders, they are able to act on behalf of community gardens to access land, water, and other materials that may be difficult for a single garden to do on its own. Community gardens are not directly managed or owned by these NGOs—gardeners pay fees to receive services such as maintenance, seeds, and educational workshops. In the case of Isles, each garden pays a yearly fee, and with GNC, each garden pays a flat fee for a range of services.

At GNC, these services include labor needed to build and maintain the garden site, such as weeding and mulching. The staff person in charge of that program explained it as a way to help out those community gardeners who did not want, or could not, take care of site maintenance. Given the challenges with sustaining this type of labor found in Chapters 4 and 6, gardens can outsource this labor to GNC to help gardens run more smoothly. At the same time, however, this collective labor is part of what builds community gardeners' sense of community and is an important part of the internal dynamics. The shift of this collective labor from the gardeners to an NGO is unclear in its effects on the internal dynamics of the garden, and further study is needed to understand it. The way the GNC staff person sees it, gardeners can still work collectively on other tasks such as social events and food distribution, but at least there is a working garden to start from.

In this sense, community gardens in this type of network are not just performative through the work of the gardeners but also through the NGO's labor as well. Relationally speaking, they are not self-contained entities but thrive through the inputs of knowledge, labor, and materials from outside the garden. What is not clear in this type of network, though, is if there is any connectivity between community gardens. The NGOs host events that bring together gardeners as a way to foster community-building between gardens, but it is not clear whether those links will stand on their own; in this network configuration, cross-linkages are not a central objective. Those links between gardens become clearer in the other types of networks.

Recirculation

The second type of network is premised on the recirculation of resources within a local milieu. Here, a collection of urban farms, community gardens, and NGOs form a closed-loop value chain; for instance, farms supply seedlings to community gardens, who then sell surplus produce to local restaurants and distribute food to churches. Like the first type, an NGO is at the center of these efforts; the example used in Chapter 7 is Come Grow with Us! (CGWU). In this case, a central hub is not just distributing resources out to community gardens, but deliberately coordinating the circulation of resources among community gardens and a variety of other food and agriculture enterprises. Recirculation networks build local value chains, instead of relying on unidirectional resource flows. This network might not carry as much weight with large institutions like the Isles or GNC, but there is a more concerted effort to create an economically diverse local food economy.

Coalitions

The third model is in the form of coalitions, where members share resources and take political action. The New Brunswick Community Garden Coalition (NBCGC), covered extensively in Chapters 7 and 8, is the case used to draw out these conclusions, but there are community garden coalitions in other New Jersey cities such as Newark that I was not able to document. In this type of network, community garden organizers and managers focus more on building relationships between gardens. These relationships form the foundation on which flows of knowledge, labor, and material flows are based. In the NBCGC, one of its founders had the goal of building a community garden movement in the city, which he felt would only be possible once community gardeners knew about

the presence of other gardens and got to know gardeners from those other sites. In contrast to the first two networks, coalitions' starting point is to build relationships between gardeners.

In the NBCGC, we initially relied on educational workshops like seed saving, winter sowing, and composting to do that work. This then expanded into a citywide community garden orientation each spring, where we used a standard membership agreement for all of the city's community gardens; at this event, we covered the basics of how community gardens work so that new gardeners would understand their responsibilities. Its work has expanded and become more complex since then. As I mentioned above, the coalition has begun planning a tool and labor sharing program between the city's gardens, as well as a smartphone application to coordinate food distribution from the city's gardens to local food pantries. Additionally, the City of New Brunswick, after months of discussions between community members and city officials, recognized the coalition as an official entity in the city.

In this way, coalitions do similar work as the other networks in facilitating resource flows. They start from a foundation of grassroots relationships among community gardeners, however, and then reach out to other types of enterprises and institutions. Unlike the first two types of networks, it takes more times to access and circulate resources, but the underlying goal is to build a strong network of gardeners that can weather any changes that may affect access to resources.

Virtual network

The suburban community gardens I encountered in my research do not fit neatly under the previous three types of networks. Although my findings show that suburban

community gardening has expanded quite a bit, there is still not the spatial clustering that fosters networks that are configured around centralized distribution, recirculation, or coalitions. Still, suburban community gardeners demonstrated the desire to connect with other sites. Two examples discussed in Chapter 7—the "sister gardens" and the Facebook group—show how virtual networks help share knowledge, and in some cases labor, over the Internet. The communication that occurred between community gardeners in New Jersey and Australia, for instance, alleviated some of the stress that comes with managing gardens and gardeners and provided a place to blow off steam without risk of offending anyone. The work that went into crafting grant proposals took this network further by showing how surplus labor can be distributed over long distances to help advance local projects. This work also blurs the line between explicit and tacit knowledge, with the latter usually presumed to be done through face-to-face interaction. Nonetheless, the lack of everyday interactions in a geographical place hinders the momentum that is shown in the other networks.

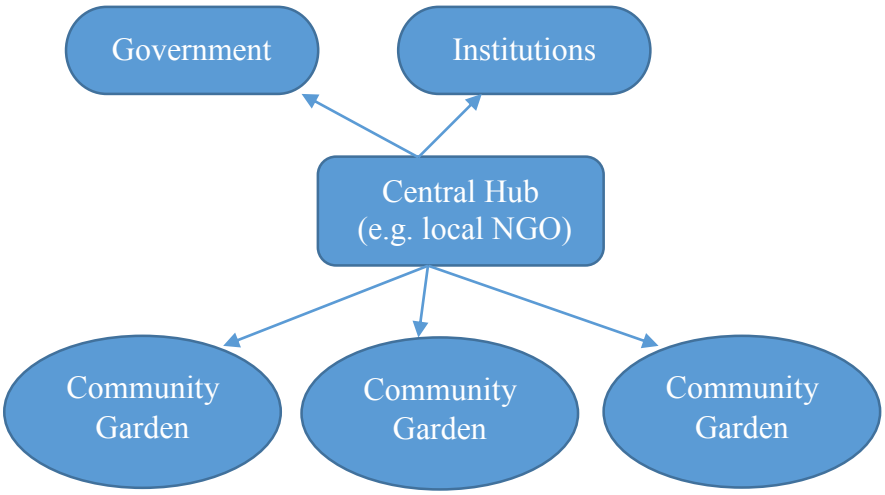

Figure 9.1. Central distribution network

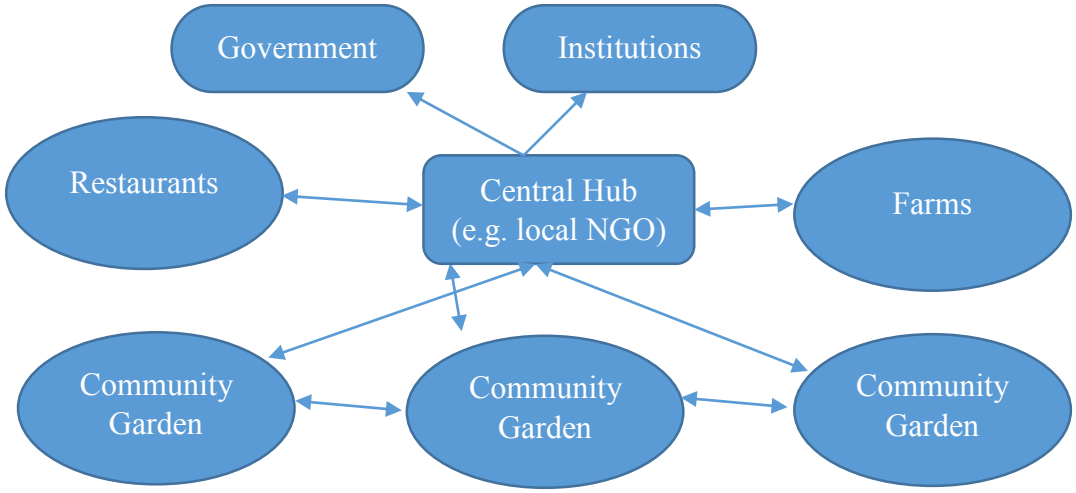

Figure 9.2. Recirculation network

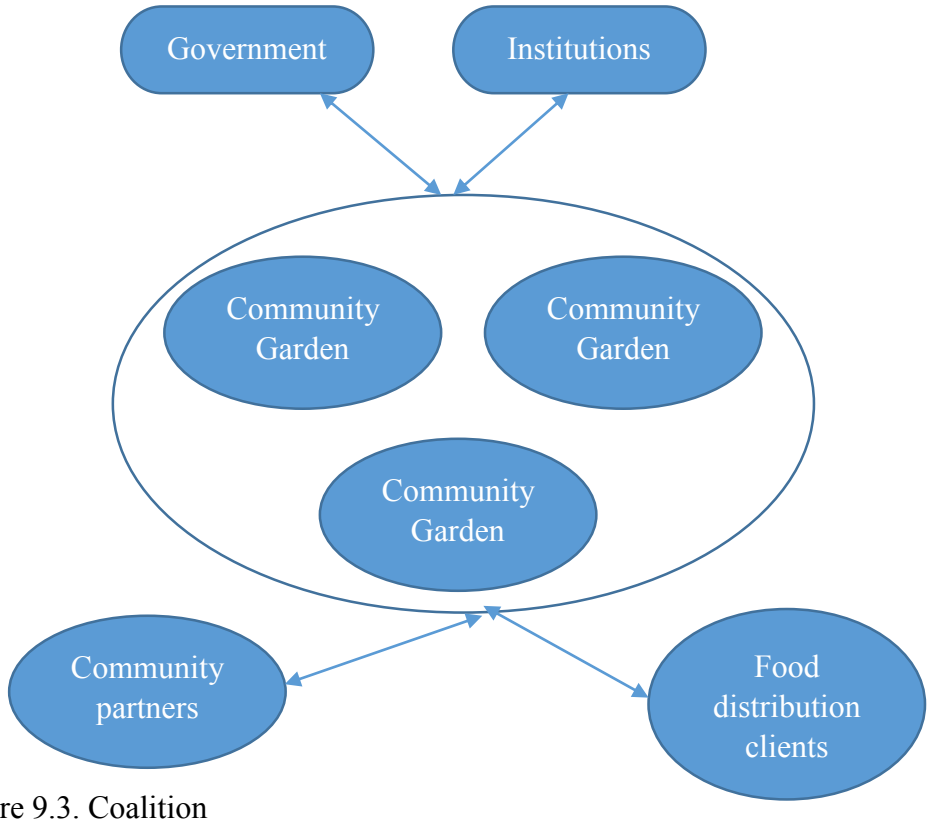

Figure 9.3. Coalition

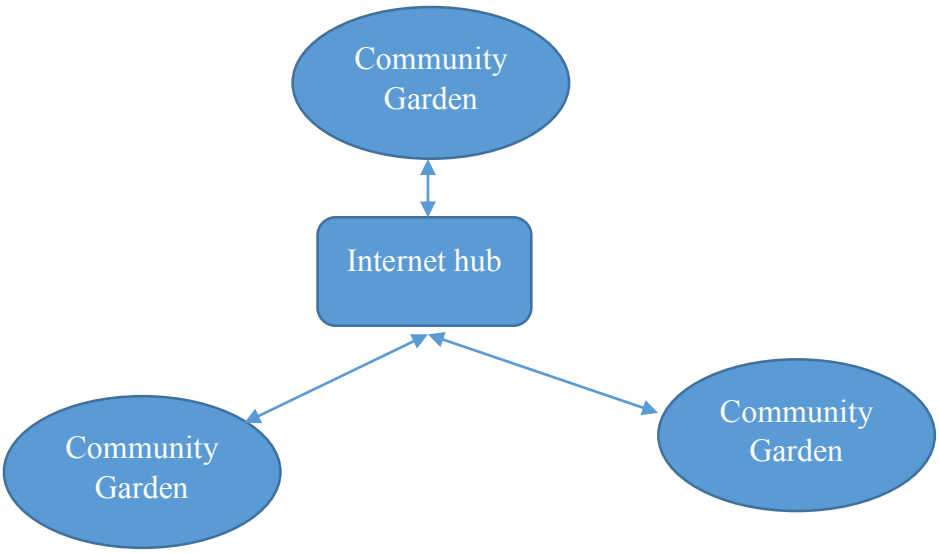

Figure 9.4. Virtual network

The role of networks: Building community economies theory through relational economic geography

Taken together, this dissertation contributes to the community economies approach, and theory of alternative economies more generally, by examining the relational dynamics of such enterprises. It has broadened the analytical scope of these fields by showing how local and regional economies might form around notions of equity, cooperation, and well-being. In doing so, I have developed a new ontology of the alternative enterprise—one where it is not just a lone entity amidst a vast sea of mainstream economic processes. Whereas existing research has indeed shown the sheer magnitude of economic diversity, this dissertation explains how those individual sites are formed through connections near and far, and how they might configure sets of relations that enable alternative economic practices to spread to other places. My analysis reveals,

for example, how the circulation of knowledge, labor, and materials, along with the connections to community organizations and institutions, shapes the spatial distribution of community economies. In sum, this work re-casts the community economy site not as inherently insular and but with its own set of expansive dynamics, and local and regional community economies not as a collection of fragmented sites but as a complex web of flows embedded in place.

The relational and performative action, which is configured in ways shown above, brings me back to a problem I raised in the first two chapters of binary representation. In the literature and often among practitioners, there are binaries that separate community gardens from urban agriculture and community from economy. These representations render community gardens fragmented, insular, and non-economic. By drawing on diverse economies theory, it was a fairly easy task to find the processes that make community gardens sites of economic production; as in other diverse economies research, the individual garden site showed an array of decisions around surplus labor.

The central question of this dissertation, though, is about the role of networks in producing those sites. By tracing network flows, I found that community gardens are not just connected with each other, but directly and indirectly with other forms of food production and cooperative enterprise. Chapter 4 showed that the types of organizations involved in community gardening range from the small neighborhood group to state-wide associations and government agencies. Chapters 7 and 8 showed how local networks bridge different types of food production. Many of the organizations I encountered in this study—Isles, the Greater Newark Conservancy, the New Brunswick Community Food Alliance, and Grow it Green Morristown, for example—work with both, as they call

them, community gardens and urban farms. While those organizations do seem to consider gardens and farms as separate entities, they still draw them together as part of local food network dynamics. Come Grow with Us!, however, deliberately merges "community" and "commercial," by introducing community-produced food into local supply chains. Their work more clearly unsettles a garden-farm binary, while the others clearly show how community gardens are part of local networks.

Networks spur innovation and increase the capacity to produce and sustain gardens, but challenges also come along as well. Through their connections in these networks, gardeners and other practitioners are able to learn from the experiences of others, access materials such as land and water more easily, and rely on labor drawn from other sites. In contrast, those community gardens that do not have the advantage of clusters often learn only from their own experience, which the virtual cluster seeks to redress (Figure 9.4). Moreover, while it is somewhat easy to establish initial connections in one of the four network types, it is more difficult and time-consuming to gain meaningful access to those connections. Part of this difficulty lies in the way that some networks guard against exploitation, and thus there are different degrees of access and acceptance. One example of this is when the Urban Agriculture workgroup of the New Brunswick Community Food Alliance resisted the City of New Brunswick's offer of a plot of land in Chapter 8. To protect against individuals and organizations who might be out to exploit others in the name of "community," it is important to show that you are working for the community and not your own self-interest, as interviewees in Chapter 7 made clear. By working day after day and proving to others that personal gain is not the first priority, one simultaneously contributes to local networks and gains access to them.

Furthermore, the spatial configuration of these networks can change over time as individual actors change jobs or relocate, which can shift resource access. In Chapter 7, for instance, the new manager of the farmers' market at the end chapter brought his own network connections that he had built in New Brunswick with him. In this way, the market continued its work in community engagement but through a different set of network connections. Likewise, when two or more nodes completely move into or out of a local area, this can change local dynamics. Again in the case of the New Brunswick Community Farmers Market, explained once more in Chapter 8, a dean at Rutgers and a philanthropy officer at Johnson & Johnson had known each other in previous careers in other places. After both became involved in institutional actions in New Brunswick, their existing relationship and played a role in starting the farmers' market. Amidst all the other institutional and community networking going on, it would be unwise to say that this relationship singularly drove the market. This relationship had to be interwoven into local institutional networks through reciprocity and trust, and the ensemble of institutional actors had to be careful, though, to maintain a community focus throughout, carefully building trust among neighborhood organizations, churches, and schools. In sum, connections between nodes are built through everyday actions embedded in place; once built, those connections can travel and may even be transferred to other places through a re-embedding process.

Knowledge flows in community economies

Flows of knowledge, labor, and materials that constitute internal and external dynamics also give a glimpse of what might be local and regional community economies. Knowledge, though, has emerged recently in a range of fields including economic and

urban geography and political ecology as a key relational phenomenon that is just beginning to be understood (Murdoch, 2006; Bathelt and Glückler, 2011; McCann and Ward, 2011). In community economies, the question of knowledge flows is complicated by the way that practices are embedded in place, which can make those practices all the more difficult to share and be taken up by people elsewhere. Certainly, there are horticultural aspects of community gardening that are easily written and shared. Other questions, though, depend on the group of people that will be doing the work and the place they are doing it: how to organize collective labor so that gardens thrive, who are the best contacts to make to get materials, whether and how to distribute surplus food. These few examples suggest that tacit knowledge, which is not easily transferrable over distance, is important to economic decision-making. How, then, do local and regional community economies form in this context?

The local circulation of knowledge and those flows extending beyond localities together support production and innovation in community economies. This is perhaps most evident in the ways that external knowledge is acquired and integrated into local networks. While know-how can be written and transferred over distance—for example, a "best practices" in community gardening or even a handbook on community economy (Gibson-Graham et al., 2013)—the crucial point is how such explicit knowledge connects with and informs place-based tacit knowledge. Research that residents in New Brunswick did on food policy councils (see Chapter 7) guided their efforts but was ultimately incorporated into the already existing network structure in the city. Furthermore, community gardeners travel to other places in order to learn technical skills such as composting—which can be learned through books or online for much cheaper than travel

costs—but also gained intangible benefits such as encouragement and increased morale by meeting people doing similar work in other places.

Tacit and explicit forms of community economy knowledge do not make a simple binary, either. This distinction is important in the relational economic geography literature for the way it explains clustering. Yet my findings show that in certain instances, tacit knowledge is shared through the transfer of explicit knowledge—for example, through site visits—and at other times community gardeners more easily separate them, such as when the New Brunswick Community Food Alliance gathered reports about food policy councils. Through site visits, individuals sought explicit forms of knowledge on topics like composting but also benefited from the encouragement in seeing people doing similar work in different places. In gathering research and reports, however, the lessons learned from other places are made to fit into existing network configurations instead of replacing or modifying them.

Perhaps the critical point here is not what kind of knowledge is able to travel and what is fixed in place. Rather, the importance is in how that knowledge travels and is taken up. Face-to-face meetings, written reports, and telecommunication certainly mark the characteristics of clusters versus more extended connections; certainly it is more difficult to share tacit knowledge via written texts. The flow of tacit and explicit knowledge is bound up in ways that differ from that explained in the REG literature. While the conventional REG literature points out that “temporary clusters” can form through conferences, thus building relational proximity, there are different mechanisms at work in my findings. When community gardeners visit each other in different neighborhoods, cities, or states, it is not a temporary cluster but a temporary embedding

in place that occurs. Likewise, what works in one place simply might not in another given the local variations in how communities and institutions interact. For community economy, the contexts of knowledge flows matter as much as the specific type. What is the history of reciprocity and trust (or distrust) between those actors? What else is gained or lost—such as intangible support and encouragement—when knowledge is shared? Are local network configurations able to incorporate new knowledge or must they be reconfigured in some way?

Policy implications and future research directions

These questions all relate to the way that community gardeners, like others engaged in community economy, are not necessarily interested in competitive advantage but in working for the community (however defined) as well as to build and expand the shared practice of community gardening. This points to policy implications that are somewhat different than that of the REG literature. In that work, policy recommendations tend to reflect a desire to attract firms to a city or region. My findings suggest that the policy implications of a relational conception of community economy are less about attracting community enterprises from other places than improving network capacity among existing enterprises, which may help to build community economies from assets that are already in place.

This does not mean, however, we should focus solely on local matters to the exclusion of connections that may reach across regions. Although critiques of asset-based community development and local food systems have argued that such approaches can lead to isolationism and an uncritical vaunting of the local scale (DeFilippis, 2004; Born and Purcell, 2006), community economies theorists argue that local development should

not rely on external investments as the primary method (Cameron and Gibson, 2005a; Gibson-Graham, 2005). My research contributes to this conversation by showing the complex network mechanisms that connect actors within a local area and across regions. In working toward a relational conception of community economy, the policy implications are thus that building networking capacity is more significant, albeit far more complex, than simply seeking to attract community enterprises from elsewhere.

This could be done by encouraging institutional environments that facilitate communication and resource access so that people in a locality can learn how to start and sustain successful community enterprises. Such network capacity can link existing enterprises and spread awareness of those enterprises to a public who might not otherwise know about them. Local clusters can connect with each other, and in that way forge regional networks. After my research ended, for example, somebody from the nearby city of Perth Amboy contacted me to learn about how the New Brunswick Community Garden Coalition operates; he was trying to start a coalition in his city and wanted to learn how he might connect the various community gardens there.

In sum, this dissertation lays the groundwork for future research on a few different themes in community economies research, as well as related themes in urban geography and political ecology. A better understanding of regional community economies is one promising direction. This dissertation focused on community gardens but through its network approach connected them to other food-related efforts such as commercial urban agriculture, farmers' markets, and food policy councils. In that sense, the work was restricted to one industry. A more comprehensive account of a regional community economy would examine how a variety of community enterprises,

cooperatives, and other forms of production connect that provide a range of goods and services to their communities. Efforts are currently underway to map regional solidarity economies, and after the locations of such enterprises are known their regional dynamics should then be understood. Second, urban water access emerged as a critical theme in my research that is underexplored in the literature. Although land access is the focus of much critical urban agriculture research, my network analysis revealed that getting water to a community garden site, and distributing it throughout a garden internally, can be quite difficult. Vacant lots, which are often the source for gardens, might not have piped water available. Even in cities with agricultural zoning (Goldstein et al., 2011), urban farmers might pay more for water than rural farmers because they are charged higher residential rates.[31] Within a garden site, water hoses can be dragged over plants and damage them, yet buckets drawn from rain barrels can be too heavy for some gardeners to lug across the site. In short, the spatial distribution of water across cities *and* within garden sites is uneven and is a function of the built environment, the institutional context of regulation, and the micro-politics of a community enterprise. Further research can use a network approach to understand the dynamics of regional community economies and how the actors within them get the material inputs needed to do this work. Inputs, however, are only part of the story. A value-chain analysis of upstream and downstream connections can provide a picture of regional community economy through a network perspective.

[31] This point was raised by an urban farmer I visited in San Francisco in 2012 on a field trip of the American Community Gardening Association.

Closing remarks

The seeds of this dissertation were planted when I learned about a community garden in New Jersey that had a "sister garden" in Australia; the two gardens had worked together on multiple projects, yet the New Jersey garden had few spatially proximate connections. Through the course of my research, I came to know community gardeners in a variety of locations that at first reflection thought they too were "going it alone," but upon further discussion uncovered their own network dynamics. I also took part in building those networks, which can at times be a slow and bumpy road. Indeed, there was often little to guide us on network dynamics except our own experience. What emerged, though, was that local and regional networking can become more than the sum of individual sites. Getting gardeners together in one space requires collective labor; when gardeners from different sites work together, this collective ethic is multiplied.

The geographical ubiquity of community gardening suggests that this is not a singular movement with a common set of intentions and outcomes. While seeing a vast array of points on a map does much to reveal the desires and persistence of people in producing food in the commons, such mapping does not explain how these sites spread and how people get the necessary resources to do so. To that end, I examined the network dynamics to understand if community gardens are really just small disconnected points amidst a vast urban landscape or if they are integrated into that landscape in myriad ways. Despite the heterogeneity in purpose, motivation, and intention, there is nonetheless a larger set of dynamics that community gardens constitute when examined together. They do not necessarily have to align together as a singular movement to constitute an interconnected system with its own agency. Seen this way, community economies are not just filling a gap or a means to an end, but can be integrated into people's lives much the

same way as the conventional economy. In that sense, we have only just begun to understand the network dynamics of community economies.

Appendix A: Survey questions

Please provide information about the organization you represent in your answers.

Organization/A

gency: Your

Name

(optional):

Your title or position (optional):

Address (street, city, province/state, postal

code): Phone:

Organization's website:

Please define the area your organization serves

If your organization works in a particular neighborhood or section of a city, please give the name of the area, city, and state. If your organization works in a city or county, please indicate this along with the state.

Garden and Site Information

For the purpose of this survey, a community garden is defined as land set aside for community members to grow edible or ornamental plants. The land may also include active or passive recreation space or other amenities.

How many gardens does your organization serve in all?

Of these, please indicate their land status:

Number of gardens on property owned by your organization
Number of gardens on property within a land trust (if other than your organization)
Number of gardens on public land
Number of gardens on private land
Number of gardens without known land status

Do you have waiting lists for garden plots?
Yes

No

If yes, how do you handle the waiting list?

In addition to the gardens your organization works with and you listed above, are there other active community gardens in your community/city?
Yes

No

If yes, please estimate how many additional gardens are located in your community/city.

Please list organizations that we should contact to find out more about these gardens. (Please include organization name and contact information)

In the 1992 and 1996 community garden surveys, data was collected on "types" of gardens. We have included the same question in order to compare results. Please write down the number of gardens your organization works with in each of the following types. Although some gardens may include more than one of the aspects listed below, please answer based on the DOMINANT aspect of the garden.
Neighborhood Gardens
Senior Center / Senior Housing Gardens
Public Housing Gardens
School Gardens
Church Gardens
Large "Farm" Sites with Plots
Job Training Gardens / Youth Economic Development / Community Supported Agriculture enterprises
Therapeutic Gardens / Mental Health Gardens
Gardens that equally address more than one of the types above (if so, please explain below)
Other (please list number and type of garden):

Please use this space as needed to explain any of your answers above.

Comparing the last five years (roughly 2007-2011) to the previous 5 years
(roughly 2002-2006), the rate of new gardens being created has (select one):

Increased

decreased stayed

the same

In the past 5 years (2007-11), how many new gardens has your organization assisted or helped to establish?

Of these gardens, please estimate:

Number of gardens initiated by gardeners; grassroots org.,
from neighborhood out.

Number of gardens initiated by outside agency or organization, who
sought interested gardeners after deciding there was a need.

How many gardens has your organization worked with in the past five years (2007-11) that ceased operation?

For these gardens that ceased, what were the main reasons for the garden loss:

Lack of interest by gardeners
Loss of land to public agency
Loss of land to private organization
Loss of funding for program staff
Other, please specify: _____

Community gardens are associated with many benefits. For each benefit listed below, check the box that is most appropriate to the work of your organization. (This is one of the primary benefits of our garden(s), This is a secondary benefit from our garden(s), or We do not see this benefit)

Food production and access
Nutrition / improved diet
Exercise/physical activity
Social engagement / well- being
Neighborhood revitalization

Individual personal satisfaction
Environmental benefits
Inter-cultural communication
Intergenerational activities
Income generation
Job training
Education
Education specifically about gardening
Horticultural therapy
Art
Other (please explain in space below)

Based on your answers above, what would you consider the three (3) most signficant benefits resulting from the community gardens you work with? (Your responses do not need to be ranked)

Please use the space provided to explain or clarify your feedback on benefits.

Please indicate the degree to which your organization has addressed the following issues in the past five years. For each issue listed below, check the box that is most appropriate to the work of your organization.

Access to new sites for new gardens
Securing/protecting land for existing gardens
Materials used in the garden (soil, compost, water, etc.)
Understanding the safety of materials used in garden
Horticultural training / gardening education
Community building before a new garden is started
Getting new people involved
Keeping people involved long term
Planning social events
Collaboration with other organizations and institutions
Recruiting volunteers
Engaging with non- gardeners
Conflicts with community
Inter-generational dialogue
Cross-cultural dialogue
Addressing theft /vandalism
Advocacy across the city/community
Utilizing social media
Funding for new programs

Funding to sustain programs
Funding for staff
Other (write specify below)

Using the list above, please list the three (3) issues that are most challenging for your organization. (your answers do not need to be ranked)

Please use the space below to explain or clarify your feedback on issues and challenges.

Indicate the degree your organization utilizes or partners with the following:

Agricultural Extension Agents and Specialists
Other government agencies
Colleges and universities in your community
Funding agencies
National environmental organizations
Local environmental organizations
Local social service providers
Local gardening clubs
Neighborhood associations
Foodbank
Schools / school districts
Faith-based organizations
Other (please use space provided below to explain)

Has your organization supported or collaborated with other organizations to develop programs that directly address any of the following (check all that apply):

Food access to food insecure communities
Cooking / food preparation education

Health / obesity education

Horticulture / gardening education

Environmental restoration

Economic development / job training

Service to a specific population

Neighborhood revitalization

Crime prevention

Intercultural dialogue

Other, please specify _____

Please use space below to describe any of these partnerships or collaborations.

Please indicate which of the following your local government provides in support of community gardens (check all that apply):

Access to parkland or other public land through expedited procedure

Access to materials (i.e. mulch, water) or equipment (i.e. hauling, tilling)
Staff or office with responsibilities to support community gardens

Language in master plan / strategic plan

Zoning

Other, please specify: _____ No support

Please use the space below for any additional comments you would like to include in this questionnaire.

Appendix B: Interview guides

General context

1. When did the planning for the community garden begin?
2. How did your garden go from idea to reality?
3. What do you feel you did well during this process?
4. What challenges did you face, and how did you handle them?
5. When did the community garden open?
6. What were the steps involved in starting the community garden?
7. What were the external connections that helped startup?
8. What are the connections that you continue to make?
9. To what extent do you associate with other community gardens?
10. To what extent do you promote communications within the garden, (e.g., through social activities, email lists, etc.)?
11. What difference does having a sister garden make?

Connections to landowners

1. How was permission to use the site gained?
2. What is the land tenure status--is the site leased or allowed free use?
3. Is the landowner an individual, government body, or another type of organization (such as non-profit or private company)? [*I will not ask for, or record, names of specific people or organizations*]
4. If leased, how much is rent per month? Per year?
5. How would you describe your relationship with the landowner?

Connections to technical advisors

1. Does your community garden use assistance from external gardening or horticultural experts?
2. Do members of your community garden help each other with gardening expertise?
3. Do you provide workshops or informal gardening lessons for members?
4. Which external people or organizations did you approach for technical assistance on gardening?

Connections to funders

1. Where do you acquire funds for lease payments?
2. Does the community garden provide tools for members? If so, how did you acquire the tools?
3. How does the community garden acquire funding to pay for recurring expenses such as water?
4. Do you learn about funding opportunities from other community gardens?
5. Have you applied for funding or grants from governmental or private entities?

Appendix C: Participatory GIS extended methodology and findings

This appendix provides more details on the study design, methods, and findings on the PGIS project in Chapter 7. This project began from an action research perspective, and much of the research design and findings extended beyond the scope of this dissertation. Some of these details are discussed here.

The project was divided into three parts—research design with coalition members, data collection among community gardeners, and analysis in a focus group of coalition members. It worked through two levels of participation: First, coalition members designed and conducted the research; second, community gardeners provided data by participating in mapping exercises. Among coalition members, six became involved in the mapping project, including the co-chairs of the coalition. One co-chair is a New Brunswick resident who was the food security coordinator for a local non-profit and was the coordinator and gardener in one of the city's community gardens. During the time period of this project, he began working for Rutgers University, managing a farmers' market that has an on-site community garden. The other co-chair is a Rutgers Cooperative Extension agent for Middlesex County and is active in several urban gardening research and outreach efforts. The third member was the coordinator of a community garden and employed by a local non-profit. The fourth member, who recently started a community garden on her church's property, is active in various food alliance projects. The fifth person coordinates three community gardens in New Brunswick as part of her job with a community development organization that is run through one of the city's churches. Lastly, the sixth member ran a community garden located in a school

campus in New Brunswick and conducted 4-H activities at various community gardens through the coalition.

As we designed the project, we saw its usefulness for both internal and external audiences, which influenced our decisions in data collection and analysis. Internally, we would be able to evaluate those facets discussed above—the implications of knowing the spatial distribution of community gardeners for workshop planning. Externally, we also saw merits in showing the extent of our network to stakeholders such as funders and landowners. By presenting a picture of an interconnected gardening community, we could show something more significant than a garden map that appears at first glance to be a disconnected collection of sites.

Due to those internal and external goals, we initially wanted a web-based mapping platform; we began with paper webs, though. Web GIS can be updated and edited by the whole group even if we are not together in the same room, and it allows easy distribution of maps to external stakeholders simply by sending links rather than making hard copies. A few coalition members had also previously worked with web mapping projects that involved crowdsourcing. Because of that experience, they offered a few different ways that we could collect and analyze the information, we ran into trouble when discussing the nature of gardeners' internet access. We recognized that an online system wouldn't reach many of the community gardeners. Either internet access was limited or we just were not confident in some gardeners' internet literacy needed for a web mapping application.

Importantly, though, any GIS is complicated when it comes to asking people for the locations of their homes. This raises red flags in terms of privacy—especially in New

Brunswick where there are potentially a large number of undocumented immigrants. Although the city's community gardeners are ethnically diverse, there is a large Latino population in the city, and it is a primary destination especially for immigrants from Oaxaca, Mexico (Guarnaccia et al., 2012). With this broad mix of gardeners, a participatory GIS project had to be attentive to the methods through which we could get high rates of meaningful participation. Moreover, because of the Latino population, many of whom might be undocumented, we had to pay close attention to privacy and confidentiality. Point digitization in GIS software necessarily entails entering a specific infinitesimal point location, and I felt that it would complicate matters when addressing location privacy. One option would be for participants to draw a polygon around a given radius of their home, but that would be too time-consuming. We needed a format that could collect generalized location information about people's homes in a very quick and easily understandable way. The solution was simple, but not simplistic: putting stickers on a paper map.

Although we aimed ultimately for a web-based platform that could be used to communicate our work to external stakeholders, we developed a hybrid GIS made of three components—collecting data through paper maps, converting them into digital format through desktop GIS software, and analyzing data through a web based system—which reflected two types of participation. The first step was to collect data with gardeners through a paper map. I created a large poster-sized map of New Brunswick, which had the locations of the city's community gardens (Figure 7.4). Each garden was color-coded, and at coalition events we would simply ask people to take a sticker with the color of their community garden and put it over their house. If they also took their food to

other locations—for instance, the homes of friends and family—they placed a separately-colored sticker on those places. This is all accompanied by a discussion of the project, using Spanish language interpreters as needed. I produced the map at a scale so the stickers were large enough that they did not specifically show where the individuals live; it really just showed a half-block radius. The participation rate was high—people seemed to enjoy interacting with a paper map and figuring out where they lived in relation to their garden. It was a hands-on activity, children often asked for stickers to play with, and they also helped their parents in map navigation as well. Once we had done the mapping at a couple of events, we started to see initial results—a picture of the spatial distribution of the city's community gardeners. Once other participants in the coalition saw it, they got even more interested and wanted to go beyond workshop evaluation. Other coalition members took the paper map to their own community garden meetings with gardeners, or to garden work days where everybody was there doing group work. Those coalition members conducted data collection on their own and later returned the map to me. After each data collection event, I digitized the points from the paper map and entered them into GIS software. Overall, we collected the locations of 47 gardeners' homes. Although we did not know the total number of community gardeners in the city, there are 231 community garden plots. Since we only collected data at workshops and garden meetings, our sample frame was limited to those people who attended these events.

This data collection continued over the summer and into the fall, culminating in a focus group to analyze those data and conduct additional asset mapping that we introduced during the planning stages. To get ready for that meeting, described in more detail below, I took those digitized GIS data and built a web GIS application. In keeping

with our original goal for a web-based map, this platform allowed us to edit the data and decide on map symbols and colors. The web map contained layers for each garden's membership, as well as draft categories for other assets we intended to discuss.

This intermediate step between paper data collection and analysis and representation through the web in many ways represents the current challenges of participatory web GIS. Rather than digitizing data straight into a web application, we thought desktop GIS would be a good base to work from—giving us the most flexibility if we at least had the data in a traditional GIS format that we could then use to try out free web GIS services. This included creating attribute data about which community garden the person belonged to, and the date and event where it was recorded. On the one hand, we wanted to look at free web services, but on the other hand, we had access to fully-functional ArcGIS software because of my involvement. That itself represents the challenge of participatory web GIS because participation often means a university-community partnership that can provide those resources. Although the paid version of ArcGIS Online might be included with a university's site license, its usage incurs additional charges that we didn't feel comfortable testing, whereas ArcGIS Desktop incurs no usage costs.

Moving from the desktop GIS stage to the web GIS stage involved much trial and error, in large part due to our attempt to find robust GIS analysis in a free web mapping platform. I developed prototypes in the free versions of Google Maps Engine and ArcGIS Online (Google Maps Engine Lite Beta, and ArcGIS Online's public account). These versions offer basic visualization and limited spatial analysis tools. When it came to choosing a web platform, our group had a few discussions to look at what was available

and what suited our purpose. At first, people suggested using Google Maps, which is popular due to its widespread use. We found, though, limitations in map design and data management. Although you can easily geocode addresses by uploading Excel spreadsheets into Google Maps Engine, it was simply more efficient to digitize in ArcMap because our paper maps had points, not addresses. Importantly, only spreadsheets can be uploaded to Google, which was a barrier because we had spatial and attribute data already stored in ESRI shapefile format. Additionally, Google limits users to three map layers, does not allow layers to be saved for use in other maps, and does not allow user to upload custom base maps, which are possible with ArcGIS Online. This led to our choice of ArcGIS Online; our use of it was far from smooth, however. Although new points could be added, deleted, or modified in location, attribute data could not be edited online. The only way to update online map layers was to upload a new shapefile and delete the existing layer; it was not possible in the free version to synchronize changes made offline with the online account. All date attributes created in desktop GIS inexplicably rolled back to the previous day in the online map—for example, June 2, 2013 would actually appear in the online attribute table as June 1. There were other intricacies of the system, that individually were mainly a matter of learning the details of working in a GIS format that admittedly was in its infancy, but together took up a large amount of time to recognize and address. The editing functions offered vastly improved customization options over Google, but required a group work session to explain; Google had less functionality but was more intuitive to learn.

Ultimately, I created a web mapping application through the ArcGIS application programming interface (API) to create a home page for the project that was hosted on my

own research website in order to provide a customized look and easy access. Although users could visit the web map's home through ArcGIS.com, the web address is a long string of characters that reference the map's primary key. A web application, however, exists as a standalone page that exists on my server. This allowed me to create a URL with as a name that is recognizable—communitygarden.rutgers.edu/NBCGC—instead of a long string of characters that would be provided if you host completely on Google or ArcGIS Online. The map data, however, reside in the ArcGIS cloud. Using simple HTML programming, I customized the web application and added a link to take users to the editing page.

Asset mapping led to discussion of networks

Group analysis by coalition members of the web application took place in October 2013. I organized it in a focus group format, and our approach was an explicitly spatial asset mapping exercise.[32] The objective was to see not only who was part of our network but where these nodes were located. Three coalition members in addition to me attended; three other members were not able to be there, which stressed the importance of having an online system that could complement face-to-face analysis. The focus group was divided into three parts—evaluating the existing data, developing categories for further data collection, and developing web-based geoprocessing methods to enable future work. In many ways, this was similar to conventional (non-web) participatory GIS analysis. I used a television monitor to display our maps. We defined and redefined layers,

[32] Asset mapping is a common technique in community development to identify various types of assets already in place within a community. Mapping, however, is typically used metaphorically and not in a cartographic sense. In our project, we wanted to literally map the locations of assets. Please see Appendix D for the focus group guide.

developed symbology, added additional data, analyzed by discussion, and assessed how we might share the data with external audiences.

Through the process of categorizing various assets, we began to elaborate on the relationships between various community groups, local government offices, and the private sector. Not only did point locations of gardeners' homes signify the food distribution network—the destinations of production outputs—but at the same time showed the geographical sources of labor, the production inputs. Additionally, we saw that some of the labor that goes into community gardening—construction and maintenance, for example—came from the offices at Rutgers University that direct students to community service projects, and some of the donations of funding and materials came from local branches of national franchises. As we talked about the various assets that comprised our community gardening network, we shifted to other supporting actors like the local businesses who donated materials for our workshops. One of the coalition members had created a Google Doc spreadsheet with our donors and their addresses, and so as part of the focus group we entered these data into the web map. The map showed us not only who is interested in supporting the coalition but where they are located. In terms of external communication, this could mean publicity for stakeholders, but for internal learning purposes, we could then know *where* supportive businesses are located and which areas we have not reached out to.

By extending our network map beyond the gardeners, we learned that our efforts drew on relationships with Rutgers University and non-profit organizations in the city. Although one might expect a community garden to emerge from a group of residents who come together to build a garden, our network showed that gardeners and supporting

partners from around the city play important roles in that process. The establishment of a community garden in April 2013, for example, drew labor from several different offices and departments at Rutgers University. That same month, another community garden expanded their site with an apple orchard; it was built through the work of university, non-profit, and residents' labor. These projects are discussed more below and in the next chapter. The PGIS project contributed to this dissertation, though, primarily by showing the importance of "know-where." Intimate knowledge of neighborhoods and residents is important to the innovation in community gardening that we aimed for, and this knowledge was produced partly through coming together for the PGIS project. Sharing knowledge of place across community gardens generated discussions that helped us move from a collection of gardens to a more cohesive gardening movement.

Appendix D: PGIS focus group guide

1. Introduction
    a. Project Goals
        i. Understand geographic distribution of our coalition activities and resources
        ii. Evaluate mapping & GIS platforms for internal analysis and external communication
        iii. Establish online system for participatory data input
    b. Consent to record session (Recording is confidential)
2. Asset Mapping Basics
    a. Community development tool – Identifying what we already have *within* our community, instead of asking what we need
    b. Resources that affect our community gardens
        i. Key Individual Stakeholders in the Community
            1. Local farmers, existing gardens
            2. Activists, translators
            3. Landowners, elders, political leaders
        ii. Associations
            1. Neighborhoods, block clubs, garden club
            2. Elks, Moose, Lions, Scouts
        iii. Institutions
            1. Schools, Churches
            2. local government, parks, fire department
            3. corporate, Extension
            4. nonprofits, senior housing, CDCs
        iv. Landmarks
            1. Libraries, schools, hospitals
            2. library, schools,
            3. vacant land, tax appraisal office, planning agency, utilities, transportation, tool storage, greenhouses, meeting space, kitchens)
        v. Local Economy
            1. Businesses (donations), Garden centers, Credit unions, Grocery stores
            2. Landscaping, Health care, Unions (e.g. bricklayers apprentices)
            3. Seed Stores
    c. *How our gardens affect other places in the community*
        i. Individuals
            1. Gardener homes
        ii. Associations
        iii. Institutions
            1. Food Pantries
        iv. Land & Buildings

        v. Local Economy
            1. Marigold sales to stores
    d. Normally, the map is really a diagram; we're modifying it to do an actual map
3. ArcGIS Platform
    a. Free account; has some features and is public
    b. Layout
        i. Details, Add, Edit, Basemap
    c. Exercise: Adding Donation locations from the Google Docs Spreadsheet
4. Questions
    a. Which areas of New Brunswick are we reaching through the gardens? Which areas are we not?

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