COMMUNITY FOOD SECURITY IN THE UNITED STATES:

A Survey of the Scientific Literature

Volume II

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Community Food Security in the United States: A Survey of the Scientific Literature

Volume II

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TABLE OF CONTENTS

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INTRODUCTION

Note on Version

The purpose of this report is to document and synthesize research on community food security (CFS) in the United States. It builds on the 2009 Center for a Livable Future (CLF) food security–focused report *Community Food Security in United States Cities: A Survey of the Relevant Scientific Literature* (Haering and Syed, 2009).

Since the publication of the 2009 report, CFS has evolved as both a concept and a framework for intervention. This report describes the path to conceptual independence and reviews the literature on CFS history, definitions, theories and frameworks, measurement, magnitude and predictors, the consequences of low community food security, the connection to food policy councils, and evaluations of CFS interventions conducted in the United States.

The majority of research cited in this report is from peer-reviewed publications. It also references research conducted by practitioners but not published in scientific journals, and we acknowledge the quality of such resources. Additional reference materials are outlined in Appendix B. To accommodate readers' unique informational interests and needs, each chapter is written as a stand-alone reference on a given CFS topic.

CHAPTER 1 - COMMUNITY FOOD SECURITY: HISTORY, DEFINITIONS, AND FRAMEWORKS

Our understanding of community food security has evolved over time. Its current definition is "a condition in which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance, social justice, and democratic decision-making" (Bellows and Hamm, 2002). Since the 1980s, the concept has gained traction through advocates who influenced federal, state, and local food security policies and developed organizations and programs that align with CFS goals. In 1994, CFS reached national prominence with the formation of the Community Food Security Coalition, which terminated operations in 2012 (Holt-Giménez and Wang, 2011). Along with this development, however, fundamental issues remain in the theorizing, measurement, and evaluation of CFS. Without a clearer understanding of the state of these challenges, researchers and practitioners are limited in directing future research needs and mobilizing change.

The purpose of this chapter is to trace the development of the concept of food security, and later community food security, and to clarify the conceptual and theoretical understandings and debates that exist within the CFS movement in the United States.

I. History and Progress

International Efforts to Define Food Security

The United Nations (UN) first recognized food as a human right in the 1948 UN Universal Declaration of Human Rights, which set in motion the evolution of concepts like food security and community food security (UN, 1948, cited in Bellows and Hamm, 2002). International development work in the 1960s first defined food security as the ability to meet aggregate food needs in a consistent way. Subsequently, international food security became a way to describe and measure the UN's mandate to protect the human right to food and promote world trade (Anderson and Cook, 1999; Bellows and Hamm, 2002).

In 1974, the United Nations convened the World Food Conference in response to a worldwide price increase of staple foods. The goal of the conference was to ensure that countries produced enough food for world consumption and that the supply was reliable. Food security soon became a policy priority for developing countries (Allen, 1999; Anderson and Cook, 1999; Bellows and Hamm, 2002). In 1975, the UN published the first official definition of food security (FS): "availability at all times of adequate world supplies of basic food-stuffs … to sustain a steady expansion of food consumption … and to offset fluctuations in production and prices" (UN, 1975). In 1983, the UN Food and Agriculture Organization (FAO) would add another goal: "to ensure that all people at all times have both physical and economic access to the basic food they need" (FAO, 1983).

By the 1996 World Food Summit in Rome, food security was more concretely conceptualized. The definition included environmental sustainability as integral to agricultural practices and outlined three FS dimensions: availability, stability, and access (FAO, 1996). These descriptions provide

only a snapshot of the evolution of this definition. Between 1975 and 2003, advocacy groups and researchers would continue to publish more than 30 different FS definitions. These descriptions document the range of academic disciplines that have contributed to and found relevance in this issue (Maxwell & Frankenberger, 1992). Table 1 outlines a select group of FS definitions. For a more complete list, see Haering and Syed (2009: 3-4).

From Hunger to Food Security: Development in the US

The development of the concept of food security in the US overlaps with awareness of, and responses to, domestic hunger (Anderson and Cook, 1999:143). Prior to the 1980s, FS in the United States was primarily described and acted upon as a problem of hunger, or the absolute deprivation of calories and nutrients necessary to lead an active and healthy life. Accordingly, the US federal government sought to strengthen the US food security safety net through food assistance programs. The first of these programs, including food stamps (1939–43), were implemented during the Great Depression when the US government purchased farm surpluses to alleviate hunger in urban areas. Contemporary food assistance programs, such as the Supplemental Nutrition Assistance Program or SNAP (formerly known as the Food Stamp Program) and the Special Supplemental Nutrition Program for Women, Infants and Children (WIC), were created with the primary goal of addressing hunger and health issues in low-income people. These programs were further expanded under the 1968 Senate Select Committee on Nutrition and Human

Table 1. Official and Institutional Food Security Definitions by Source and Year

Source	Year	Definition
UN	1975	"Availability at all times of adequate world supplies of basic food-stuffs... to sustain a steady expansion of food consumption... and to offset fluctuations in production and prices."
FAO	1996	"Food security redefined to officially include three dimensions: availability, stability, and access. Environmental sustainability of agricultural practices is officially recognized as integral to food security."
USDA	1998	"Access by all members at all times to enough food for an active, healthy life." At a minimum, it includes "the ready availability of nutritionally adequate and safe foods; and assured ability to acquire acceptable foods in socially acceptable ways without resorting to emergency food supplies, scavenging, stealing, or other coping strategies."
FAO	2003	"A situation in which all households have both physical and economic access to adequate food for all members and where households are not at risk of losing such access. There are three dimensions implicit in this definition: availability, stability, and access. Adequate food availability means that, on average, sufficient food supplies should be available to meet consumption needs. Stability refers to minimizing the possibility that, in difficult years or seasons, food consumption might fall below consumption requirements. Access draws attention to the fact that, even with bountiful supplies, many people still go hungry because they are too poor to produce or purchase the food they need."

Needs with support from the Nixon, Ford, and Carter administrations (McGovern, 2002).

Anti-hunger advocates had long recognized poverty as the major cause of hunger and pointed out the inadequacy of using hunger (a symptom) to describe the problem of food insecurity (a larger social and systems-level problem). During the 1970s, anti-hunger groups focused on two main goals: first, to improve the economic standing of low-income households (reducing the risk of food insecurity) and, second, to expand the federal food security safety net for those who needed it. To achieve their goals, these groups addressed problems of food security through a broader scope, supporting community workforce development and improvements to federal assistance programs. In some cases, organizations like the Food Research and Action Center (FRAC) and Bread for the World filed lawsuits against state governments and engaged in coordinated policy efforts to expand the Food Stamp, WIC, and National School Lunch programs (FRAC website, last updated May 20, 2009).

From these efforts, dominant food security perspectives would shift to define a state of food security (conditions preceding hunger) as distinct from hunger. These new perspectives would also allow policymakers, researchers, and activists to seek strategies to prevent hunger in the first place by, for example, improving access to food sources or improving individuals' financial ability to purchase food. This perspective reached prominence on the public agenda in 1990 when the Select Committee on Hunger of the US House of Representatives set a new goal of creating food security rather than simply eliminating hunger (Anderson and Cook, 1999). Notably, discussions of food production remained absent from these developments. Only later, with the development of CFS and related CFS efforts, would consideration for production, as well as environmental sustainability, be addressed.

In 2006, a scientific panel convened by the National Academy of Sciences developed recommendations to reclassify US households in relation to food security through definitions that eliminated the word hunger. Before 2006, householders were classified as: (1) food secure, (2) food insecure without hunger, (3) food insecure with moderate hunger, and (4) food insecure with severe hunger. Following the USDA's adoption of the National Academy of Sciences recommendations, this classification changed to: (1) food secure, (2) low food security, and (3) very low food security (National Academy of Sciences, 2006).

Together, the panel's report and adoption of its recommendations capture an evolving understanding of efforts to define, measure, and address the issue of food security in the United States (National Research Council, 2006; cited in Haering and Syed, 2009). Figure 1 displays the evolution of the food security definition over time.

CFS Emerges from Anti-Hunger and Food Security Initiatives

Broadly, CFS represents a subset of food security that is oriented around the community level rather than the regional, national, or global levels. Cohen and Burt (1989) argued that unlike hunger, which is experienced by individuals, food insecurity is experienced by communities; therefore, community food security more accurately embodies the broader system or landscape that leads to hunger and pinpoints the conditions needed to prevent hunger and other consequences like malnutrition. CFS also complements the broad scope of anti-hunger work by more explicitly accounting for the complex interplay of social, political, and economic forces that influence food production and acquisition (Bellows and Hamm, 2002).

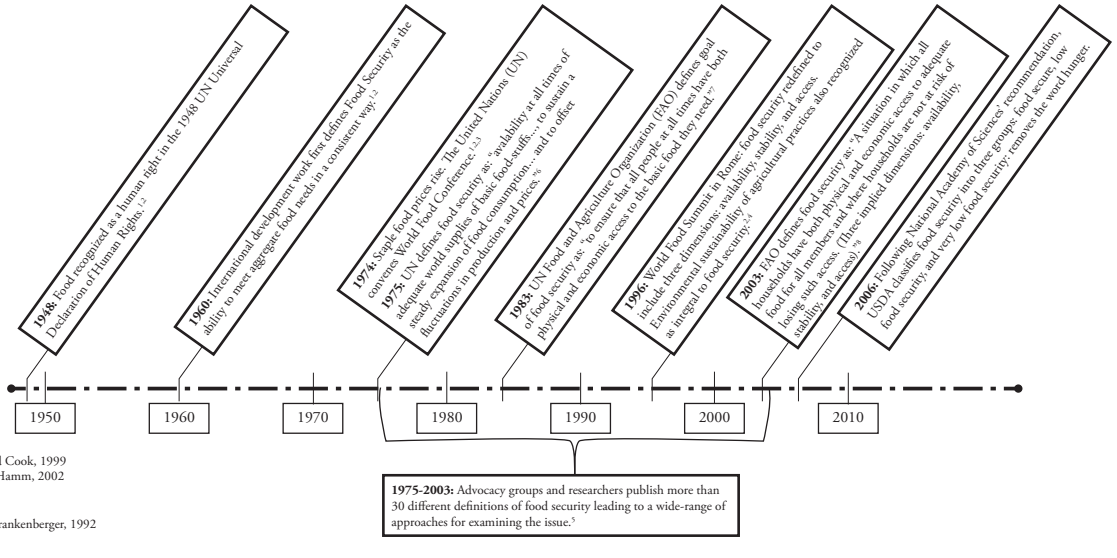
During the 1980s and 1990s, federal food assistance programs experienced massive budget cuts (Allen, 1999; Lezberg, 1999). To fill the gap left by the reduction in government-run food assistance programs, private voluntary providers stepped in and built emergency food programs (soup kitchens, food banks, and other food donation programs), either through private donations or federal block grants issued to states (Fitchen, 1997; Allen, 1999). Though these efforts were fairly successful in reducing the hunger experienced by the poorest families and individuals, the support was fragmented and fragile at best (Allen, 1999; Anderson and Cook, 1999). By the end of the 1980s, this broken support system would spark the development of a community food security perspective (Allen, 2010; Bellows and Hamm, 2002; Hamm and Bellows, 2003).

Developing a Community Food Security Definition

CFS prioritizes food security needs of low-income people while also advocating for the development of local and regional food systems (Allen, 1999). The concept moves beyond traditional definitions of food security by considering that ensuring an adequate food supply, and present and future food access, requires a focus on all components of the food system, not just consumption. Less clear in CFS literature and among advocates, however, is whether CFS should be framed more in terms of improving low-income individuals' food access or of developing local sustainable food systems, which may be more accessible to middle- and high-income individuals (Lezberg, 1999; Clancy, 1999). While local food system advocates promote sustainable agricultural practices, anti-hunger advocates are concerned with having a steady and affordable food supply. This tension has led to variety in intervention strategies, which range from expansion of community food assistance programs to the promotion of urban agriculture.

Three sets of community activists and scholars have contributed to the creation of the CFS concept and its efforts: community nutrition educators, sustainable food system researchers,

Figure 1. Timeline Marking the Evolution of Food Security Definitions in the U.S.



[1]Anderson and Cook, 1999
[2]Bellows and Hamm, 2002
[3]Allen, 1999
[4]FAO 1996
[5]Maxwell & Frankenberger, 1992
[6]UN, 1975
[7]FAO, 1983

and anti-hunger and community development advocates (Anderson and Cook, 1999; Bellows and Hamm, 2002; Hamm and Bellows, 2003). This multidisciplinary approach has made it difficult to develop a universally agreed upon definition of CFS. To date, however, the most widely accepted definition is by Hamm and Bellows in 2003 (which has subsequently been cited in various publications from the FAO):

"A condition in which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance, social justice, and democratic decision-making."

Capturing the visionary nature of CFS, this definition seeks to address all relevant issues and stakeholder perspectives. As discussed later in this report, however, such an inclusive definition also creates challenges in the on-the-ground operationalization of the concept.

Summary and Conclusions: Community Food Security

CFS aims to ensure availability, stability, and access to food at the community level, and looks at how these issues relate to the community food production system (Gottlieb and Fisher, 1996; Anderson and Cook, 1999; Joseph, 1998; Hamm and Bellows, 2003). The work of CFS has built upon the foundation of anti-hunger efforts throughout much of the 20th century. Yet, in addition to hunger prevention and alleviation, CFS orients interventions toward creating producer-consumer linkages—such as farmers' markets and community supported agriculture (CSAs)—while emphasizing the importance of sustainability in food production and human and community well-being.

CFS work attempts to incorporate systems-level thinking, though its approach is often more strategic, identifying key opportunities for engagement rather than addressing the system as a whole. CFS involves work on scales beyond the household level and within national boundaries. Although the anti-hunger element continues to be emphasized in its current definition, anti-hunger efforts have not been fully absorbed into CFS work.

In the past few years, however, there have been signs of increased collaboration among CFS and anti-hunger initiatives, predominantly related to a notable shift in the vision and work of anti-hunger organizations across the country. Rather than focusing on improved food procurement, these groups have begun to incorporate and address the root causes of hunger in their communities through programs and policies. This transition harkens back to the early days of the anti-hunger movement when anti-poverty and living wage legislation fueled organizing efforts.

Furthermore, in the fall of 2013, the Community Food Bank of Southern Arizona hosted the conference "Closing the Hunger Gap: Cultivating Food Security" with over 300 participants from 150 organizations across the country. A follow-up conference is being planned for fall 2015 by the Oregon Food Bank, owing to the increased interest among anti-hunger and community food security advocates. These conferences, and anti-hunger groups' growing focus on root causes of food insecurity and hunger, may yield many more opportunities for future collaboration between the anti-hunger and CFS movements.

Theorizing CFS: From Emerging Concept to Effective Strategy

As CFS has emerged to address problems facing low-income, food insecure people through

policies and interventions, less attention has been given to developing and documenting its theory. The absence of a coherent theory and the need to engage multiple stakeholders have made it difficult for activists to grasp "CFS issues broadly enough to include diverse and often conflicting community needs" (Hamm and Bellows, 2003:38). When Anderson and Cook published an article titled "Community Food Security: Practice in Need of Theory?" in the *Journal of Agriculture and Human Values* in 1999, there was very little written on the theory of CFS. In this article, the authors call for formulating a theory for CFS in order to identify a common purpose among diverse stakeholders. Some in the academic community have voiced similar concerns and recommendations (Joseph, 1998; Allen, 1999; Clancy, 1999; Lezberg, 1999; Hamm and Bellows, 2003; Born and Purcell, 2006). While a unified CFS theory has yet to be developed, researchers have several theories, and related frameworks, that they draw from to inform their understanding and implementation of interventions to address CFS, discussed later in this report.

Why Theory?

A theory to clarify linkages would help reveal the dynamics between different parts of a food system and their relevance to CFS (Clancy, 1999; Lezberg, 1999). Identifying this theoretical map is important, especially as the multifaceted and complex nature of the concept may, without broader understanding of the food system, lead to development of interventions that unwittingly support one aspect of CFS while weakening another. For example, a proposal to develop a large chain grocery store in an underserved area may improve the availability and access to fresh foods and stimulate economic activities in the community. But if this intervention does not consider or utilize local producers—who may otherwise source some of the new grocery store consumers—it may redirect some consumers from the local supply chain, thus harming the local food system. A theory by itself would not necessarily bring a balance of interests in the example provided here, but it may help CFS stakeholders better navigate the range of feedback, opportunities, and potential consequences of their work.

A second benefit of theory is guidance for the development of community food security indicators. These indicators may help identify the state of CFS in a given community and allow communities to be compared. Indicators may also be used to inform public investments in CFS needs. Because building a food secure community relies on multiple projects spanning years and even decades, it is important that theory also identify various stages of CFS progress (Anderson and Cook, 1999; McCullum, Desjardins, Kraak, et al., 2005). Initial work toward a theory comes from nutrition education researchers, such as McCullum and colleagues, who have described a CFS continuum (see Figure 2 in Appendix B). This model stems from a dietitian's perspective and provides guidelines of what can be done by nutrition professionals to improve and reach CFS (McCullum, Desjardins, Kraak, et al., 2005).

In summary, these theories are useful, but many advocates do not embrace theory as a means to help them structure their work. Theories may help unify diverse food system stakeholders under a common CFS purpose. This unified purpose may lead to better alignment of stakeholder goals and CFS interventions. Lastly, a theory may help specify and validate tools to measure and understand challenges related to CFS and food systems across space and time (Anderson and Cook, 1999; Clancy, 1999; Lezberg, 1999). The process of theory

building requires much data, time, and deliberation. Though a number of researchers have made important strides toward its start, much work remains.

Operationalizing Community

In addition to conceptual vagueness resulting from a lack of CFS theory, the term "community" raises political and measurement challenges. For some, community may be defined by geographic characteristics such as size and location of a neighborhood or city; it may also be the local political economy defined by voting districts, taxation, and zoning codes. Still others may choose to focus on the demographic characteristics of the individuals involved, for example, racial and ethnic identification. However it is defined, each community faces different sets of challenges toward an agreed upon understanding of its members' food needs. At any point, disagreements may arise and weaken movement toward CFS.

II. CFS Theories and Frameworks

Though a number of conceptual frameworks have been applied to help understand and address issues of food insecurity, explicit documentation of CFS-specific theories and frameworks is more limited (Innes-Hughes et al., 2010; Anderson & Cook, 1999). Despite a lack of formal documentation, however, CFS advocates have applied theory in their work, and a small body of literature addresses the utility of applying a social-ecological perspective, and other frameworks, to help guide CFS research, practice, and analysis. This section explores the contents of these theories and frameworks, as well as their utility in relation to CFS.

CFS and Social-Ecological Theory

Theories are described as sets of interrelated concepts or ideas intended to explain something, like CFS (Coreil, 2010). Social ecological theory pulls from general systems and social science theories, which emphasize the interconnectedness of the individual and his/her social and environmental context. The perspective argues that behavior is affected by and affects this context, which includes multiple levels of influence (e.g., individual, interpersonal, institutional, community, and policy levels) (Sallis et al., 2008). It also recognizes that varied levels interact with each other. According to this perspective, CFS advocates should account for CFS influences at multiple levels and develop interventions that include multilevel activities.

In a direct application of the social-ecological perspective to CFS and food, Kaiser (2011) applies and explains the relevance of understanding factors at multiple levels and their cross-level influence. She organizes her analysis according to three main food system characteristics (interdependence, diversity, and vulnerability), and uses these categories to relate food systems' connectedness, context, and feedback to a community's natural and built environments, people, and social characteristics (Kaiser, 2011).

Interdependence. Stakeholders in a given food system differ in their goals and positions in social networks, yet all are embedded in and influenced by surrounding socioeconomic and ecological conditions. This interdependence demands that CFS researchers and practitioners account for competing interests in context and, to achieve CFS goals, adapt their communication and work strategies accordingly (Kaiser, 2011). The process of comparing needs and interests, and then coming to agreement regarding community goals, may be achieved through cross-sector partnership and open communication, one of the core

functions of food policy councils and many Cooperative Extension activities (Chapter 5).

Diversity. The social ecological perspective guides CFS activists to consider diversity in interest groups as well as diversity in the physical and social facets of a food system's built and natural environments (Kaiser, 2011). According to Berkes et al. (2003), recognizing and understanding connectedness and feedback among these components, in context, represents essential capital or inputs for achieving CFS. The social-ecological lens provides a systematic way for identifying, organizing, and considering the relationships (both positive and negative) among these factors, which may include different kinds of capital for a food system (Kaiser, 2011; Hart, 2006). For example, within a system, there is natural capital (e.g., environmental resources, ecosystem adaptability and resilience to change, visual appeal), human capital (e.g., people's skills, knowledge, abilities, and networks), and built capital including tangible spaces for CFS interventions (e.g., urban farms and gardens) or technological infrastructure (e.g., EBT machines in farmers' markets) (Kaiser, 2011; Hart, 2006). Accounting for these factors helps CFS advocates better understand their engagement in various pieces of a much larger and multifaceted system.

Vulnerability. Finally, Kaiser (2011) includes explicit consideration for vulnerable groups—that they be identified and areas of growth, development, and potential assessed; and that these factors be included in the design of CFS interventions. Examples of the types of food system challenges that may fall under the vulnerability dimension include efforts to develop interventions that also challenge or transform societal bias associated with race or class. Without explicit consideration for these groups, many initiatives, such as farmers' markets, are perceived as doing little more than reinforcing the advantages of white and affluent populations (Campbell et al., 2013; Guthman, 2011).

Applying CFS Challenges to Social Ecological Models and Theory

Recognizing the growing interest in community food projects and research, Campbell et al. (2013) developed a community food system bibliography that identified persistent and strategic challenges facing CFS stakeholders. According to the review, these challenges are economic, social, and political in nature (Campbell et al., 2013). From an economic perspective, stakeholders are challenged by negotiating the opportunities and limits of markets, such as in (1) identifying food prices that are acceptable to farmers but also accessible to low-income consumers, while still (2) affording fair food worker wages and working conditions. Politically, stakeholders struggle with reconciling varied political approaches for change, such as a decision to take on short-term and incremental initiatives or to fundamentally change the system. And from a social lens, practitioners face difficulty in developing practical interventions that also address—rather than worsen or reinforce— race and class biases (Campbell et al., 2013).

Campbell et al. (2013) point out that all these issues are related and interact. This interdependence reflects the complexity of working in a system and the value of a social-ecological perspective to address and understand CFS in context-specific settings. As mentioned, the model may organize these challenges by level of influence and clarify their interrelated nature. By connecting diverse issues, the model supports a role for collaboration among varied disciplines and stakeholders. Together, these

groups may explore and identify ways to achieve compromise, address tensions, and make strategic trade-offs to support their vision for a sustainable community food system.

Beyond identifying persistent food system challenges, Campbell et al. (2013) suggest a number of established community development and public policy–based theories that may guide the development of interventions for specific community food system challenges. For example, study authors recommend the theory of public work (Boyte and Kari, 1996), which describes the components involved in bringing diverse stakeholders together to achieve and build things of public value. The use of theories complements a social-ecological framework because, in contrast to the framework alone, they may guide practical action on a given persistent challenge. At the same time, theories are able to exist within the overarching social-ecological framework, which may contextualize the theory and issue for the framework's interrelatedness, diversity, and vulnerability with other community food system and CFS components (Campbell et al., 2013; Kaiser, 2011).

Other Frameworks

In addition to a social-ecological perspective, a number of other frameworks have gained traction in recent food security and community food security literature. In this section, two such frameworks—food justice and food sovereignty—are briefly described, as well as compared and contrasted to CFS. We also include a discussion, in relation to this work, of the idea of food democracy. These frameworks do not represent an exhaustive list of related concepts, such as a rights-based food system (Anderson, 2008), environmental justice frameworks, or the growing push to consider the food workers' rights, working conditions, and the relationship to US community food security. For more information about resources related to these concepts, please see the additional resources section at the end of the report.

FOOD JUSTICE—CONCEPT AND DEFINITION

In the effort to build a more socially just US food system, the CFS concept is often accompanied by the term food justice (Alkon and Mares, 2012). Although the two concepts are different, they overlap broadly (Holt-Giménez and Wang, 2011). Under a food justice framework, access to healthy, affordable, and culturally appropriate food is considered for its relationship to patterns of racial and class-based inequalities within society, from the built environment to institutional policies (Alkon and Mares, 2012; Alkon and Norgaard, 2009). Food justice activists are concerned with achieving greater equality in access to healthy food, especially for people of color and for low-income communities (Heynen et al., 2012; Holt-Giménez and Wang, 2011).

FOOD JUSTICE—RELATIONSHIP TO CFS

Although food justice is an increasingly popular approach for food system stakeholders, literature exploring the concept—including from a CFS perspective—is evolving and limited (Gottlieb and Joshi, 2010). The concept is also difficult to flesh out and operationalize on the ground. Broadly, food justice extends CFS to consider the ways in which racial and economic inequalities pervade food system practices and processes, from production to food consumption and trade (Alkon and Mares, 2012). In one comparative case study conducted in Northern California, researchers examined the concept of food justice as articulated by the Karuk Tribe of California and the West Oakland Food Collaborative, two spatially and racially distinct communities (Alkon

and Norgaard, 2009). They found that participants frame experiences of food insecurity in terms of institutionalized racism (e.g., histories of discrimination and denied access to land and water for food production; racialized physical landscapes that prevent purchase of quality foods), rather than consequences of individual food choices. These perspectives shaped community food security interventions, such as the West Oakland Food Collaborative's emphasis on building local food and economic systems rather than corporate economic development. The authors concluded that these cases, and a food justice frame, help CFS activists and policymakers consider the institutionalized nature of denied access to healthy, affordable, and culturally appropriate foods. These findings reveal an important role for political alliances between environmental justice, sustainable agriculture, and CFS/FS activists, so that issues of food access may be addressed along with those of institutionalized racism and classism (Alkon and Norgaard, 2009).

FOOD SOVEREIGNTY—CONCEPT AND DEFINITION

The concept of food sovereignty originates from International Peasant Movements in the global South (Alkon and Mares, 2012). Its most common definition is attributed to Via Campesina, and calls for the right of persons to "healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems" (2009). This framework gives precedence to production, fair pricing, and the reorganization of trade to support small-scale farmers and local/domestic markets, community control of local food system resources (e.g., land, water, and seeds), as well as natural resource protection (Alkon and Mares, 2012; Bello, 2008; Holt-Giménez and Wang, 2011). Its focus requires examining the distribution of power in a food system and intervening to build local and community-based food systems that guarantee economic, social, and cultural rights, including for women, indigenous groups, and racial minorities (Alkon and Mares, 2012; Anderson, 2008; Heynen et al., 2012). Some researchers describe the work of labor rights activists, such as the Food Chain Workers Alliance, as falling under this framework (Holt-Giménez and Wang, 2011).

FOOD SOVEREIGNTY—RELATIONSHIP TO CFS

Food sovereignty is seen by some authors as a radical interpretation of CFS and food justice, as well as critical for effectively supporting food insecure communities (Holt-Giménez and Wang, 2011). Given that these populations are the least supported in sustainable and consistent ways by a corporate food model, they argue that those food insecure communities would benefit the most from food sovereignty products: power and ownership over local food production (Alkon and Mares, 2012). Whereas CFS and food justice frameworks work alongside a dominant corporate food system (and therefore pursue reforming the existing system within its established parameters), the food sovereignty concept states that this is not enough, and that explicit opposition to the dominant model is required. Examples of FS exist mostly among tribal or native communities in the US and within an international context.

In one multiple case study exploring food justice and CFS-relevant processes, such as an Oakland farmers' market connecting black farmers and low-income consumers, it was argued that an eventual inability to provide fresh and healthy food resulted from working

alongside the corporate food regime, rather than trying to reform it (Alkon and Mares, 2012). Without undoing the control of a corporate food regime, and building more democratic and regionally oriented food systems, these authors argue that many CFS and food justice interventions simply reinforce a system of centralized and globalized agriculture that undermines lasting CFS (Alkon and Mares, 2012; Heynen at al., 2012). In terms of examples of true food sovereignty action (or movement-based strategies), then, researchers identified national boycotts and coalitions for labor justice advanced by groups like the Coalition of Immokalee Workers (CIW); reform of or effecting change within national-level food systems policy, such as the Farm Bill; and food citizen engagement in regulations related to food and intellectual property rights, such as advancing access to information and choice related to genetically modified foods (Holt-Giménez and Wang, 2011; Fairbairn, 2012; Hassanein, 2008). These interventions are characterized as more radical and demanding in terms of time, energy, and resources than those developed under a food justice or CFS frame (Holt-Giménez and Wang, 2011).

The CFS, food justice, and food sovereignty movements overlap. While the overlap varies by degree, the movements share similar political objectives and desired outcomes, with a general focus on community investment in production and access to local food resources and systems (Alkon and Mares, 2012). By adding a food justice, democracy, and sovereignty frame to CFS, CFS advocates may be encouraged to take on the politics of the food system, or what some researchers identify as the roots of CFS priority issues (Heynen et al., 2012). Without this focus, it is argued that food system producers and consumers remain passive recipients of a dominant corporate food regime, under which lasting CFS remains elusive (Heynen et al., 2012).

In addition to the above-mentioned frameworks, food democracy has been proposed as a process by which food citizens may begin to respond to the dominant corporate food regime. Food democracy suggests the "importance of processes for making choices when values come into conflict and when the consequences of decisions are uncertain" (Hassanein, 2008: 289). Furthermore, solutions to ecological, social, and economic problems in the dominant food system must be determined socially and politically through meaningful civic participation and political engagement by an informed food citizenry. Two core ideas are at the heart of the food democracy framework: first, food democracy is achieved by collective action by and among organizations rather than through individuals' actions, premised by the idea that coalitions of organizations both increase citizen power and expand the number of people involved in an effort; second, food democracy emphasizes the importance of meaningful participation by individuals, through coalitions or on their own, in governing and shaping their relationships to food and food systems.

According to Hassanein, meaningful participation has four dimensions (290–291). First, it means that individuals have the opportunity to develop a broad knowledge of the food system and its various facets. Second, citizens have the opportunity to share ideas about the food system with others so that they can clarify issues and discuss values. Third, food democracy requires citizens to develop the capacity to determine and produce desired results with respect to food and the food system. It involves citizens being able to determine their own relationship to food, and public work by citizens to address and solve community food problems. Here, public work refers to an observable effort by a mix of people who produce things for the common good and also gain greater confidence in their capacities in the process. Fourth, food democracy means that the citizenry acquires an

orientation toward the community good and the willingness to go beyond their self-interest to promote the well-being of the community and to recognize the value of mutual support and interdependence.

Together, these frameworks—along with alliances among stakeholders of various perspectives and movements—may help advance CFS by involving food citizens in food system change while also narrowing and clarifying which food system components are most in need of reform and should be prioritized (Holt-Giménez and Wang, 2011). As noted by Anderson (2008), this guided and engaged action supports food system stakeholders in a richer analysis and critique, and in improved effectiveness of existing interventions, aspects of agriculture, and food system activities.

CHAPTER 2 - MAGNITUDE AND PREDICTORS

Since 1995, the US Department of Agriculture (USDA) has collected national data on household food insecurity. Using these data, this section describes the magnitude and predictors of household food security at the national and regional levels. We focus on household food security because there are no official CFS statistics and these data may be combined with community-level indicators to construct measures of CFS (see chapter 3 for examples of community food security indicators).

I. Household Food Insecurity in the US

In 2001, 10.7 percent of US households (11.5 million households, more than 33 million individuals) were food insecure, meaning they had difficulty at some point in the previous 12 months in providing enough food for all household members because of a lack of resources. Over the next decade, and compounded by the 2007–2009 Great Recession, this figure would increase at the national level. In 2012 (the latest period for which national data are available), 14.5 percent of US households were considered food insecure. This percentage represents 17.6 million households and close to 49 million individuals. One-third of these households (7 million households, or 5.7 percent of all US households) had very low food security, meaning that the food intake of some household members was reduced and normal eating patterns were disrupted at times during the year because of limited resources. In most cases, episodes of food insecurity were recurrent but not chronic. Levels of US food insecurity across all classifications have remained stagnant since 2008 (Coleman-Jensen, Nord and Singh, 2013).

Low and very low food security differ in the extent and character of the adjustments households make to eating patterns and food intake. Households classified as having low food security reported multiple indicators of food access problems (e.g., feeling worried that food would run out before they had the money to buy more, not being able to afford balanced meals) but typically report few, if any, instances of reduced food intake. Households classified as having very low food security reported multiple instances of reduced food intake and disrupted eating patterns owing to inadequate resources for food. In 3.9 million households (representing 10 percent of all US households with children under the age of 18), adults and children experienced very low food security (Coleman-Jensen, Nord, Andrews et al., 2012: v).

The prevalence of food insecurity was found to vary considerably among households with different demographic and economic characteristics. Rates of food insecurity were higher than the national average for the following subgroups (Coleman-Jensen et al., 2012: 8-10):

- All households with children under the age of 18 (20.6 percent)
- Households with children under age 6 (21.9 percent)
- Households with children headed by a single woman (36.8 percent) or a single man (24.9 percent)
- Black, non-Hispanic households (25.1 percent) and Hispanic households (26.2 percent)

- Households with incomes below 185 percent of the poverty threshold (34.5 percent)

Food insecure households often turn to federal food assistance programs for help. According to the December 2012 food security supplement to the General Population Survey (the most recent data available at the time of publication), about 59 percent of food insecure households reported receiving assistance from one or more of the three largest federal food and nutrition assistance programs in the previous month. SNAP (formerly known as Food Stamps) provided assistance to 42 percent of food insecure households, children in 32.5 percent received free or reduced-price school lunches, and women or children in 11.4 percent received WIC food vouchers (Coleman-Jensen et al., 2013: 29). In addition, households and individuals used community emergency food assistance programs.

Emergency food programs are typically locally based and volunteer-run, but the USDA supplements these resources through The Emergency Food Assistance Program (TEFAP). Food pantries distribute unprepared foods for off-site use, and emergency kitchens (often referred to as soup kitchens) provide individuals with prepared food to eat on site (Ohls et al., 2002). Households often combine the use of federal food assistance programs and community food assistance programs—67.1 percent of households with incomes below 185 percent of the federal poverty line participated in one or more of the three federal programs (Coleman-Jensen et al., 2012: Statistical Supplement: 28).

II. Geographic Differences in the Household Food Insecurity Prevalence

The prevalence of household food insecurity varies greatly across geographic boundaries. Regionally, the prevalence of food insecurity is higher in the South (16.0 percent) and West (14.4 percent) than in the Midwest (14.2 percent) and Northeast (11.9 percent). Across metropolitan areas, the prevalence of food insecurity was highest for households located in principal cities of metropolitan areas (16.9 percent), intermediate for those in nonmetropolitan areas (15.5 percent), and lowest in suburbs and other metropolitan areas outside principal cities (12.7 percent) (Coleman-Jensen et al. 2013: 10). This section provides some explanations for why food insecurity rates differ across geographic regions.

Explaining Differences across Geographic Locations

Food insecurity rates differ across states as a result of both population characteristics and state-level economic conditions. Households with low incomes, low adult education levels, single-parent household heads, adults with a disability, adults who are unemployed and/or noncitizen household heads are more likely to be food insecure. Consequently, states with larger shares of these households are more likely to have a higher prevalence of food insecurity. State-level economic conditions, such as the average wage, cost of rental housing, unemployment rate, residential instability, high tax burden on low-income households, and participation in food and nutrition assistance programs, can also affect state-level food insecurity prevalence (Coleman-Jensen, 2013). By the same token, state policies that promote the use of federal food assistance programs by eligible households, increase the supply of affordable

housing, and reduce the total tax burden for low-income households are more likely to reduce a given state's food insecurity prevalence (Bartfeld and Dunifon, 2006).

Studies have been done to understand how local characteristics relate to household-level food security. Using the Wisconsin Schools Food Security Survey, Bartfeld and colleagues (2010) explored the relationship between community characteristics and household food security among households with elementary school children in Wisconsin. The data were collected from parents and guardians of a convenience sample of students attending 65 elementary schools in 26 counties at six time points over three years (2003–2005). These data focused on housing costs, transportation availability, proximity to supermarkets and grocery stores, degree of urbanicity, and the economic strength of the community.

Study authors found that these variables have measurable impacts on food security. Housing costs appear to be particularly important, as a $100 increase in median rent was found to be associated with a 21 percent increase in the odds of food insecurity. Results show that within one state, households face starkly different risks of food-related hardship based on differences in local housing costs. Availability of transportation—both public and private—plays a role in maintaining food security. Very low proximity to supermarkets (more than 15 miles away) increases the risk of food insecurity, even after controlling for local economic conditions and other factors (Bartfeld, Ryu, and Wang, 2010).

Given their results, Bartfeld and colleagues suggest that efforts to promote affordable housing could be an important strategy for improving food security. Furthermore, transportation-related findings suggest that strengthening public transportation infrastructure and/or increasing private vehicle ownership may reduce household food insecurity. While these changes focus on the household level, given households are encompassed within a given community, and reduction in their level of food insecurity would also reduce community food insecurity. Lastly, evidence regarding the importance of proximity to supermarkets and grocery stores implies that the lack of retail outlets in some areas may be another appropriate point of intervention. This study supports the notion that food insecurity results from a complex interplay of personal resources and the broader social and economic context, rather than from household resource constraints alone.

III. Predictors of Food Insecurity at the Community Level

Given the broad array of factors contributing to CFS, no single indicator can predict whether a community is fully food secure. An increased interest in the relationship between place of residence and food security has generated a growing body of literature on the topic, most of which is based in the United States.

In one review article, Carter and colleagues (2013) synthesized and critically appraised literature examining local environmental characteristics in relation to individual- or household-level food insecurity. In the 18 articles reviewed, the investigators divided place of living on an urban-rural continuum. While some studies found rural living to be associated with lower odds of food insecurity, others found the opposite, or that urban living was associated with lower odds of food insecurity.

These authors also reviewed studies on the relationship between social cohesion, a dimension of social capital, and residents' food security experience. Four of the eight reviewed studies

found that social cohesion, at the individual and community levels, had a protective effect against food insecurity, particularly among low-income respondents who are more likely to report experiencing food insecurity using the USDA food insecurity survey (see chapter 3). The authors' review of the effects of the types of food shopping outlets in a respondent's neighborhood and prices of food in these outlets finds that this line of research has yet to establish conclusive evidence linking local food environment and household food security.

Overall, Carter and colleagues found little consistency in how "place of residence" is defined across the studies under review—some authors focus on one neighborhood, while others examine multiple counties in one paper. They argue that more context-specific definitions of predictors and a specific focus on living location are needed in future work examining the relationship between place and food insecurity.

CHAPTER 3 - MEASUREMENT: AN OVERVIEW OF THE COMMUNITY FOOD ASSESSMENT

The Community Food Assessment (CFA) is a widely used strategy to assess and capture a range of indicators used to interpret CFS, such as perceptions of food access and barriers and opportunities for change. Findings from CFAs have been used to help organizations or local governments develop food plans. Food plans, sometimes called food action plans, are documents that outline a given city's or regional government's goals for improving its food system and addressing the issues found as a result of the CFA process. To date, the most widely applied Community Food Assessment guide is the USDA's Community Food Security Assessment Toolkit (Cohen, Andrews, and Kantor, 2002). The Toolkit provides a set of measurement tools for assessing different components of CFS and for measuring development and evaluation of related interventions. CFAs conducted with Toolkit measures include the Lopez et al. (2008) assessment of 169 Connecticut towns and the Bletzacker et al. (2009) assessment of a region in Appalachian Ohio. References for these studies may be found at the end of this report.

In 2002, another CFA guide was published by the Community Food Security Coalition (Pothukuchi, Joseph, Burton, et al., 2002), which designed its guide for community activists who have some type of organizing experience. While the guide does not necessarily require extensive research experience, the authors recommend that community activists partner with academic institutions for this skill set. In contrast to the USDA guide, which is a good resource for identifying data sources, the CFSC guide emphasizes step-by-step advice for those who work directly with their constituents. It also presents case studies to demonstrate CFA processes and outcomes.

Before detailing the components of a CFA, it is important to note that these assessments may be as large or as small as the team believes appropriate for its research questions and resources. The assessment team should carefully consider the trade-offs between specificity and broader policy effects for the communities under study. Smaller communities may serve as pilot sites, and the findings may be presented within the context of a larger geographic region. Many CFAs have been conducted, but the methods may not always have been rigorous nor the data sources scientifically validated. It is likely that a shortage of validated studies has caused a general inability to compare across CFAs. While scientific validation is a worthy goal, few groups can avail themselves of the necessary expertise and/or resources to meet that goal. More research and analysis are needed in this area to help balance these considerations, and support from funders would help to further this work.

I. Exploring CFA Components

Defining Community

Before beginning a CFA, assessor groups must identify their community. In many CFAs, communities are well-defined geographic areas. This decision limits the CFA scope but makes it more manageable. Geographic boundaries also often align with political boundaries, a situation that benefits CFAs by aligning assessments with regions where policymakers may make change (Pothukuchi et al., 2002). Though various assessor groups will define their communities geographically, the size of their communities will necessarily vary. In a review of nine CFAs from

around the nation, geographically defined communities varied from a single neighborhood to select zip codes within a city, entire cities, and a collection of counties within a state. Across these CFAs, population sizes ranged from 24,000 to 4.7 million people (Pothukuchi, 2004).

Some scholars have discussed the use of social, economic, and cultural characteristics as a basis for defining communities (Anderson and Cook, 1999). Findings from CFAs using socially or culturally defined communities, however, may not have far-reaching policy effects. Advocates who aim to improve the CFS status of particular socioeconomic or demographic groups are urged to frame these groups' needs within the context of a broader geographic community.

Developing the Community Profile

Once the community is defined, CFS assessors create a demographic and economic community profile. The purpose of a community profile in a CFA is to paint an accurate picture of the whole community, not just those who experience poverty or are at risk of food insecurity. Data on impoverished households experiencing food insecurity, however, are always included as baseline information in a CFA.

CFA community profiles also include a community's demographic information, such as race, gender, age groups, immigration status, household size, and structures. Community-level socioeconomic contexts, such as the data on local average wage and cost of living, provide more context for explaining why some households become food insecure, thus pointing out gaps in programs and services that would lead to greater CFS. These characteristics can be adjusted to fit a CFA's scope by, for example, changing the level of analysis from state to county, city, neighborhood, or specific zip code(s).

It is understood that a high-poverty community experiences greater food insecurity than a more prosperous one. However, Mammen and colleagues (2009) found that poor rural households in prosperous states experience more persistent food insecurity than equally poor households in less prosperous states. Using a material hardship index, the authors found that low-income families in prosperous states frequently make trade-offs between food, housing, and heating costs, even when their household income exceeds the threshold for government assistance. These findings illustrate how household- and community-level factors interact to create food insecurity, and that it is not only a problem experienced by communities with high poverty rates.

Community Food Resources

After assessors define the community and develop a community profile, they will describe the array of community food resources. These resources generally fall into two categories: food assistance programs and retail food resources. These resources are described briefly below.

Food Assistance Programs

Food assistance programs are vital for individuals and families when they cannot purchase food through regular market channels. CFAs should account for the federal assistance available in the defined community. This includes federal programs such as SNAP/Food Stamps, WIC, and the School Lunch Program. If the state/county/city has its own programs independent of federal funding, these programs should be added. Assessors should collect information

on a community's total number of participants (or rates) in public food assistance programs, number of enrollment offices for each program, and office locations. Federal program data may come from USDA's Food and Nutrition Services (FNS) or the department of health and human services in each state.

Assessors should also include emergency food services provided by private charities, such as food pantries, soup kitchens, food banks, shelters with meal services, and food rescue programs. They should collect data on the locations of services, total number of participants, and other relevant information, such as number of days or service hours.

Retail Food Resources and Affordability

Retail food resources are arguably the most important sources of food for most people. Retail stores include supermarkets (annual sale ≥ $2 million), grocery stores (annual sale ≤ $2 million), convenience stores (including gas stations that sell food), specialty stores (such as butchers and bakeries), and consumer food cooperatives and farmers' markets (USDA's Agricultural Marketing Service maintains a database of farmers' markets around the nation). CFA data should include the number of stores in each category, as well as their locations and hours. In addition, assessors should identify food retailers that accept federal food assistance benefits in the community. USDA's Food and Nutrition Service (FNS) maintains a public database of retailers that accept SNAP benefits (USDA FNS, 2014).

If community residents do not use regular channels of retail or food assistance programs, CFS assessors should account for alternative food collection methods. Possible alternative strategies may include field gleaning work, hunting and fishing, and backyard food production.

There are alternative strategies for learning about retail resources, such as through surveying community residents about shopping patterns or determining the cost of basic food items through a market basket analysis (systematic cost comparisons of essential food items across grocery stores). While these approaches may provide rich information for a CFA, they involve primary data collection and are often highly resource-intensive. They are helpful but not always necessary for CFAs.

Community Food Resource Accessibility

Once CFS assessors account for community food resources and affordability, the next step is to identify issues of access: potential barriers or problem areas that limit access to food. As Cohen et al. describe in the Toolkit (2002), key accessibility questions include:

1. Are food resources located near low-income neighborhoods?
2. Is public or private transportation available between resources and low-income neighborhoods?
3. What barriers limit people's use of community food resources?
4. Does the community have the infrastructure necessary to deliver federal food assistance benefits effectively?

CFS assessors can answer the first two questions through data collected by the US Census and local transportation authorities. Lack of transportation is a well-known barrier to food access (Block and Kouba, 2006; Sharkey, Horel, and Dean, 2010). The census collects data on private vehicle ownership by household, and assessors should identify this data source to determine whether data of vehicle ownership per household

(at least one vehicle per household) is available. Local transportation authorities typically maintain maps of public transportation routes. The cost of public transportation may also be a data point of interest. If public transit is expensive, it becomes a barrier rather than facilitator of access to food. Private transportation services (such as those for elderly residents) and the associated service routes should be identified. These resources may be located through local departments of social services or other entities.

Finally, since answers to the last two questions should come from community residents, original data collection is often time-consuming and expensive. These data, however, can shed light on factors often missing from larger CFS surveys. For example, we assume that car ownership weakens barriers to access because drivers can more easily get to food retailers far from home. For families living below the poverty line, however, having a car increases expenses and reduces disposable income available for food. Issues such as stigma (perceived or real), inconvenient hours of social service agencies or markets, and lack of information about eligibility for benefits present real barriers to access that may only become apparent through focus group discussions or in-depth interviews. Though assessors should consider the trade-offs of using secondary and/or existing data, they should also understand that primary data are beneficial, though not necessary, in completing their own CFA.

HOUSEHOLD FOOD SECURITY

Because a community consists of households of individuals, it cannot be truly food secure if any one household is food insecure. Data on household food security are therefore baseline indicators for community food security status. The best way to collect food security data is to conduct a household food security survey with a representative sample of households in the community in question (Cohen et al., 2002). Scientifically validated survey instruments are readily available for practitioners. (Please see the section "Defining Community" at the beginning of this chapter for more detail on defining community before conducting a community food assessment.)

The USDA initiated the US Food Security Measurement Project in the early 1990s, which culminated in the Household Food Security Survey Measure (HFSSM) in 1995 (Nord and Hopwood, 2007). This 18-question survey captures three types of experiences related to food insecurity and records responses qualitatively (e.g., open-ended responses) and quantitatively (e.g., yes/no responses). These three food insecurity experiences are:

1. Anxiety that the household food budget or food supply may be insufficient to meet basic needs.

2. Perceptions that food eaten by household members is inadequate in terms of quality and quantity.

3. Actual instances of reduced food intake and the consequences (e.g., physical sensation of hunger or weight loss) of reduced food intake for adults and children in the household (Bickel, Nord, Price, et al., 2000).

USDA's Economic Research Service (ERS) sponsors the food security component of the Current Population Survey (CPS), administered by the US Census Bureau. To supplement CPS data, food security surveys are administered annually. Table 3 includes 18 questions from the HFSSM in the USDA report *Household Food Security in the United States*, 2009 (Nord,

Coleman-Jensen, Andrews, et al., 2010). Taken together, responses to these questions reflect the different components of the food security definition put forth by the USDA and the FAO (see Table 1 on page 7 of this report).

CFS researchers may use a six-item short form to assess household food insecurity. This form includes only questions 2, 3, 6, 7, 9, and 10 from Table 3. The results from studies using the short form have been found to be valid and reliable, with high inter-item correlation between the responses and food security level. However, the question on balanced meals (3) often yields inconsistent results, suggesting that there may be some distinct understandings of a balanced meal across cultures/groups (Blumberg, Bialostosky, Hamilton, et al., 1999; Gulliford, Mahabir, and Rocke, 2004; Radimer and Radimer 2002).

COMMUNITY FOOD PRODUCTION

As a complement to strong federal nutrition safety net and emergency food assistance programs, local food production may alleviate some short-term food insecurity and hunger. In the long term, strong community food production resources can boost the effectiveness of federal food assistance and education programs through such measures as increased availability of high-quality, affordable food, strengthening economic and social ties between farmers and urban residents, and channeling a larger share of resident food spending back to the local economy (Cohen et al., 2002). Though many CFAs may be able to answer only one or two, key assessment questions for community food production include:

1. Are there local food production resources: community gardens, school gardens, community-supported agriculture, farms, dairies, fisheries, and other value-added facilities?
    a. Do these production units have a local distribution network that allows the food to be distributed and sold primarily within the community of interest (e.g., farmers' markets or CSA programs)?
    b. Do institutional food service outlets such as schools, colleges, and hospitals use locally produced foods?
2. Does the community politically and financially support local food production enterprises?
3. Is locally produced food available and affordable to all community members, particularly those who are low-income? If so, SNAP recipients could use their benefits at local farmers' markets or in CSA programs.

Data collected under these questions may include the number and location of local food production resources. These questions address issues related to food production and distribution, which in turn affect food availability, accessibility, and affordability for low-income residents. Negative answers may indicate a potential community food system problem (Cohen et al., 2002:53).

Given the CFS focus on environmental sustainability, CFA assessors may wish to include indicators on whether farms engage in sustainable practices. The details of this topic are beyond the scope of this review, but for those interested in exploring this topic further, please see the additional resources section at the end of the report.

II. Putting It All Together: CFAs in Action

The goals of developing CFS theory and measures are to identify what food secure communities

*Table 3. Questions Used to Assess Household Food Security in the CPS Food Security Survey**

1. "We worried whether our food would run out before we got money to buy more." Was that often, sometimes, or never true for you in the last 12 months?
2. "The food that we bought just didn't last and we didn't have money to get more." Was that often, sometimes, or never true for you in the last 12 months?
3. "We couldn't afford to eat balanced meals." Was that often, sometimes, or never true for you in the last 12 months?
4. In the last 12 months, did you or other adults in the household ever cut the size of your meals or skip meals because there wasn't enough money for food?
5. (If yes to question 4) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?
6. In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money for food? (Yes/No)
7. In the last 12 months, were you ever hungry but didn't eat because there wasn't enough money for food? (Yes/No)
8. In the last 12 months, did you lose weight because there wasn't enough money for food? (Yes/No)
9. In the last 12 months did you or other adults in your household ever not eat for a whole day because there wasn't enough money for food?
10. (If yes to question 9) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?
11. "We relied on only a few kinds of low-cost food to feed our children because we were running out of money to buy food." Was that often, sometimes, or never true for you in the last 12 months?
12. "We couldn't feed our children a balanced meal because we couldn't afford that." Was that often, sometimes, or never true for you in the last 12 months?
13. "The children were not eating enough because we just couldn't afford enough food." Was that often, sometimes, or never true for you in the last 12 months?
14. In the last 12 months, did you ever cut the size of any of the children's meals because there wasn't enough money for food?
15. In the last 12 months, were the children ever hungry but you just couldn't afford more food?
16. In the last 12 months, did any of the children ever skip a meal because there wasn't enough money for food?
17. (If yes to question 16) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?
18. In the last 12 months did any of the children ever not eat for a whole day because there wasn't enough money for food?

*Questions 11-18 asked only if the household includes children age 0-17

look like and where they may exist along a CFS continuum. As identified in the previous chapter, the different dimensions of CFS reveal a concept for which there are no absolute measures. As a result, there are a variety of approaches to conducting CFAs.

Table 4 summarizes three comprehensive CFAs from the United States. They are considered comprehensive because they evaluate multiple dimensions of CFS and engaged stakeholders from different sectors of the food system. Finally, the authors make policy recommendations based on their findings. These CFA examples also illustrate that comprehensive CFAs often require significant research expertise and sophisticated statistical tools. Accordingly, Burgan and Winne (2012) provide CFS advocates with examples of alternative approaches to comprehensive CFAs in *Doing Food Policy Councils Right: A Guide to Development and Action*.

III. Additional Measures for Consideration

Recent research indicates that social capital is associated with individual food security in the US (Martin, Rogers, Cook, et al., 2004; Garasky, Morton, and Greder, 2006; Mammen et al., 2009; Dean, Sharkey, and Johnson, 2011). Social capital is a "measure of trust, reciprocity, and social network," and it is applicable to individuals, households, and communities (Martin et al., 2004). Garasky et al. (2006) and Martin et al. (2004) found that the more a household could count on its friends or family for help (higher levels of informal social support), the less likely it was to be food insecure. Mammen and colleagues found that rural low-income families were able to stretch their limited budget by pooling resources with members of their informal social network. Dean, Sharkey, and Johnson found that low levels of perceived social capital and personal experiences with social disparity were associated with food insecurity in rural regions of Texas. All three studies discovered statistically significant effects of self-reported social capital on household food security. While these findings indicate a role for social capital in food security, more research is needed to understand whether aggregate community-level social capital has an effect on CFS.

CFS researchers may be able to identify and measure indicators of social relations between groups in the community, since social capital "inheres in social relations" (Cattell, 2001). Research in this area, particularly in identifying measures for social capital, is still growing, but large-scale surveys like the General Social Survey contain questions that shed light on factors associated with community-level relationships, such as community social cohesion and social control. Researchers may also consider using qualitative methods to explore the mechanisms through which social relations in a given community work to improve food access. Studies of the relationship between social capital and health (see Kawachi, Kennedy, and Glass, 1999; Cattell, 2001, Harpham, Grant, and Thomas, 2002) provide examples of how this broad concept works.

Table 4. Examples of CFAs: Community Definition, CFS Indicators, Approach, and Relevant Stakeholders

CFA Title	Food for Growth: A Community Food System Plan for Buffalo's West Side	Humboldt County Community Food Assessment	2012 Community Food Security in Connecticut: An Evaluation and Ranking of 169 Towns
Authors, Date	Almeida et al., 2003	Stubblefield et al., 2010	Rabinowitz and Martin, 2012
Community Definition	West Side of Buffalo (defined as West Side Target Area, with boundaries defined by city streets)	County	Towns
CFS Indicators	CFS in Buffalo's West Side using: Existing economic and social conditions (a demographic profile using measurements on population, household composition, housing income and poverty immigration, and racial and ethnic diversity) Food availability and cost vs. other neighborhoods Resident and food business food security perceptions	Poverty, food insecurity, and other obstacles to food access such as uneven number of food stores in different parts of the county and limited transportation options to travel to stores	Population At-Risk Ranking Food Retail Ranking Food Assistance Ranking Overall ranking
Approach: Data & Methods	Combination of quantitative and qualitative data	Secondary data for different county food system sectors (US Census; local health and nutrition-related organizations; existing reports and data sets) and primary qualitative and quantitative data from a small research project, including spatial analysis coding. Methods modeled after USFA CFA Toolkit.	Statistical method of combining multiple variables into a single indicator
Funding & Stakeholder Involvement	Research conducted by graduate students at the University of Buffalo Department of Urban and Regional Planning for the Massachusetts Avenue Project (MAP), Buffalo, NY. In-Kind Support: from Buffalo's Weed and Seed Program for report-printing. Several elements of the plan have been implemented by MAP, the sponsoring organization.	CFA as part of a larger project by the California Center for Rural Policy (nonprofit at Humboldt State University) and funded by the California Endowment "Addressing Food Insecurity with Dignity." Also involved were Institute for Spatial Analysis, representatives from the business and economic development community, farmers, local food advocates, people who run community gardens, food banks, food access and nutrition communities, social services groups, the local Latino and American Indian population, and representatives from various geographical regions of Humboldt County.	Funding: University of Connecticut Zwick Center for Food and Resources Policy; The Cooperative Extension System, and State of Connecticut Food Policy Council. Advisory: Various academic departments at the University of Connecticut.

CHAPTER 4 - CONSEQUENCES OF LOW COMMUNITY FOOD SECURITY

There is a robust body of literature that documents the effects of food insecurity on both children and adults at the individual level, specifically demonstrating adverse effects on learning, growth and development, and behavior. These effects were discussed in detail in the 2009 edition of this report.

Significantly less research documents the broader effects of food insecurity at the community level, such as how it relates to interpersonal relations and the well-being and prosperity of communities. This chapter reviews this work, including the transition from an individual/household perspective to one that focuses on impacts of food insecurity among communities and specific populations.

I. Transitioning to a Community Perspective

Hamelin et al. (1999) expand beyond the effects on individuals to investigate how and whether these consequences contribute to broader social implications of food insecurity. Through focus groups and individual semistructured interviews with 98 low-income households in Quebec City and its rural surroundings, Hamelin discovered three categories of consequences of food insecurity at the household level: physical impairment (defined by respondents as reduced learning in children and adults, loss of productivity, and sacrificing medication to food), psychological suffering, and socio-familial perturbations, described as disrupting household dynamics, distorted and unsustainable means of food acquisition and management, and modification of eating patterns and related rituals.

Unique to this study was the focus on implications at the societal level. Here, respondents noted effects such as an increased need for health care, intensified feelings of exclusion and powerlessness, erosion of the transfer of knowledge and practices, and hindrance of conviviality. Food insecurity was noted to decrease participation in social activities, and several respondents felt that the use of food pantries reinforced the development of a two-tiered food distribution system that separates those with adequate money for food from those without. Extrapolating these consequences to a broader scale, chronic experiences of food insecurity could intensify conflicts in society and hinder social or economic development.

Hamelin and colleagues also find that respondents who remained food insecure for a sustained period of time adapted to using community food resources efficiently and overcame prejudices against food assistance. Respondents also admitted, however, to engaging in several negative and illegal behaviors in order to feed their families. In analyzing the patterns and consequences of food insecurity from study interviews, the authors stated that "eventually, the search for food takes precedence over previously held values" and that negative behaviors to food procurement "may indicate the need for some guidelines to assess the social acceptability of practices that are used and/or fostered to assure the food security of the majority."

This study marks a transition in thinking about food insecurity as a state that simply affects an individual or family, to one that may have a significant impact on societal functioning and prosperity as a whole.

II. Population-Specific Impacts

Unfortunately, there is a lack of US-based research that is similar to Hamelin's study, and most US studies that address food insecurity from a broader perspective are limited to the Alaskan Native and Native American populations. The communities described in these studies are generally small, clearly defined local populations with well-recognized food security concerns. Together, they represent a good starting point for investigating this issue in the United States.

Studies that have looked into the community-wide effects of food insecurity among American Indian/Native American populations have cited a wide range of impacts including cultural changes, shifts in food production and consumption patterns, increases in chronic diseases and social problems, strained relationships, and alterations in the transfer of traditional skills to younger generations (Bauer, Widome, Himes, et al., 2012 Fazzino, 2010; Ford, 2009).

According to Fazzino (2010: 407), the replacement of the traditional Native American food production system with non-native mechanisms has its historical roots in the policy of assimilation. The assimilation policy practices decimated Native American food systems with the intention of eliminating Native tribes as unique cultural groups. Such practices were justified in the name of creating a more efficient food system for Native tribes. The externally imposed food systems have created a dependence on non-Native mechanisms to meet nutritional needs, which has greatly limited the autonomy of the Native Americans (Fazzino, 2010). The US commodity-oriented food production system has reduced the availability of culturally acceptable foods, a change that in turn threatens tribal food security. Research investigating this impact on the Tohono O'odham tribe from Arizona suggests that these changes have contributed to the gradual but marked decline in traditional styles of farming, food production, and traditional food consumption. In addition, these changes have led to less physical activity and coincided with negative health outcomes, including an increase in diabetes and obesity (Fazzino, 2010).

Native American Communities

Among Native American families living on the Pine Ridge Reservation in South Dakota, the prevalence of food insecurity and its consequences were found to have an effect on children's dietary intake, parents' perceptions of barriers to healthful eating, and parents' participation in *ti ole* (going to another's house for food in exchange for help around the house). Compared to their food secure counterparts (children whose parents responded affirmatively to fewer than two items on the six-item short form of the Household Food Security Scale), children from food insecure households had more frequent consumption of hot or other ready-made foods from a convenience store or gas station and increased consumption of pizza and fried chicken. Parents from food insecure households were more likely to report lower variety and poorer quality of fruit and vegetables in the stores where they bought groceries. In addition, food insecure parents were more likely to report that their family did not like fruits and vegetables and that it was difficult to find time to cook in the evening (Bauer et al., 2012).

In 2006, extreme climate-related conditions interacted with the food system to affect the food security of Inuit living in small rural communities in Canada. This event provided an opportunity to identify and characterize some

of the processes and conditions shaping vulnerability and to establish a baseline to consider future vulnerability, particularly the long-term implications of climate change (Ford, 2009). Research on these factors found that Inuit generally rely on traditional means of acquiring food, such as hunting and fishing, as well as on less traditional sources, such as store-bought food, which is becoming more popular among the younger generation.

Furthermore, several adaptive mechanisms emerged as a result of compromised traditional food availability. These included increased consumption of store-bought food; reliance on family members to share store-bought food; food bank use; purchasing poor quality store- bought food; and going without food for a number of days. Climatic and social changes that contributed to increased food insecurity also led to a change in community dynamics where fewer young people learned traditional skills such as hunting, land cultivation, and food preparation from older generations. The lack of these skill-transfer activities put generational relationships under strain, even at a time when the population was expanding.

Alaskan Bush Communities

Global environmental changes have been shown to negatively impact the food security of those living in rural Alaskan bush communities (Loring and Gerlach, 2009). As residents of these communities also largely prefer to maintain a subsistence lifestyle, they are subject to the same types of vulnerabilities as Native American populations. In addition to climate change, the food security of those living in bush communities is reduced by industrial land development; oil, gas, and mineral mining; and myriad other sociopolitical, cultural, and economic factors. Taken together, these factors have limited the access to and use of locally available resources such as wild fish and game. This threat to the community's food security has resulted in households shifting consumption patterns away from seasonal harvests of wild foods to imported, store-bought foods. This shift in eating patterns has coincided with a sharp rise in chronic disease prevalence in these communities, which may be linked to both a decrease in consumption of highly nutritious wild fish and game, and a decrease in the beneficial physical activities of hunting and fishing associated with a subsistence lifestyle.

Beyond the health impacts of this changing environment and food system, the decrease of hunting and fishing behaviors can also lead to a destabilization of gender roles and relationships of power and reciprocity (Loring and Gerlach, 2009). This argument proposes that degraded ecosystems can also degrade human communities by reducing local control over the quality, safety, and appropriateness of food; decreasing self-reliance by increasing dependency on the global food and fuel network; and increasing vulnerability through external linkages in the food chain that expose local systems to increased risk and uncertainty. This transition eliminates many people's traditional roles in the food chain, which are fundamental to maintaining individual and community health and stability. Reliance on nontraditional foods also exposes people to new vulnerabilities and economic dependencies: access to food becomes determined by one's ability to pay, and people's health and livelihoods become vulnerable to unexpected disruptions or variability in supply, pricing, and quality.

Conclusion

Though limited in number, these studies demonstrate that the effects of community food insecurity extend well beyond the individual and can have lasting impacts for communities and across generations. While the studies on Native American and Alaskan Native populations provide a starting point to understanding these broader effects, there remains an incredible need for further research and investigation into this facet of food insecurity across communities in the United States.

CHAPTER 5 - FOOD POLICY COUNCILS

Food policy councils (FPCs) are made up of stakeholders from various segments of a local, tribal, provincial, or state food system. FPC members may represent the broad categories of food producing, processing, distribution, consumption, and waste recovery, as well as others not in a supply chain (Harper, Shattuck, Holt-Giménez, et al., 2009). These councils contribute to community food security by examining the operation of local food systems and providing recommendations for improvement through policy change at organizational, local, state, and even federal levels. Although FPC names seem to link them to a specific geographic jurisdiction, city, county, or state, actually FPCs work on policies at multiple levels, ranging from the federal Farm Bill to state food production regulations, municipal zoning codes, and even institutional food services and programs (Scherb et al., 2012). The scope of this work often extends beyond the public policy arena, and FPCs may engage in direct service projects and programs, facilitate networks of food system stakeholders, and educate the public about the food system (Schiff, 2008).

Recognizing their growth and potential impact, food system researchers and practitioners have increased their efforts to examine the role of FPCs in improving the sustainability of food systems and community food security. To date, peer-reviewed research on FPCs is limited, but reports about the operational structure and experiences of earlier FPCs have increased in number, scope, and analytical depth (e.g., Harper et al., 2009; Schiff, 2008). Food system practitioners and practice-focused scholars have also produced research to document the successes, challenges, and experiences of FPCs and to develop technical training materials for new FPCs.

This chapter summarizes research on food policies, with a look back to the history of FPCs in North America; differentiates between types of FPCs, whether governmental, nongovernmental, or hybrid, and the associated advantages and disadvantages of each; and explains how council work can bring about food system change.

I. Food Policies and the Food System

Hamilton (2002) defines food policy as "any decision made by a government agency, business, or organization which affects how food is produced, processed, distributed, purchased and protected." Dahlberg (1994) adds that any policies that regulate food recycling and waste streams are also food policies. Policies are not limited to codified government actions, and "inactions by government" both by design and neglect may also "influence the supply, quality, prices, production, distribution and consumption of food" (Winne, 1997, cited in Harper et al., 2009).

Food policies encompass a broad range of humanitarian, public health, and environmental challenges, which may include hunger prevention, rural economic development promotion, food safety and protection of food supply, reversing the obesity and diabetes epidemics, and averting catastrophic climate change. Addressing any of these challenges will aid the development of healthy, sustainable, and equitable food systems (Yale Law School, 2010). Since no "Department of Food" exists within any governmental entity in the US, food issues are addressed by government

agencies in different departments at different policy levels. This piecemeal approach makes policy coordination a major challenge for stakeholders (Dahlberg, 1994). Better coordination of food-related policies across the food system is an important function of FPCs.

While federal agricultural policies like the Farm Bill create the framework for the national food system, stakeholders at regional, state, municipal, and local organizations have the potential to implement and improve organizational, local, state, and federal food policies (Winne, 2009, cited in Harper et al., 2009). These groups are increasingly examining their roles in influencing the food system (Clancy, cited in Scherb et al., 2012). For example, state and municipal policies, such as land use and transportation regulations, can affect farm viability and food access (Clancy, Hammer and Lippoldt, 2007); city zoning codes determine the location of supermarkets, grocery stores, and other food-retail outlets; and various public health programs and economic development strategies can influence the way producers and consumers participate in the local food system (Harper et al., 2009). According to a 2013 survey (Goddeeris and Hamm, 2013), assessing local government support for food system development, the average community has 3.6 policies related to food access and urban agriculture, a number found to be higher for municipalities (4) than for counties (2.4).

A Brief History of Food Policy Councils in North America

FPCs have formed at the local (city/town), county, state, and regional[1] levels. During the 1960s, organizations concerned about food policy issues at the state level emerged in the form of nutrition councils. The goal of nutrition councils was to improve policy coordination and implementation of programs that provide a dependable and nutritious supply of food to residents (Clancy et al., 2007). In the 1970s, states began to explore the option of establishing offices to address statewide food system issues ranging from farmland preservation to nutrition assistance program coordination (Clancy et al., 2007). At the time, few states were able to create statewide food policy councils; however, over time, the number of state FPCs has increased.

The motivation for developing local policy councils as a possible avenue for food system change grew out of the explosion in local food organizations and projects. By the late 1980s almost every larger US city or metro area had numerous food organizations, mostly nonprofits, working independently in such areas as community gardening, farmers' markets, and emergency food. Stakeholders' desire to have a "common table" around which they could identify community food challenges and opportunities catalyzed the organization of food policy councils, in part to have a means to engage government and to coordinate existing activities.

The number of FPCs surged at the turn of the 21st century. The first FPC was established in Knoxville, Tennessee, in 1982. In 2011, there were 96 identified in the US (Scherb, 2012). As of September 2014, there are 263 North American FPCs (200 in the US, 57 in Canada and six in tribal nations) at the state, provincial, regional, county, city, and tribal levels (Center for a Livable Future, 2014).

1 Regions exist at various scales. For our purpose, regional FPCs tend to include several counties.

II. Types of Food Policy Councils

While some FPCs operate as governmental organizations, others function as nongovernmental organizations (NGOs), or as a hybrid of the two types. Councils have come into being through state legislation, executive order issued by a mayor or governor, grassroots organizing, or even as a subsidiary of a nonprofit organization (Harper et al., 2009; Schiff, 2008). FPCs may also be organized and recognized according to where they are housed, for example, within a government agency, as a citizen advisory board to a government agency, as a stand-alone citizen advisory board, or as a nonprofit organization or grassroots group. Harper and colleagues (2009) also point out that it is possible to find FPCs created by government action that are not housed within government.

Organizations that function as FPCs may go by several different names. Harper and colleagues (2009) found "food policy council," "food advisory council," "food and agriculture coalition," "farm and food coalition," and "food system council" to be the most common. Leadership of the FPC varies depending on who initiated it (e.g., government appointed), where it is "housed" (e.g., nonprofit executive director), and how it is structured (e.g., revolving executive chairperson). At the city level, approximately 13 mayors currently have a dedicated position within city government focusing exclusively on food.

Further, there are many projects around the country that work on food policy but are not defined as food policy councils. For example, several states and counties have Healthy Eating and Active Lifestyle (HEAL) coalitions that bring together stakeholders from different sectors to work on programs and policies aimed at bolstering chronic disease prevention efforts. Regardless of differences in names, these organizations tend to share similar goals. They "serve as forum for discussions of food issues, foster coordination between sectors in the food system, participate in policy processes, and launch or support programs and services that address local needs" (Harper et al., 2009).

Advantages and Disadvantages of Different FPC Structures

According to Dahlberg (1994), who studied the experience of six FPCs (five cities, one county), local government relationships influenced the degree to which a council could achieve formal institutionalization. He found that institutionalization benefited councils through increased likelihood of having a budget, staff support, and power to review or plan food policies (Clancy et al., 2007; Dahlberg, 1994). In a separate study, Clancy and colleagues (2007) found that all eight of the government-affiliated FPCs in their study received in-kind support from local or county governments.

A strong relationship between an FPC and government improves FPC legitimacy in the eye of policymakers and helps councils advise government officials and make policy recommendations. The Baltimore City food policy director utilizes this strategy to inform the mayor of important food issues and prompt action by multiple city agencies that influence food system issues (Santo, Yong, and Palmer, 2014). A strong relationship appears to be an important element of an FPC, even when the FPC is not recognized through government orders but works closely with government officials. During the 1990s, the Philadelphia FPC was an informal private-public coalition, but it received strong support from the mayor's office. Like FPCs with legal standing through ordinances and city council resolutions, the Philadelphia FPC was able to serve in an advisory role to the city, including securing

mayoral endorsement of its food policy statement (Dahlberg, 1994).

The advantages of relationships with political offices, however, are not always guaranteed. For example, at times of political transition, such as a turnover of the mayor or governor, funding and political support for FPCs or food systems issues may be withdrawn (Dahlberg, 1994; Clancy et al., 2007; Harper et al., 2009). In a study of eight officially sanctioned FPCs, representatives from two inactive councils (Onondaga County and St. Paul) associated their end with a lack of funding (Clancy et al., 2007). In the same study, two state policy councils (Connecticut and Iowa) reported that political leadership contributed to the uncertainty of their future (Clancy et al., 2007).

An additional challenge for government-affiliated FPCs is that not all food systems stakeholders trust government institutions, and as a result, they may be less willing to collaborate on FPC policy initiatives (Scherb et al., 2012; Schiff 2008). Harper et al. (2009) report that half of the FPCs interviewed or surveyed (n=40) were formed as a result of grassroots activism. Grassroots political pressure can be critical especially when local political leadership is absent. Once those groups have undergone a critical examination of local food policies and food systems issues, they benefit by working with policymakers and seeking political recognition in order to effect system-wide change. The trade-offs associated with each type of FPC are summarized in Table 4 (Burgan and Winne, 2012).

Sometimes an FPC may transition from a government-sanctioned body to an organization. The Iowa Food Policy Council (IFPC) was formed by an executive order under Governor Tom Vilsack in 2000, and several subsequent executive orders were issued in the years that followed to extend the work of the IFPC. Changes in governorship, however, led to the end of IFPC's activities. From 2008 to 2010, more than 165 stakeholders representing food system sectors across Iowa engaged in strategic planning and assessment activities to re-establish the statewide FPC. With a grant from the W. K. Kellogg Foundation, they succeeded: in 2011, the Iowa Food Systems Council was brought back, but this time, it operated under 501(c) (3) nonprofit status (IFSC, 2011). The examples above indicated that FPCs experience

Table 4. Strengths and Weaknesses of FPCs by governance type (structure)

Nonprofit	
Strengths	Weaknesses
More control by food advocates	Less public accountability
Fewer bureaucratic restraints	Lack of official standing with elected officials
Diverse sources of funding	Lack of staffing
Public Sector (Government) FPC	
Strengths	Weaknesses
Public accountability/legitimacy	Bureaucratic inefficiency
Public involvement	Political infighting
Access to government staff	Less attention to community desires
Coordination of FS across departments	Changing levels of support

ongoing concerns about (1) funding (Harper et al., 2009), (2) establishing strong, organized leadership (Clancy et al., 2007; Dahlberg, 1994), (3) navigating complex political climates (Harper et al., 2009; Leib, 2012).

A critical function of FPCs' systems-level work is to cultivate good working relationships with various stakeholders who share a common mission in their work (Clancy, 2012). Such relationships also include those who most directly make decisions about the food system. Through ongoing collaboration and dialogue, these stakeholders may be able to develop common goals. Whether part of the public sector or independent (and councils often are a hybrid of the two), it is vital for an FPC to have some connection to government departments and elected officials.

III. How Food Policy Councils Effect Food System Change

FPC Membership

After surveying and interviewing 40 FPCs, Harper et al. identified three types of strategies for FPC member selection: self-selection; application (which is reviewed by existing council members), and election/appointment/nomination made by existing council members or government entity. Furthermore, FPC governance structure may determine membership: independent, nonprofit group membership may be self-selecting, while public-sector council members are usually named by executive or legislative appointment. In general, council membership ranges from nine to 24 individuals, with an average of 12 to 14 (Clancy et al., 2007) and terms of between one and three years (Harper et al., 2009). A 2012 survey of FPCs (n=56) found that 63 percent of FPC members were self-selecting, 25 percent were nominated and voted in by FPC constituents, 27 percent were appointed, and 11 percent reported other methods of becoming a member (Scherb et al., 2012).

As state-level FPCs are often created by legislation, more than two-thirds appoint their members. At the county level, about 14 percent of FPCs have members appointed, with all other FPCs evenly split between self-selection, election/nomination, and application. At the city or county levels, more than half of FPCs in the study include self-selected members, 36 percent appoint their members, and 10 percent have prospective members apply for seats (Harper et al., 2009).

Table 5. FPC & Policy-Related Activities — Type and Percent Reported Engagement

FPC Activities	Percent of Surveyed FPCs Responding yes*
Identify problems that could be addressed through policy	47 (94%)
Educate public about food policy issues	39 (78%)
Develop policy proposals	31 (62%)
Lobby for specific proposals	24 (48%)
Participate in the regulatory process	17 (34%)
Endorse other organizations'/institutions' policies	16 (32%)
Implement policies	11 (22%)
Other (including general food system advocacy, formation of coalitions, and provision of expert testimony to decision-makers)	4 (8%)

*Responses not mutually exclusive

FPC Activities

FPC activities aim to strengthen the economic vitality of the local food industry, improve local food production, give more choices to citizens, and minimize food-related activities that degrade the environment (Clancy et al., 2007). FPCs may also engage in research to support their work. For example, Greater Kansas City Food Policy Coalition (GKCFPC) has actively conducted research and written policy briefs used to inform policymakers and the public. The group led the effort to modernize the urban agriculture zoning code for Kansas City, Missouri, in 2010. In 2011, the group provided expert testimony before the Missouri State Senate, which subsequently passed a farm-to-table bill that established a committee to evaluate the ways in which Missouri government institutions may increase the amount of food purchased from Missouri farmers (GKCFPC website, www.kcfoodpolicy.org, accessed December 8, 2013). Clancy et al. (2007) and Schiff (2008) report that most FPCs engage in education and advocacy efforts that increase community residents' knowledge of local food systems, as well as inform food systems stakeholders from diverse sectors about how their fields affect one another.

IV. Assessing the Policy Impact of Food Policy Councils

FPCs are meant to serve the ultimate goal of policy change for sustainable and just food systems. Assessing their actual impact, however, can be challenging. Across the FCP studies reviewed, respondents reported the importance and desire for FPCs to engage in policy work (Clancy et al., 2007; Dahlberg, 1994; Scherb et al., 2012; Schiff, 2008). In their survey of FPCs, Scherb and colleagues (2012) found that while the overwhelming majority of respondents (94 percent) have identified problems that could be addressed through policy, not all of them have been able to influence the policy process. Table 5 includes the most common policy activities reported by respondents (Scherb et al., 2012).

Scherb et al. (2012), identify several challenges that prevent FPCs from fully engaging in policy work (Table 6). While time and financial support appear to be the greatest challenges, the lack of training or skill in engaging in the policy process is also a major barrier. A number of identified challenges are consistent with previous studies, such as FPCs' lack of dedicated resources for policy work, lack of council authority or leadership to make policy

Table 6: Barriers to FPC Involvement in Policy Work

Cited Barriers	Percent Surveyed FPCs Reporting Barrier
Lack of time	38 (76%)
Lack of financial support for policy work	33 (66%)
Lack of training or skills in how to engage in the policy process	23 (46%)
Other (including lack of trust in government, inconsistent support of government, and differences of opinion across industries on how to approach policy)	14 (28%)
Concern about violating nonprofit tax status	4 (8%)
Policy is not a priority	1 (2%)

decisions, and lack of government affiliation to support policy initiatives (Dahlberg, 1994; Clancy et al., 2007; Schiff, 2008). In a recent update of the Food Policy Council directory, FPCs expressed interest in working on these challenges through more policy training and assistance with organizational development. (http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-a-livable-future/projects/FPN/directory/online/)

Further Research

As FPCs continue to grow in the US, more work is underway to evaluate their strengths, weaknesses, and opportunities for engaging in food policy development. Scherb et al. (2012) suggest a need for more systematic evaluations of the processes, short-term outcomes, and long-term impacts of FPC policy work. Practice-oriented research may enhance our understanding of how food policy stakeholders at different levels of the food system communicate and work with one another (Clancy, 2013). Lastly, FPC research suggests that few councils actively collect data to evaluate and inform their own efforts. As FPC staff and volunteers work to improve local, state, and regional food systems through policy and programs, they should also aim to identify, collect, and share data measuring the success of their work, including its impact on community food security.

CHAPTER 6 - PEER-REVIEWED EVALUATIONS OF CFS INTERVENTIONS

Systematic efforts to identify and evaluate CFS interventions are limited but growing in number. This chapter outlines research on the effect of various program models that seek to improve the availability, price, and consumption of healthy foods in low-income and food insecure households. The reviewed interventions include community supported agriculture (CSA) models, programs to accept federal food assistance at farmers' markets, community gardens, urban agriculture, and healthy food retail interventions. While these interventions represent an important set of CFS initiatives, they do not represent an exhaustive list of efforts in this area.

This chapter is structured differently than the previous ones because of the nature of the analysis and the fact that the number of peer-reviewed publications on CFS interventions remains limited. We describe a range of basic approaches to CFS followed by illustrative real-world case studies of each. As new interventions are developed, and existing efforts continue, future research will need to support this process through regular and ongoing evaluation of those that are most effective and scalable for achieving CFS goals.

Community Supported Agriculture (CSA) Models

Community supported agriculture (CSA) models have evolved as a way for local and small-scale farmers to share the "risks and rewards" of each growing season with urban and suburban consumers. Customers typically provide an upfront payment for a season's worth of produce, to be picked up and/or delivered on a weekly basis. While CSAs connect consumers to their food sources and give them access to fresh, local produce, the model has been criticized as elitist. Specifically, low-income consumers do not have the financial resources to pay $300 to $600 at the beginning of a season, let alone assume the risk that the harvests may not yield the anticipated amount of produce (Andreatta et al., 2008). Moreover, as federal food assistance benefits are distributed on a monthly basis, households receiving such benefits are not eligible to use them to purchase produce through a typical CSA model (both because the typical cost of a CSA far exceeds the average monthly benefits, and benefits cannot be used to purchase produce for a future date) (Cohen and Derryck, 2011). In some cases, research has found that low-income groups receiving partially or fully subsidized shares may also be inconsistent in picking up produce shares, as they may be less invested financially in the CSA programs (Hoffman et al., 2012; Andreatta et al., 2008).

Recognizing the structural barriers for low-income consumers' participation in CSA-type arrangements, some interventions have emerged to make these programs more accessible across income groups. In this section, we discuss the approaches, opportunities, and challenges of five different CSA models that have worked to achieve this goal.

ILLUSTRATIVE STUDIES

The Corbin Hill Farm Project Inc. (CHFP) Farm Share program provides locally grown and affordable produce to low-income residents through shareholder investment (Cohen

and Derryck, 2011). Aggregating products from nearby farms, CHFP works with community-based nonprofits in food insecure neighborhoods in New York City to recruit employees and clients to become shareholders. Moving beyond conventional CSA producer-consumer models, CHFP is designed to enhance community self-reliance and urban food sovereignty by enabling shareholders to become farm owners over time. The goal is for shareholders to participate in decision making about what produce is grown and how it is grown and distributed. Shareholders pay one week in advance, making the program manageable for those on federal food assistance, and may choose to put their share on "hold" at any time. A limited number of subsidized half-price shares are also available. Initiated as an LLC in 2009 with $770,000 investment from 11 individuals (72 percent of which was funded by African Americans and Latino[a]s and 50 percent by women), the business was able to leverage an additional $430,000 in loans. By the end of its fourth growing season in 2013, 872 shareholders had been enrolled (Derryck, 2014).

CHFP also began a Community Health Partnerships initiative, which uses a wholesale approach to reach the community's most vulnerable residents through hospitals, pantries, schools, and Head Start centers. These organizations purchase produce in bulk from CHFP to distribute to populations they serve or use in the meals they serve. In April 2014, the group added a 501(c)3 nonprofit branch, expanding on the initial investment of the core founders to allow funding from foundations, federal and state governments, and individual donors to operate the Farm Share and Community Health Partner programs. The LLC entity will continue handling financing for physical infrastructure (Derryck, 2014).

Using an existing community-based program to reach low-income households, the Farm to Family (F2F) pilot in Boston used urban Head Start (HS) programs as the distribution centers for subsidized, low-cost weekly produce shares (participants paid $5 for a $15 value) from a local farm (Hoffman et al., 2012). They enhanced their efforts with bilingual educational materials related to childhood obesity prevention, weekly newsletters with recipes, and farm field trips for the children. A total of 42 parents and 45 staff members enrolled at four HS sites, representing 12 percent of HS families and 49 percent of HS staff at participating sites (staff purchased subsidized shares in order to encourage parent buy-in). Among parents who completed post-intervention surveys, 71 percent indicated that the program made a difference in their families' eating behaviors, helping them eat more fruits and vegetables and access them at a lower cost.

Although the CSA coordinators worked through a local community group, they encountered significant challenges in getting families to pick up their farm shares and stay committed for the entire season. Evaluators suggest that focusing on families whose children are enrolled in school-based programming during the summer, and using low-cost mechanisms such as text messaging to remind families to pick up their shares, could improve participation rates.

A program called City Fresh, which offers food shares to consumers in Cleveland, was formed through collaboration among various grass-roots organizations (Ohri-Vachaspati et al., 2009). This network connects rural and urban growers with new markets and existing programs to help improve access to fresh, locally grown produce in low-income neighborhoods. They do this by creating market clusters known as "Fresh Stops," which are similar to farmers' markets but also include learning tables with recipes, nutrition info, and food sampling. Shares are available to consumers of all income levels, though subsidies— coming from surplus payments from higher-income shareholders, business sales, and

a grant—are available for families at or below 185 percent of the federal poverty level. The program also trains urban gardeners in entrepreneurial skills. After three years, the program has engaged over 750 families and individuals, 38 percent of whom qualified as low-income, and distributed 7,333 shares of produce from 26 farms. Participants who reported eating at least five servings of fruits and vegetables a day increased from 36 percent to 56 percent, and low-income participants reported a greater magnitude of increase.

Another novel approach to make CSA shares more affordable has come from the health insurance industry. Three (previously four) health insurance providers in Wisconsin offer a rebate to members who join a CSA program for vegetables (Balch, 2014; Jackson et al., 2011). Although not directly aimed at low-income residents, the program provides $100 to individuals and $200 for families when they sign up, reducing the share price by up to 40 percent. The program began in 2005 and, as of 2014, engages over 50 organic farms and (for the two providers willing to share data) over 3,768 participants. The rebate program is estimated to have increased CSA membership in the area by 35 percent, though farmers expressed—and participants reinforced—concern about the longevity of the program if the rebates end. Evaluators' recommendations to improve such a program include providing more education on seasonal eating, improving the efficiency of the rebate process, and tying the rebate to a percentage of the CSA share instead of a direct dollar value.

A final example of this work is a North Carolina–based CSA program designed specifically to reach low-income households (Andreatta et al., 2008). Funded through a $21,500 grant from the North Carolina Food Policy Council, the program paid farmers directly for CSA shares that were then provided free of charge to shareholders. Solving food insecurity was not an expected outcome of the project, but it did have a small effect in reducing food access problems. The 39 low-income families in the program altered their eating, shopping, and cooking habits during the project, and 91 percent of post-harvest interviewees reported that participation in the CSA program had reduced their overall spending on vegetables. The sense of community gained from being part of a social food network was another notable result.

Nevertheless, the project's long-term sustainability and scalability remain questionable, especially as its operations are entirely dependent on outside funds. Evaluators proposed that instead of providing shares for free, the project could make the upfront payment to the farmer, and then ask shareholders to make weekly repayments. This approach may decrease difficulties in getting shareholders to collect their shares, complete journals and post-program interviews (required for participants), and attend farm activities. They also suggested cooking and food preservation classes to help shareholders fully reap the benefits of CSA participation.

Farmers' Markets and Produce Stands

Farmers' markets are often promoted as a mechanism for strengthening community food security, as they offer healthy, local, and often sustainably produced foods; a higher profit margin for producers from direct sales; and a space for community building. Nevertheless, many farmers' markets are not easily accessible to low-income households owing to socioeconomic barriers, seasonal availability, consumer perceptions, location and transportation concerns, and other logistical challenges.

Prices at farmers' markets can be, or are perceived to be, higher than those at traditional food outlets, thereby targeting higher socioeconomic classes (Fang et al., 2013). This dynamic becomes even more apparent when consumers must travel to middle-class neighborhoods to visit farmers' markets, especially given limited vehicle ownership and poor access to markets by public transit (Markowitz, 2010).

One of the main reasons for the inaccessibility of farmers' markets, even when they are located in or nearby underserved neighborhoods, stems from a lack of equipment to process federal food assistance benefits. After the transition from paper-based vouchers to electronic EBT cards in the late 1990s, the redemption of SNAP benefits at farmers' markets dropped by nearly 50 percent between 1994 and 1998 (Bertmann et al., 2012). In 2010, only .01 percent of all SNAP benefits were redeemed at farmers' markets (Bertmann et al., 2012), a rate significantly lower than the 0.2 percent of food dollars that American consumers spend at farmers' markets (Cole et al., 2013). Only 12 percent of farmers' markets even had the ability to redeem SNAP benefits in 2010 (Oberholtzer et al., 2012).

Wireless terminals cost an average of $30/month, with service fees from $15 to $25 and transaction costs at $0.10 each (Buttenheim et al., 2012). Additional expenses include staff time to run the machine (8–10 hours/week), wooden tokens to use around the market, and materials for marketing the service (Krokowski, 2014). Lower signal reliability and density of potential customers further limit terminal feasibility in rural areas. Given that supermarkets and other SNAP retailers with landline access currently receive EBT technology and processing for free, various programs over the past decade have worked to dismantle this inequity and ease acceptance and use of federal food assistance at farmers' markets. Although program administration has been uneven, the USDA Farmers Market Promotion Program has attempted to address this problem by providing grants to receive machines for free or at significantly reduced rates.

Experts recognize that, despite their idealized appeal, farmers' markets are not a "silver bullet" solution to community food insecurity (Fang et al., 2013). The most successful ones in low-income communities have come from those driven by community-based support, public decision making, and inclusive organizing (Markowitz, 2010; Hicks and Lambert-Pennington, 2014). Even when market services and incentives succeed in attracting low-income consumers and increasing their consumption of fruits and vegetables, vendor concerns and benefits must also be addressed to ensure long-term success (Krokowski, 2014). Increasing SNAP acceptance and use at small and medium-sized markets is one strategy that has been found to improve farmers' sales more than at larger markets (Oberholtzer et al., 2012). Nevertheless, subsidies are usually required to offset some of the costs of serving these communities—whether to process federal food assistance benefits, provide incentives to low-income consumers, or encourage markets to buy unsold produce from farmers (Markowitz, 2010).

ILLUSTRATIVE STUDIES: MARKET LOCATIONS

One study set out to determine whether placing farmers' markets in low-income communities without any other intervention activities or additional financial incentives would result in increased fruit and vegetable intake by residents (Evans et al., 2012). Two farm stands selling a variety of locally grown and culturally familiar produce, and equipped to accept SNAP benefits and FMNP vouchers, were placed outside community sites in two urban, ethnically diverse, low-income communities in Austin, Texas, for

12 weeks. The 61 eligible residents surveyed before and after the intervention reported small but significant increases in their consumption of fruit, fruit juice, tomatoes, green salad, and other vegetables after the stands were present.

Another study looked at the economic impact of adding a new farmers' market in an underserved neighborhood in Ontario, Canada, and found that it contributed to the reduction in the price of healthy foods sold in that community by 12 percent in three years (Larsen and Gilliland, 2009). Despite these benefits, maintaining profitable markets can be a challenge, especially to farmers (Fang et al., 2013). Finding prices that are acceptable to both the consumer and producer is only the first barrier to improving this dynamic: Farmers' markets also face unique barriers that other food sales operations do not. For instance, limited hours of operation (both weekly and seasonably) and produce selection prevent farmers' markets from being a one-stop shopping experience, a barrier to time-strapped consumers working multiple jobs or without affordable child care (Fang et al., 2013; Markowitz, 2010).

ILLUSTRATIVE STUDIES: ACCEPTING FEDERAL FOOD ASSISTANCE

A research team in Arizona studied the impact of providing wireless terminals on farmers' markets' overall sales and the redemption of SNAP benefits (Bertmann et al., 2012). Selecting five outdoor markets for the intervention, they found that sales increased significantly at four of the five markets; and in at least three of these markets, the increase in overall sales more than offset the cost of the terminals.

A similar intervention in King County, Washington, found less promising results (Cole et al., 2013). This intervention was implemented across nine markets in lower-income regions and included subsidized EBT terminals for processing SNAP, efforts to encourage vendors to apply for acceptance of WIC cash value vouchers, and WIC staff who worked with market managers and vendors to provide outreach and support services. The effort resulted in 10 of 125 vendors installing an EBT terminal, and six markets with a central market terminal. In addition, 38 of 88 WIC-eligible vendors agreed to accept vouchers. Overall, the number of market stalls accepting SNAP rose from 80 to 143, an increase of 79 percent. Although market managers and vendors valued low-income consumers and were willing to accept some inconvenience to serve them, redemption rates remained low. Evaluators suggested that terminal interventions be complemented with broader structural changes, such as improving market accessibility (location, transportation, hours), and increased outreach to low-income shoppers to further improve participation. The marketwide terminal model offered an economy of scale that may reduce overall financial barriers. Nevertheless, without ongoing subsidies, the costs of equipment and fees would be too high for the intervention to continue. A similar study also found that a one terminal per vendor program is not sustainable at this time without subsidies (Buttenheim et al., 2012).

The San Francisco Public Health Department partnered with a local nonprofit organization, Roots of Change, and the local SNAP program to develop another innovative model (Jones and Bhatia, 2011). Beginning with technical assistance to one market in 2004, the SFPHD expanded its efforts to eventually mandate EBT and SNAP acceptance at all farmers' markets by 2007. From 2006 to 2011 (when the study was conducted), annual SNAP sales grew by an average of 57 percent each year.

ILLUSTRATIVE STUDIES: INCENTIVES

Subsidies are typically required to help alleviate the challenge in finding prices that are affordable to consumers while adequately compensating farmers, who often qualify as low-income themselves (Markowitz, 2010). One example of such a subsidy is the San Diego Farmers Market Fresh Fund Incentive Program, which matches—up to $20 per month— the value of federal food assistance benefits (SNAP, WIC, and Supplemental Security Income) for customers purchasing fresh produce at five farmers' markets in the city (Lindsay et al., 2013). The program engaged 7,298 eligible participants during the study period, 82 percent of whom had never been to a farmers' market. A large increase in diets self-reported as "healthy" or "very healthy" was observed among the 252 participants who completed both baseline and 12-month follow-up surveys. Meanwhile farmers and other market vendors reported that 48 percent of their total market revenue came from this program.

The Philly Food Bucks program provides another model for bonus incentive at farmers' markets (Young et al., 2013). Food Bucks were distributed in the form of $2 bonus incentive coupons for every $5 in SNAP benefits used (no upper limits) at farmers' markets (75 percent of redemptions) and by community organizations working with SNAP-eligible clients who may not frequent farmers' markets in the first place (25 percent of redemptions). After the first two years of the program, average SNAP sales per market in low-income areas more than doubled. Food Bucks users were 2.4 times more likely than nonusers to report increasing their produce consumption since becoming a market customer.

New York City's Health Bucks Program offers a similar financial incentive program for farmers' markets (Baronberg et al., 2013). The program provides SNAP recipients with a $2 coupon for every $5 spent using SNAP benefits at participating markets in high-poverty neighborhoods. Following implementation of the intervention, average daily per-market EBT sales among all markets accepting SNAP benefits rose from $114.55 in 2006 to $465.87 in 2009, and daily sales averaged $170.79 higher than nonparticipating markets. Further research is needed to examine the optimum incentive level needed to change SNAP purchasing patterns. Other programs such as Michigan's Double Up Food Bucks are conducting similar reviews of their initiatives (Hesterman, 2012).

Community Gardens and Urban Agriculture

Food gardens—both at the community and household levels—and urban agriculture have been promoted as a means for fostering community food security. Gardening enables participants to access and consume more healthy foods, and gardeners are twice as likely as non-gardeners to consume the recommended five servings of fruits and vegetables a day (Litt et al., 2011; Alaimo et al., 2008; Blair et al., 1991). However, critics state that there is little evidence to support the idea that gardens can make a significant difference in community food security and dietary quality (Hallsworth and Wong, 2013; McCormack et al., 2010).

Few, if any, community garden projects are intended to replace traditional food retail or would claim to lead to food self-sufficiency. The criticism that cities may not be able to meet all year-round food needs through urban agriculture and community gardening underappreciates the benefits of this approach as one part of the mix of solutions to reform the food system (Weissman, 2013; Evans and Miewald, 2013).

ILLUSTRATIVE STUDIES

Community gardening and urban agriculture add to the tapestry of food sources available in communities across the country that can improve household food security (Smith and Harrington, 2014). In one study, Philadelphia community garden participants reported savings of $700/year/family in food expenditures (Brown and Carter, 2003). Since community food security focuses on fostering individual and community well-being while also ensuring ecological sustainability, community gardens have much more to offer, and be judged on, than merely their potential outputs in terms of food production. Community gardens have been shown to improve neighborhood property values by encouraging economic redevelopment, particularly in distressed communities (Voicu and Been, 2008). Urban green spaces, which include gardens, have been associated with reduced neighborhood crime rates (Kuo and Sullivan, 2001). In addition to providing a place to be physically active, gardeners report improved psychological and social well-being from participation (Armstrong, 2000; Wakefield et al., 2007).

Community building may be the most important benefit of community gardens, particularly in how it brings together a diverse group of individuals to collaborate on work that requires knowledge, creativity, and flexibility to be "successful." A case study of Latino community gardens in New York City found that the gardens served more as cultural and social neighborhood centers than as agricultural production sites (Saldivar-Tanaka et al., 2004). A literature review of studies on home gardeners found that even those who faced food insecurity valued the food they grew "as much or more for its social value than for its contribution to their and their families' subsistence" (Kortright and Wakefield, 2011:40). Others point to social and political skills gained through community gardening, such as community organizing, fundraising, and consensus decision making, which can empower residents to become civically engaged (Travaline and Hunold, 2010).

Healthy Food Retail

New local, state, and federal policies and programs have been underway to improve community food security through improved physical access to and affordability of healthy food in retail environments. Some of these interventions focus on increasing the number of grocery stores and supermarkets in underserved urban and rural areas. While such efforts have been expanding rapidly across the nation over the decade, especially with the launch of first lady Michelle Obama's National Healthy Food Financing Initiative in 2011, very few evaluations of these interventions have been published (Donald, 2013; Cummins et al., 2014).

ILLUSTRATIVE STUDIES

One of the first-ever studies of the effects of a new supermarket on diet in a food desert was conducted in Leeds, England (Wrigley et al., 2003). Researchers found significant increases in food access (in terms of average distance traveled to a main store) and fruit and vegetable consumption among some groups. Nevertheless, in absolute terms, the dietary changes were small (about three more servings per week). Another study analyzing the effects of a new grocery store in a low-income neighborhood in a midsized city in California found no significant changes in food purchasing and consumption patterns six months after the store opened (Wang et al., 2007).

The first prospective quasi-experimental study on the impact of supermarket development in a low-income community compared changes in diet and psychological health in a community in Glasgow, Scotland, after a new supermarket was built (Cummins et al., 2008). After comparing the results with those of a control group, the study found little to no improvements in self-reported intake of fruits and vegetables, though there were small improvements in psychological health.

The Pennsylvania Fresh Food Financing Initiative (PFFI), one of the first healthy food retail programs in the US, was funded through a variety of projects throughout the state to stimulate grocery store development with loans and grants from 2004 to 2010. In an evaluation of an intervention funded through the PFFI, researchers found that the new supermarket studied improved residents' perceptions of food accessibility, though it did not change their reported intake of fruits and vegetables after six months (Cummins et al., 2014). Few residents indicated that they had adopted the store as their primary food store. Critics of the study design state that six months was not a long enough period of time to significantly change dietary habits; however, other intervention evaluations have had similarly short follow-up periods. Nevertheless, these findings confirm previous evidence that behavior change is not as simple as merely placing new stores in underserved neighborhoods; increasing the promotion of new stores and their products, as well as improving the affordability of foods within them, is also needed to change food purchasing and consumption patterns (Wang et al., 2007).

The first randomized controlled trial to focus on such in-store marketing efforts in low-income community supermarkets was recently published by Foster et al. (2014). It found that simple placement and product availability strategies significantly influenced the purchase of certain foods. Results from other studies assessing interventions aimed at smaller stores could also be valuable in improving larger store interventions. A review of small store interventions to improve healthy food access and consumption found that most trials showed a positive impact of multifaceted approaches to improving healthy food supply (through food provision and infrastructure) and demand (marketing) (Gittelsohn et al., 2012). More research is needed to determine the impacts of price manipulations, reviewers noted, as a relatively smaller number of interventions attempted to increase access through cost-related incentives.

Conclusion

This chapter reviewed the background, basic approaches, strengths, weaknesses, and evaluations of some of the most common types of community food security interventions. CSA program models aimed to improve food insecurity vary greatly, making it difficult to compare results from one to another. As noted by a literature review focused on evaluating farmers' market programs and community gardens, few well-designed research studies, using control groups, have been conducted to evaluate the impact of such efforts on nutrition-related outcomes (McCormack et al., 2010). Evaluations of healthy food retail interventions remain limited, and those that exist have very small sample sizes and follow-up periods.

Other innovative strategies that have been proposed to improve community food security include mobile produce vending (Brinkley et al., 2013), community kitchens (Iacovou et al., 2013), and gleaning (Hoisington et al., 2001). However, as few studies document and evaluate these approaches, especially with regard to their implications for addressing CFS, they were not included in the above analysis.

This literature review suggests the need for more evaluations, particularly well-designed quasi-experimental ones, of CFS interventions to better understand their impacts.

APPENDICES

Appendix A – Literature Search Methods

Our literature review strategy included three distinct phases. The first phase involved a systematic search of the literature according to a pre-set list of parameters, including publication dates, geographic locations, and type of research (e.g., peer-reviewed) (Tables 6 and 7). Given that this report is an update, these parameters complement and build off those explored in the 2009 report *Community Food Security in United States Cities: A Survey of the Relevant Scientific Literature*.

Through conducting the Phase 1 search, we recognized a lack of clear conceptual boundaries for identifying all relevant CFS-related research. We also found that valuable CFS work may not be captured within the peer-reviewed literature. Therefore, in order to more comprehensively capture this literature, we developed and implemented a second, more flexible search phase. This second phase included a broader set of resources (e.g., high-quality, yet informally published work) and new search terms that had emerged as relevant to CFS following the Phase 1 review.

The third phase built off the second one, and focused on gray literature that emerged during our review and evaluated the work of organizations or coalitions working to improve CFS (including data to support their claims). In large part, this literature is identified as resources for report users (Appendix B – Additional Resources), and may not be detailed within report chapters.

Details of each search phase are described below.

Phase 1: Pre-Set Parameters for Review of the CFS Literature

The following parameters were used to guide our initial review of the literature:

- With the exception of theoretical articles or thought pieces on the community food security movement, we searched for and reviewed literature published since 2009 in peer-reviewed journals and conference abstracts. This date was selected to best update the publication *Community Food Security in the United States Cities: A Survey of Relevant Scientific Literature*, published in 2009 and reviewing literature published up to December 2008.

- We sought academic articles that dealt with the history, frameworks and theory, measurement, magnitude and predictors, consequences, and interventions associated with the community food security concept.

- Using a snowball sampling method, we searched for academic articles that cited the earliest theoretical articles on the concept of community food security.

- We limited our scope by excluding articles that focused solely on food security or community development. However, we kept articles where the authors discussed potential application for CFS-related research or advocacy work.

- Given the small number of existing peer-reviewed publications on community food security, we reviewed several "gray-literature" publications by groups leading community food security work.

- We focused on literature published in the United States

Guided by these criteria, we searched for relevant literature using the following databases and search terms:

Table 6. List of Databases Searched (Phase 1)
Agricola
Academic Search Complete
Earth trends
General Science Full Text
Google Scholar
International Bibliography of the Social Sciences
NASD
Popline
PubMed
SCOPUS
Sociological Abstracts
Web of Science
Worldwide Political Science Abstracts
AFHVS CONFERENCE
APHA Conference

Table 7. Examples of Search Terms (Phase 1)
"Community Food Security" AND "History"
"Community Food Security" AND "Background"
"Community Food Security" AND "Progress"
"Community Food Security" AND "Theory"
"Community Food Security" AND "Frameworks"
"Community Food Security" AND "Conceptual Models"
"Community Food Security" AND "Social Capital"
"Food Security" AND "Social Capital"
"Food Security" AND "Frameworks"
"Food Security" AND "Conceptual Models"
"Community Food Security" AND "Theory" OR "Theories"
"Food Security" AND "Theory" OR "Theories"
"Food Policy Council" AND "Community Food Security"
"Local Agriculture" AND "Community Food Security"
"Community Food Security" AND "Measurement"
"Community Food Security" AND "Indicators"

Phase 2: Review of the CFS Literature Based on Emerging CFS Terms & Concepts

Following the Phase 1 review, we conducted a second review of CFS literature according to the following parameters:

- We reviewed publications by nongovernmental agencies that facilitate public-private partnerships in building CFS.
- We included community food assessments conducted by community-based organizations in collaboration with university research support.
- We conducted additional literature searches using new search terms that emerged during Phase 1.

Phase 3: Identifying relevant resources for practitioners

- During our review, the number of food policy councils and coalitions working on CFS grew nationwide. A large amount of gray literature analyzing the role and impact of food policy councils on CFS was subsequently published online. The third phase focused on reviewing and including this additional work.
- Many of the results from Phase 3 can be found in Appendix B – Additional Resources.

Appendix B – Additional Resources

The following lists outline additional resources that may be of interest to readers. These resources include open-access journal articles and gray literature that are not explicitly included in the body of the report.

Chapter 1. CFS History, Definition, and Frameworks

Food Worker Rights, Food Justice, and Working Conditions

REPORTS

- Food Chain Workers Alliance (2012) *The hands that feed us: challenges and opportunities for workers along the food chain.* Los Angeles: Saru Jayaraman. Retrieved December 16, 2013, from: http://foodchainworkers.org/wp-content/uploads/2012/06/Hands-That-Feed-Us-Report.pdf

- Food Empowerment Project (2012). *Slaughterhouse workers.* Retrieved December 16, 2013, from: http://www.foodispower.org/slaughterhouse_workers.php

- Human Rights Watch (2004). *Blood, sweat and fear: workers' rights in meat and poultry plants.* Washington, DC. Retrieved December 16, 2013, from: http://www.hrw.org/reports/2005/01/24/blood-sweat-and-fear

- Liu, YL. (2012). *Good food: good jobs for all.* New York, NY: Applied Research Center (ARC). Retrieved December 16, 2013, from: http://www.rockefellerfoundation.org/blog/good-food-good-jobs-all

- Liu, YL, Apollon, D. (2011). *The Color of Food.* New York: Applied Research Center (ARC). Retrieved December 16, 2013, from: http://www.foodfirst.org/sites/www.foodfirst.org/files/pdf/food_justice_2-11.pdf

- Giancatarino, A; Noor, S. (2014) *Racial Equity in the Food System.* New York, NY: The Center for Social Inclusion. Retrieved September 22, 2014, from: http://www.centerforsocialinclusion.org/wp-content/uploads/2014/07/Building-the-Case-for-Racial-Equity-in-the-Food-System.pdf

- Southern Poverty Law Center. (2010). *Injustice on our plates: Immigrant women in the US food industry*. Retrieved December 16, 2013, from: http://cdna.splcenter.org/sites/default/files/downloads/publication/Injustice_on_Our_Plates.pdf

BOOKS

- Holmes, S. (2013). *Fresh fruit, broken bodies: migrant farmworkers in the US*. Berkeley: University of California Press.

- Jayaraman, S. (2013). *Behind the kitchen door.* Ithaca, NY: Cornell University Press.

- McMillan, T. (2012). *The American way of eating: undercover at Walmart, Applebee's, farm fields, and the dinner table.* New York: Scribner.

Chapter 2. Magnitude and Predictors

Health Equity and Place Tools: Increase Access to Healthy Food, list of resources published by PolicyLink.
http://www.policylink.org/site/c.lkIXLbMNJrE/b.5136713/k.3948/Health_Equity_and_Place_Tool_Group.htm.

National Equity Atlas.
http://nationalequityatlas.org

Chapter 3. Measurement: Community Food Assessments (CFAs)

Embry, O.; Fryman D.; Habib, D. et al. (2012). *Whole Measures for Community Food Systems: Stories from the Field*. Portland, Oregon: Community Food Security Coalition. Retrieved from: http://www.wholecommunities.org/pdf/WholeMeasuresStories%20copy%202.pdf

W.K. Kellogg Logic Model Development Guide (2006) and Evaluation Handbook (2010).
http://www.wkkf.org/resource-directory/resource/2006/02/wk-kellogg-foundation-logic-model-development-guide

For examples of food plans and community food assessments, visit the Food Policy Networks Resource Database (www.foodpolicynetworks.org)

Healthier food retail: Beginning the Assessment in your community.
http://www.cdc.gov/obesity/downloads/HFRassessment.pdf

Robert Wood Johnson's evaluation tools and reports for their grantees. Excellent examples.
http://www.rwjf.org/en/research-publications/find-rwjf-research/2009/12/the-robert-wood-johnson-foundation-evaluation-series-guidance-fo.html

Chapter 4. Food Policy Councils

Harvard Food Law and Policy Clinic produced two comprehensive guides on state and local food policy.
http://blogs.law.harvard.edu/foodpolicyinitiative/publications/

Food Policy Networks resource database, listserv and directory (maintained by the Center for a Livable Future).
www.foodpolicynetworks.org

Thought About Food? A Workbook on Food Security and Influencing Policy (2005). Developed by Food Security Projects of the Nova Scotia Nutrition Council and the Atlantic Health Promotion Research Centre, Dalhousie University.
http://partcfood.msvu.ca/index.htm.

Model Healthy Food System Resolution (2013). Developed by ChangeLab Solutions.
http://changelabsolutions.org/publications/food-system-resolution.

Doing Food Policy Councils Right: A Guide to Development and Action.
http://www.markwinne.com/wp-content/uploads/2012/09/FPC-manual.pdf.

Pages 18-22 discuss CFAs as well as alternatives to comprehensive CFAs.

Chapter 5. Peer-Reviewed Evaluations of CFS Interventions

Kobayashi M, Tyson L, and Abi-Nader J. (2010). The Activities and Impacts of Community Food Projects. USDA/NIFA.

Healthy Food Access Portal - http://healthyfoodaccess.org

Center for Disease Control and Prevention maintains a healthy food environment website with several resources http://www.cdc.gov/healthyplaces/health-topics/healthyfood_environment.htm

USDA Food Environment Atlas assembles statistics on how food environment indicators stimulate research on the determinants of food choices and diet quality at national level. http://www.ers.usda.gov/data-products/food-environment-atlas.aspx#.U-Jojlbu8jM

Know Your Farmer, Know Your Food Compass Map shows efforts supported by USDA and other federal partners as well as related information on local and regional food systems for the years 2009-2012. http://usda.gov/maps/maps/kyfcompassmap.htm

Planning for Food Access and Community Based Food System: A National Scan and Evaluation of Local Comprehensive and Sustainability Plans. https://www.planning.org/research/foodaccess/pdf/foodaccessreport.pdf

American Planning Associations Food System resources https://www.planning.org/nationalcenters/health/food.htm

Wallace Center at Winrock International: resource library features case studies, research, innovative models, guides, webinars, and toolkits. https://wallacecenter6.squarespace.com/resourcelibrary/

Figure 1. Community Food Security Goals and Community Food Assessment

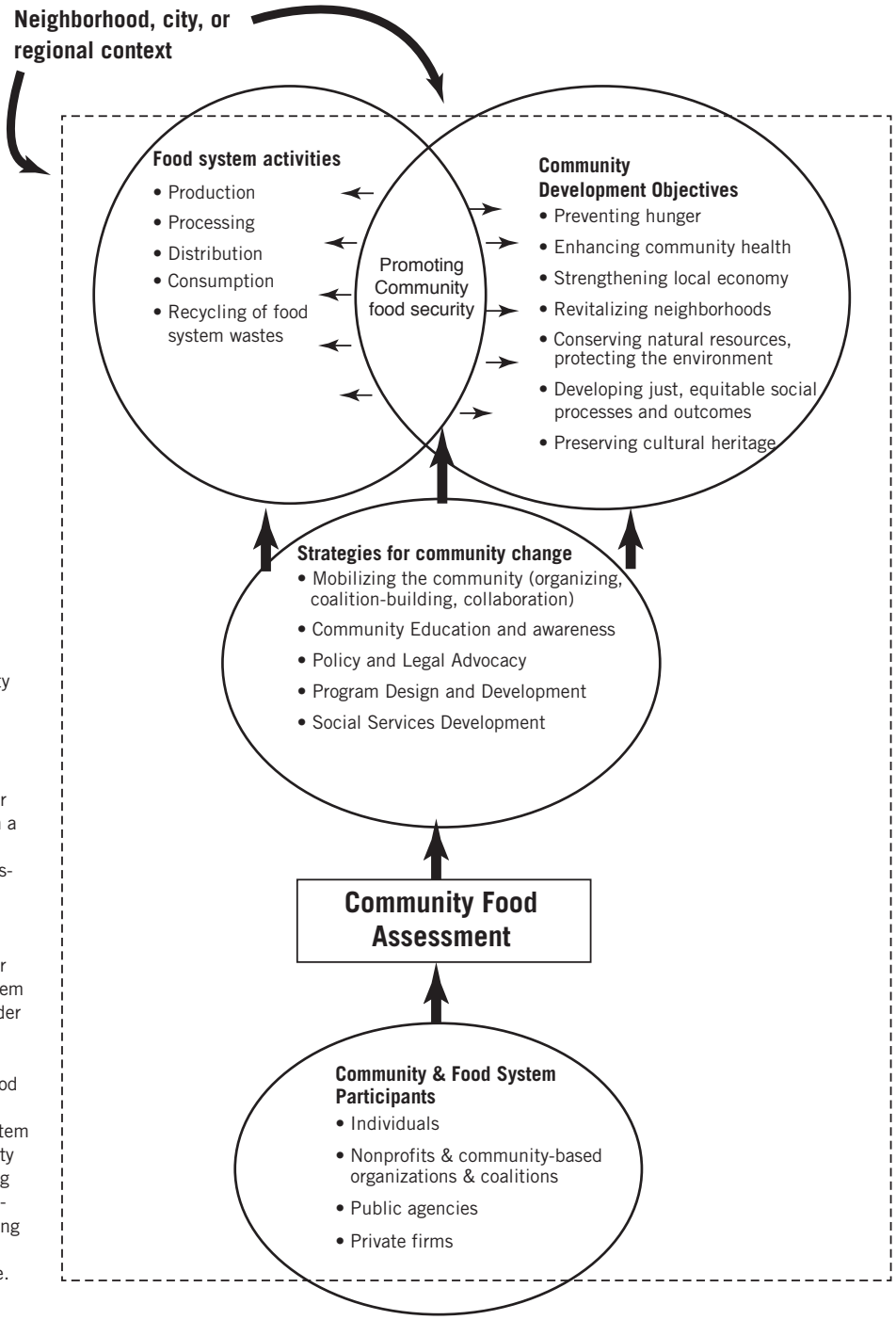


Figure 1. Illustrates the connection between community food security goals and Community Food Assessment. An individual, community organization, public agency, or private sector organization could form a coalition to initiate the Community Food Assessment. Based on the information generated, actions could be developed to affect particular community or food system activities directly, in order to improve community food security. In this diagram, community food security stands at the intersection of food system activities and community goals such as preventing hunger, enhancing community health, conserving natural resources, and promoting social justice.

Source: Pothukuchi et al., 2002.

Figure 2. Stages of Improving Community Food Security

Stage of continuum	Stage 1: Initial food systems change	Stage 2: Food systems in transition	Stage 3: Food systems redesign for sustainability[a]
Strategies and activities	◊ Counsel clients to maximize access to existing programs providing food and nutrition assistance, social services, and job training. ◊ Document the nutritional value of emergency foods. ◊ Identify food quality and price inequities in low-income neighborhoods. ◊ Educate consumers and institutions about the benefits of local, seasonal, and organic foods.	◊ Connect emergency food programs with local urban agriculture projects. ◊ Create multisector partnerships and networks. ◊ Facilitate participatory decision making and policy development through serving on food policy councils and organizing community-mapping processes and multistakeholder workshops.	◊ Advocate for minimum wage increase and more affordable housing. ◊ Advocate for food labeling standards about product history (e.g., place of origin, organic certified, Fair Trade certified[0]). ◊ Through participatory decision making and policy development, mobilize governments and communities to institutionalize: ◊ (1) land use policies that facilitate large-scale urban agriculture; ◊ (2) market promotion and subsidies as a way to increase a community's food self-reliance and achieve nutrition goals; and ◊ (3) tax incentives and financing mechanisms to attract local food businesses to low-income neighborhoods.
Time frame	◊ Short term	◊ Medium term	◊ Long term
Evaluation	◊ Data collection, monitoring, and evaluation are conducted at all stages of the community food security continuum.		

Figure 2. Evidence-based strategies and activities associated with a three-stage community food security continuum. Adapted from a framework originally developed by MacRae (10). [a]Sustainability is defined as society's ability to shape its economic and social systems to maintain both natural resources and human life (12). [b]Fair Trade is an innovative, market-based approach to sustainable development that helps family farmers in developing countries gain direct access to international markets, as well as develop the business capacity necessary to compete in the global marketplace. In the United States, TransFair USA places the "Fair Trade Certified" label on coffee, tea, cocoa, bananas, and other fruits. For more information, see: www.transfairusa.org.

Source: McCullum et al., 2005.

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Community Food Security in the United States: A Survey of the Scientific Literature

Volume II

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TABLE OF CONTENTS

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INTRODUCTION

Note on Version

The purpose of this report is to document and synthesize research on community food security (CFS) in the United States. It builds on the 2009 Center for a Livable Future (CLF) food security–focused report *Community Food Security in United States Cities: A Survey of the Relevant Scientific Literature* (Haering and Syed, 2009).

Since the publication of the 2009 report, CFS has evolved as both a concept and a framework for intervention. This report describes the path to conceptual independence and reviews the literature on CFS history, definitions, theories and frameworks, measurement, magnitude and predictors, the consequences of low community food security, the connection to food policy councils, and evaluations of CFS interventions conducted in the United States.

The majority of research cited in this report is from peer-reviewed publications. It also references research conducted by practitioners but not published in scientific journals, and we acknowledge the quality of such resources. Additional reference materials are outlined in Appendix B. To accommodate readers' unique informational interests and needs, each chapter is written as a stand-alone reference on a given CFS topic.

CHAPTER 1 - COMMUNITY FOOD SECURITY: HISTORY, DEFINITIONS, AND FRAMEWORKS

Our understanding of community food security has evolved over time. Its current definition is "a condition in which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance, social justice, and democratic decision-making" (Bellows and Hamm, 2002). Since the 1980s, the concept has gained traction through advocates who influenced federal, state, and local food security policies and developed organizations and programs that align with CFS goals. In 1994, CFS reached national prominence with the formation of the Community Food Security Coalition, which terminated operations in 2012 (Holt-Giménez and Wang, 2011). Along with this development, however, fundamental issues remain in the theorizing, measurement, and evaluation of CFS. Without a clearer understanding of the state of these challenges, researchers and practitioners are limited in directing future research needs and mobilizing change.

The purpose of this chapter is to trace the development of the concept of food security, and later community food security, and to clarify the conceptual and theoretical understandings and debates that exist within the CFS movement in the United States.

I. History and Progress

International Efforts to Define Food Security

The United Nations (UN) first recognized food as a human right in the 1948 UN Universal Declaration of Human Rights, which set in motion the evolution of concepts like food security and community food security (UN, 1948, cited in Bellows and Hamm, 2002). International development work in the 1960s first defined food security as the ability to meet aggregate food needs in a consistent way. Subsequently, international food security became a way to describe and measure the UN's mandate to protect the human right to food and promote world trade (Anderson and Cook, 1999; Bellows and Hamm, 2002).

In 1974, the United Nations convened the World Food Conference in response to a worldwide price increase of staple foods. The goal of the conference was to ensure that countries produced enough food for world consumption and that the supply was reliable. Food security soon became a policy priority for developing countries (Allen, 1999; Anderson and Cook, 1999; Bellows and Hamm, 2002). In 1975, the UN published the first official definition of food security (FS): "availability at all times of adequate world supplies of basic food-stuffs … to sustain a steady expansion of food consumption … and to offset fluctuations in production and prices" (UN, 1975). In 1983, the UN Food and Agriculture Organization (FAO) would add another goal: "to ensure that all people at all times have both physical and economic access to the basic food they need" (FAO, 1983).

By the 1996 World Food Summit in Rome, food security was more concretely conceptualized. The definition included environmental sustainability as integral to agricultural practices and outlined three FS dimensions: availability, stability, and access (FAO, 1996). These descriptions provide

only a snapshot of the evolution of this definition. Between 1975 and 2003, advocacy groups and researchers would continue to publish more than 30 different FS definitions. These descriptions document the range of academic disciplines that have contributed to and found relevance in this issue (Maxwell & Frankenberger, 1992). Table 1 outlines a select group of FS definitions. For a more complete list, see Haering and Syed (2009: 3-4).

From Hunger to Food Security: Development in the US

The development of the concept of food security in the US overlaps with awareness of, and responses to, domestic hunger (Anderson and Cook, 1999:143). Prior to the 1980s, FS in the United States was primarily described and acted upon as a problem of hunger, or the absolute deprivation of calories and nutrients necessary to lead an active and healthy life. Accordingly, the US federal government sought to strengthen the US food security safety net through food assistance programs. The first of these programs, including food stamps (1939–43), were implemented during the Great Depression when the US government purchased farm surpluses to alleviate hunger in urban areas. Contemporary food assistance programs, such as the Supplemental Nutrition Assistance Program or SNAP (formerly known as the Food Stamp Program) and the Special Supplemental Nutrition Program for Women, Infants and Children (WIC), were created with the primary goal of addressing hunger and health issues in low-income people. These programs were further expanded under the 1968 Senate Select Committee on Nutrition and Human

Table 1. Official and Institutional Food Security Definitions by Source and Year

Source	Year	Definition
UN	1975	"Availability at all times of adequate world supplies of basic food-stuffs... to sustain a steady expansion of food consumption... and to offset fluctuations in production and prices."
FAO	1996	"Food security redefined to officially include three dimensions: availability, stability, and access. Environmental sustainability of agricultural practices is officially recognized as integral to food security."
USDA	1998	"Access by all members at all times to enough food for an active, healthy life." At a minimum, it includes "the ready availability of nutritionally adequate and safe foods; and assured ability to acquire acceptable foods in socially acceptable ways without resorting to emergency food supplies, scavenging, stealing, or other coping strategies."
FAO	2003	"A situation in which all households have both physical and economic access to adequate food for all members and where households are not at risk of losing such access. There are three dimensions implicit in this definition: availability, stability, and access. Adequate food availability means that, on average, sufficient food supplies should be available to meet consumption needs. Stability refers to minimizing the possibility that, in difficult years or seasons, food consumption might fall below consumption requirements. Access draws attention to the fact that, even with bountiful supplies, many people still go hungry because they are too poor to produce or purchase the food they need."

Needs with support from the Nixon, Ford, and Carter administrations (McGovern, 2002).

Anti-hunger advocates had long recognized poverty as the major cause of hunger and pointed out the inadequacy of using hunger (a symptom) to describe the problem of food insecurity (a larger social and systems-level problem). During the 1970s, anti-hunger groups focused on two main goals: first, to improve the economic standing of low-income households (reducing the risk of food insecurity) and, second, to expand the federal food security safety net for those who needed it. To achieve their goals, these groups addressed problems of food security through a broader scope, supporting community workforce development and improvements to federal assistance programs. In some cases, organizations like the Food Research and Action Center (FRAC) and Bread for the World filed lawsuits against state governments and engaged in coordinated policy efforts to expand the Food Stamp, WIC, and National School Lunch programs (FRAC website, last updated May 20, 2009).

From these efforts, dominant food security perspectives would shift to define a state of food security (conditions preceding hunger) as distinct from hunger. These new perspectives would also allow policymakers, researchers, and activists to seek strategies to prevent hunger in the first place by, for example, improving access to food sources or improving individuals' financial ability to purchase food. This perspective reached prominence on the public agenda in 1990 when the Select Committee on Hunger of the US House of Representatives set a new goal of creating food security rather than simply eliminating hunger (Anderson and Cook, 1999). Notably, discussions of food production remained absent from these developments. Only later, with the development of CFS and related CFS efforts, would consideration for production, as well as environmental sustainability, be addressed.

In 2006, a scientific panel convened by the National Academy of Sciences developed recommendations to reclassify US households in relation to food security through definitions that eliminated the word hunger. Before 2006, householders were classified as: (1) food secure, (2) food insecure without hunger, (3) food insecure with moderate hunger, and (4) food insecure with severe hunger. Following the USDA's adoption of the National Academy of Sciences recommendations, this classification changed to: (1) food secure, (2) low food security, and (3) very low food security (National Academy of Sciences, 2006).

Together, the panel's report and adoption of its recommendations capture an evolving understanding of efforts to define, measure, and address the issue of food security in the United States (National Research Council, 2006; cited in Haering and Syed, 2009). Figure 1 displays the evolution of the food security definition over time.

CFS Emerges from Anti-Hunger and Food Security Initiatives

Broadly, CFS represents a subset of food security that is oriented around the community level rather than the regional, national, or global levels. Cohen and Burt (1989) argued that unlike hunger, which is experienced by individuals, food insecurity is experienced by communities; therefore, community food security more accurately embodies the broader system or landscape that leads to hunger and pinpoints the conditions needed to prevent hunger and other consequences like malnutrition. CFS also complements the broad scope of anti-hunger work by more explicitly accounting for the complex interplay of social, political, and economic forces that influence food production and acquisition (Bellows and Hamm, 2002).

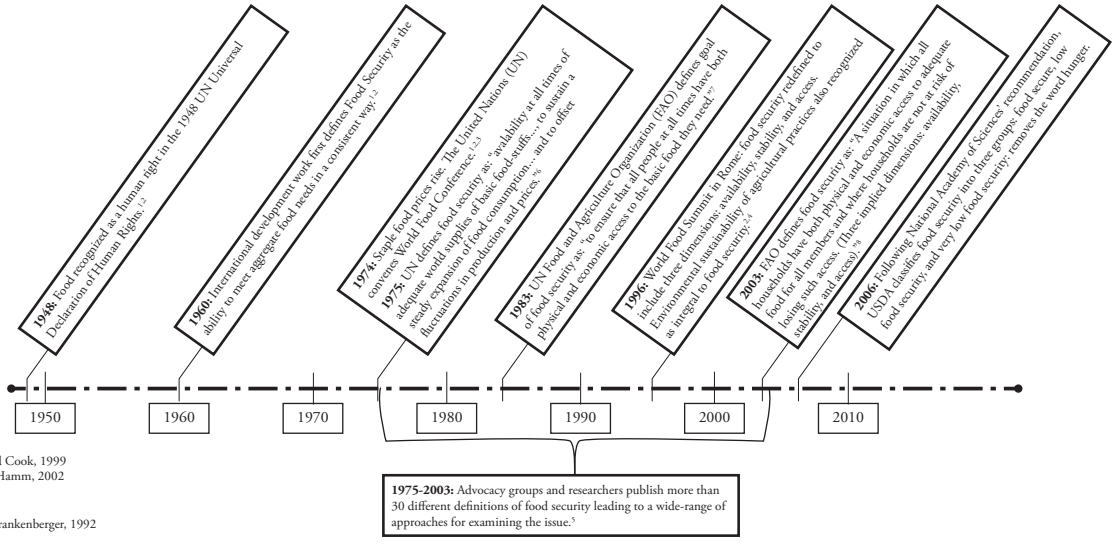
During the 1980s and 1990s, federal food assistance programs experienced massive budget cuts (Allen, 1999; Lezberg, 1999). To fill the gap left by the reduction in government-run food assistance programs, private voluntary providers stepped in and built emergency food programs (soup kitchens, food banks, and other food donation programs), either through private donations or federal block grants issued to states (Fitchen, 1997; Allen, 1999). Though these efforts were fairly successful in reducing the hunger experienced by the poorest families and individuals, the support was fragmented and fragile at best (Allen, 1999; Anderson and Cook, 1999). By the end of the 1980s, this broken support system would spark the development of a community food security perspective (Allen, 2010; Bellows and Hamm, 2002; Hamm and Bellows, 2003).

Developing a Community Food Security Definition

CFS prioritizes food security needs of low-income people while also advocating for the development of local and regional food systems (Allen, 1999). The concept moves beyond traditional definitions of food security by considering that ensuring an adequate food supply, and present and future food access, requires a focus on all components of the food system, not just consumption. Less clear in CFS literature and among advocates, however, is whether CFS should be framed more in terms of improving low-income individuals' food access or of developing local sustainable food systems, which may be more accessible to middle- and high-income individuals (Lezberg, 1999; Clancy, 1999). While local food system advocates promote sustainable agricultural practices, anti-hunger advocates are concerned with having a steady and affordable food supply. This tension has led to variety in intervention strategies, which range from expansion of community food assistance programs to the promotion of urban agriculture.

Three sets of community activists and scholars have contributed to the creation of the CFS concept and its efforts: community nutrition educators, sustainable food system researchers,

Figure 1. Timeline Marking the Evolution of Food Security Definitions in the U.S.



[1]Anderson and Cook, 1999
[2]Bellows and Hamm, 2002
[3]Allen, 1999
[4]FAO 1996
[5]Maxwell & Frankenberger, 1992
[6]UN, 1975
[7]FAO, 1983

and anti-hunger and community development advocates (Anderson and Cook, 1999; Bellows and Hamm, 2002; Hamm and Bellows, 2003). This multidisciplinary approach has made it difficult to develop a universally agreed upon definition of CFS. To date, however, the most widely accepted definition is by Hamm and Bellows in 2003 (which has subsequently been cited in various publications from the FAO):

"A condition in which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance, social justice, and democratic decision-making."

Capturing the visionary nature of CFS, this definition seeks to address all relevant issues and stakeholder perspectives. As discussed later in this report, however, such an inclusive definition also creates challenges in the on-the-ground operationalization of the concept.

Summary and Conclusions: Community Food Security

CFS aims to ensure availability, stability, and access to food at the community level, and looks at how these issues relate to the community food production system (Gottlieb and Fisher, 1996; Anderson and Cook, 1999; Joseph, 1998; Hamm and Bellows, 2003). The work of CFS has built upon the foundation of anti-hunger efforts throughout much of the 20th century. Yet, in addition to hunger prevention and alleviation, CFS orients interventions toward creating producer-consumer linkages—such as farmers' markets and community supported agriculture (CSAs)—while emphasizing the importance of sustainability in food production and human and community well-being.

CFS work attempts to incorporate systems-level thinking, though its approach is often more strategic, identifying key opportunities for engagement rather than addressing the system as a whole. CFS involves work on scales beyond the household level and within national boundaries. Although the anti-hunger element continues to be emphasized in its current definition, anti-hunger efforts have not been fully absorbed into CFS work.

In the past few years, however, there have been signs of increased collaboration among CFS and anti-hunger initiatives, predominantly related to a notable shift in the vision and work of anti-hunger organizations across the country. Rather than focusing on improved food procurement, these groups have begun to incorporate and address the root causes of hunger in their communities through programs and policies. This transition harkens back to the early days of the anti-hunger movement when anti-poverty and living wage legislation fueled organizing efforts.

Furthermore, in the fall of 2013, the Community Food Bank of Southern Arizona hosted the conference "Closing the Hunger Gap: Cultivating Food Security" with over 300 participants from 150 organizations across the country. A follow-up conference is being planned for fall 2015 by the Oregon Food Bank, owing to the increased interest among anti-hunger and community food security advocates. These conferences, and anti-hunger groups' growing focus on root causes of food insecurity and hunger, may yield many more opportunities for future collaboration between the anti-hunger and CFS movements.

Theorizing CFS: From Emerging Concept to Effective Strategy

As CFS has emerged to address problems facing low-income, food insecure people through

policies and interventions, less attention has been given to developing and documenting its theory. The absence of a coherent theory and the need to engage multiple stakeholders have made it difficult for activists to grasp "CFS issues broadly enough to include diverse and often conflicting community needs" (Hamm and Bellows, 2003:38). When Anderson and Cook published an article titled "Community Food Security: Practice in Need of Theory?" in the *Journal of Agriculture and Human Values* in 1999, there was very little written on the theory of CFS. In this article, the authors call for formulating a theory for CFS in order to identify a common purpose among diverse stakeholders. Some in the academic community have voiced similar concerns and recommendations (Joseph, 1998; Allen, 1999; Clancy, 1999; Lezberg, 1999; Hamm and Bellows, 2003; Born and Purcell, 2006). While a unified CFS theory has yet to be developed, researchers have several theories, and related frameworks, that they draw from to inform their understanding and implementation of interventions to address CFS, discussed later in this report.

Why Theory?

A theory to clarify linkages would help reveal the dynamics between different parts of a food system and their relevance to CFS (Clancy, 1999; Lezberg, 1999). Identifying this theoretical map is important, especially as the multifaceted and complex nature of the concept may, without broader understanding of the food system, lead to development of interventions that unwittingly support one aspect of CFS while weakening another. For example, a proposal to develop a large chain grocery store in an underserved area may improve the availability and access to fresh foods and stimulate economic activities in the community. But if this intervention does not consider or utilize local producers—who may otherwise source some of the new grocery store consumers—it may redirect some consumers from the local supply chain, thus harming the local food system. A theory by itself would not necessarily bring a balance of interests in the example provided here, but it may help CFS stakeholders better navigate the range of feedback, opportunities, and potential consequences of their work.

A second benefit of theory is guidance for the development of community food security indicators. These indicators may help identify the state of CFS in a given community and allow communities to be compared. Indicators may also be used to inform public investments in CFS needs. Because building a food secure community relies on multiple projects spanning years and even decades, it is important that theory also identify various stages of CFS progress (Anderson and Cook, 1999; McCullum, Desjardins, Kraak, et al., 2005). Initial work toward a theory comes from nutrition education researchers, such as McCullum and colleagues, who have described a CFS continuum (see Figure 2 in Appendix B). This model stems from a dietitian's perspective and provides guidelines of what can be done by nutrition professionals to improve and reach CFS (McCullum, Desjardins, Kraak, et al., 2005).

In summary, these theories are useful, but many advocates do not embrace theory as a means to help them structure their work. Theories may help unify diverse food system stakeholders under a common CFS purpose. This unified purpose may lead to better alignment of stakeholder goals and CFS interventions. Lastly, a theory may help specify and validate tools to measure and understand challenges related to CFS and food systems across space and time (Anderson and Cook, 1999; Clancy, 1999; Lezberg, 1999). The process of theory

building requires much data, time, and deliberation. Though a number of researchers have made important strides toward its start, much work remains.

Operationalizing Community

In addition to conceptual vagueness resulting from a lack of CFS theory, the term "community" raises political and measurement challenges. For some, community may be defined by geographic characteristics such as size and location of a neighborhood or city; it may also be the local political economy defined by voting districts, taxation, and zoning codes. Still others may choose to focus on the demographic characteristics of the individuals involved, for example, racial and ethnic identification. However it is defined, each community faces different sets of challenges toward an agreed upon understanding of its members' food needs. At any point, disagreements may arise and weaken movement toward CFS.

II. CFS Theories and Frameworks

Though a number of conceptual frameworks have been applied to help understand and address issues of food insecurity, explicit documentation of CFS-specific theories and frameworks is more limited (Innes-Hughes et al., 2010; Anderson & Cook, 1999). Despite a lack of formal documentation, however, CFS advocates have applied theory in their work, and a small body of literature addresses the utility of applying a social-ecological perspective, and other frameworks, to help guide CFS research, practice, and analysis. This section explores the contents of these theories and frameworks, as well as their utility in relation to CFS.

CFS and Social-Ecological Theory

Theories are described as sets of interrelated concepts or ideas intended to explain something, like CFS (Coreil, 2010). Social ecological theory pulls from general systems and social science theories, which emphasize the interconnectedness of the individual and his/her social and environmental context. The perspective argues that behavior is affected by and affects this context, which includes multiple levels of influence (e.g., individual, interpersonal, institutional, community, and policy levels) (Sallis et al., 2008). It also recognizes that varied levels interact with each other. According to this perspective, CFS advocates should account for CFS influences at multiple levels and develop interventions that include multilevel activities.

In a direct application of the social-ecological perspective to CFS and food, Kaiser (2011) applies and explains the relevance of understanding factors at multiple levels and their cross-level influence. She organizes her analysis according to three main food system characteristics (interdependence, diversity, and vulnerability), and uses these categories to relate food systems' connectedness, context, and feedback to a community's natural and built environments, people, and social characteristics (Kaiser, 2011).

Interdependence. Stakeholders in a given food system differ in their goals and positions in social networks, yet all are embedded in and influenced by surrounding socioeconomic and ecological conditions. This interdependence demands that CFS researchers and practitioners account for competing interests in context and, to achieve CFS goals, adapt their communication and work strategies accordingly (Kaiser, 2011). The process of comparing needs and interests, and then coming to agreement regarding community goals, may be achieved through cross-sector partnership and open communication, one of the core

functions of food policy councils and many Cooperative Extension activities (Chapter 5).

Diversity. The social ecological perspective guides CFS activists to consider diversity in interest groups as well as diversity in the physical and social facets of a food system's built and natural environments (Kaiser, 2011). According to Berkes et al. (2003), recognizing and understanding connectedness and feedback among these components, in context, represents essential capital or inputs for achieving CFS. The social-ecological lens provides a systematic way for identifying, organizing, and considering the relationships (both positive and negative) among these factors, which may include different kinds of capital for a food system (Kaiser, 2011; Hart, 2006). For example, within a system, there is natural capital (e.g., environmental resources, ecosystem adaptability and resilience to change, visual appeal), human capital (e.g., people's skills, knowledge, abilities, and networks), and built capital including tangible spaces for CFS interventions (e.g., urban farms and gardens) or technological infrastructure (e.g., EBT machines in farmers' markets) (Kaiser, 2011; Hart, 2006). Accounting for these factors helps CFS advocates better understand their engagement in various pieces of a much larger and multifaceted system.

Vulnerability. Finally, Kaiser (2011) includes explicit consideration for vulnerable groups—that they be identified and areas of growth, development, and potential assessed; and that these factors be included in the design of CFS interventions. Examples of the types of food system challenges that may fall under the vulnerability dimension include efforts to develop interventions that also challenge or transform societal bias associated with race or class. Without explicit consideration for these groups, many initiatives, such as farmers' markets, are perceived as doing little more than reinforcing the advantages of white and affluent populations (Campbell et al., 2013; Guthman, 2011).

Applying CFS Challenges to Social Ecological Models and Theory

Recognizing the growing interest in community food projects and research, Campbell et al. (2013) developed a community food system bibliography that identified persistent and strategic challenges facing CFS stakeholders. According to the review, these challenges are economic, social, and political in nature (Campbell et al., 2013). From an economic perspective, stakeholders are challenged by negotiating the opportunities and limits of markets, such as in (1) identifying food prices that are acceptable to farmers but also accessible to low-income consumers, while still (2) affording fair food worker wages and working conditions. Politically, stakeholders struggle with reconciling varied political approaches for change, such as a decision to take on short-term and incremental initiatives or to fundamentally change the system. And from a social lens, practitioners face difficulty in developing practical interventions that also address—rather than worsen or reinforce— race and class biases (Campbell et al., 2013).

Campbell et al. (2013) point out that all these issues are related and interact. This interdependence reflects the complexity of working in a system and the value of a social-ecological perspective to address and understand CFS in context-specific settings. As mentioned, the model may organize these challenges by level of influence and clarify their interrelated nature. By connecting diverse issues, the model supports a role for collaboration among varied disciplines and stakeholders. Together, these

groups may explore and identify ways to achieve compromise, address tensions, and make strategic trade-offs to support their vision for a sustainable community food system.

Beyond identifying persistent food system challenges, Campbell et al. (2013) suggest a number of established community development and public policy–based theories that may guide the development of interventions for specific community food system challenges. For example, study authors recommend the theory of public work (Boyte and Kari, 1996), which describes the components involved in bringing diverse stakeholders together to achieve and build things of public value. The use of theories complements a social-ecological framework because, in contrast to the framework alone, they may guide practical action on a given persistent challenge. At the same time, theories are able to exist within the overarching social-ecological framework, which may contextualize the theory and issue for the framework's interrelatedness, diversity, and vulnerability with other community food system and CFS components (Campbell et al., 2013; Kaiser, 2011).

Other Frameworks

In addition to a social-ecological perspective, a number of other frameworks have gained traction in recent food security and community food security literature. In this section, two such frameworks—food justice and food sovereignty—are briefly described, as well as compared and contrasted to CFS. We also include a discussion, in relation to this work, of the idea of food democracy. These frameworks do not represent an exhaustive list of related concepts, such as a rights-based food system (Anderson, 2008), environmental justice frameworks, or the growing push to consider the food workers' rights, working conditions, and the relationship to US community food security. For more information about resources related to these concepts, please see the additional resources section at the end of the report.

FOOD JUSTICE—CONCEPT AND DEFINITION

In the effort to build a more socially just US food system, the CFS concept is often accompanied by the term food justice (Alkon and Mares, 2012). Although the two concepts are different, they overlap broadly (Holt-Giménez and Wang, 2011). Under a food justice framework, access to healthy, affordable, and culturally appropriate food is considered for its relationship to patterns of racial and class-based inequalities within society, from the built environment to institutional policies (Alkon and Mares, 2012; Alkon and Norgaard, 2009). Food justice activists are concerned with achieving greater equality in access to healthy food, especially for people of color and for low-income communities (Heynen et al., 2012; Holt-Giménez and Wang, 2011).

FOOD JUSTICE—RELATIONSHIP TO CFS

Although food justice is an increasingly popular approach for food system stakeholders, literature exploring the concept—including from a CFS perspective—is evolving and limited (Gottlieb and Joshi, 2010). The concept is also difficult to flesh out and operationalize on the ground. Broadly, food justice extends CFS to consider the ways in which racial and economic inequalities pervade food system practices and processes, from production to food consumption and trade (Alkon and Mares, 2012). In one comparative case study conducted in Northern California, researchers examined the concept of food justice as articulated by the Karuk Tribe of California and the West Oakland Food Collaborative, two spatially and racially distinct communities (Alkon

and Norgaard, 2009). They found that participants frame experiences of food insecurity in terms of institutionalized racism (e.g., histories of discrimination and denied access to land and water for food production; racialized physical landscapes that prevent purchase of quality foods), rather than consequences of individual food choices. These perspectives shaped community food security interventions, such as the West Oakland Food Collaborative's emphasis on building local food and economic systems rather than corporate economic development. The authors concluded that these cases, and a food justice frame, help CFS activists and policymakers consider the institutionalized nature of denied access to healthy, affordable, and culturally appropriate foods. These findings reveal an important role for political alliances between environmental justice, sustainable agriculture, and CFS/FS activists, so that issues of food access may be addressed along with those of institutionalized racism and classism (Alkon and Norgaard, 2009).

FOOD SOVEREIGNTY—CONCEPT AND DEFINITION

The concept of food sovereignty originates from International Peasant Movements in the global South (Alkon and Mares, 2012). Its most common definition is attributed to Via Campesina, and calls for the right of persons to "healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems" (2009). This framework gives precedence to production, fair pricing, and the reorganization of trade to support small-scale farmers and local/domestic markets, community control of local food system resources (e.g., land, water, and seeds), as well as natural resource protection (Alkon and Mares, 2012; Bello, 2008; Holt-Giménez and Wang, 2011). Its focus requires examining the distribution of power in a food system and intervening to build local and community-based food systems that guarantee economic, social, and cultural rights, including for women, indigenous groups, and racial minorities (Alkon and Mares, 2012; Anderson, 2008; Heynen et al., 2012). Some researchers describe the work of labor rights activists, such as the Food Chain Workers Alliance, as falling under this framework (Holt-Giménez and Wang, 2011).

FOOD SOVEREIGNTY—RELATIONSHIP TO CFS

Food sovereignty is seen by some authors as a radical interpretation of CFS and food justice, as well as critical for effectively supporting food insecure communities (Holt-Giménez and Wang, 2011). Given that these populations are the least supported in sustainable and consistent ways by a corporate food model, they argue that those food insecure communities would benefit the most from food sovereignty products: power and ownership over local food production (Alkon and Mares, 2012). Whereas CFS and food justice frameworks work alongside a dominant corporate food system (and therefore pursue reforming the existing system within its established parameters), the food sovereignty concept states that this is not enough, and that explicit opposition to the dominant model is required. Examples of FS exist mostly among tribal or native communities in the US and within an international context.

In one multiple case study exploring food justice and CFS-relevant processes, such as an Oakland farmers' market connecting black farmers and low-income consumers, it was argued that an eventual inability to provide fresh and healthy food resulted from working

alongside the corporate food regime, rather than trying to reform it (Alkon and Mares, 2012). Without undoing the control of a corporate food regime, and building more democratic and regionally oriented food systems, these authors argue that many CFS and food justice interventions simply reinforce a system of centralized and globalized agriculture that undermines lasting CFS (Alkon and Mares, 2012; Heynen at al., 2012). In terms of examples of true food sovereignty action (or movement-based strategies), then, researchers identified national boycotts and coalitions for labor justice advanced by groups like the Coalition of Immokalee Workers (CIW); reform of or effecting change within national-level food systems policy, such as the Farm Bill; and food citizen engagement in regulations related to food and intellectual property rights, such as advancing access to information and choice related to genetically modified foods (Holt-Giménez and Wang, 2011; Fairbairn, 2012; Hassanein, 2008). These interventions are characterized as more radical and demanding in terms of time, energy, and resources than those developed under a food justice or CFS frame (Holt-Giménez and Wang, 2011).

The CFS, food justice, and food sovereignty movements overlap. While the overlap varies by degree, the movements share similar political objectives and desired outcomes, with a general focus on community investment in production and access to local food resources and systems (Alkon and Mares, 2012). By adding a food justice, democracy, and sovereignty frame to CFS, CFS advocates may be encouraged to take on the politics of the food system, or what some researchers identify as the roots of CFS priority issues (Heynen et al., 2012). Without this focus, it is argued that food system producers and consumers remain passive recipients of a dominant corporate food regime, under which lasting CFS remains elusive (Heynen et al., 2012).

In addition to the above-mentioned frameworks, food democracy has been proposed as a process by which food citizens may begin to respond to the dominant corporate food regime. Food democracy suggests the "importance of processes for making choices when values come into conflict and when the consequences of decisions are uncertain" (Hassanein, 2008: 289). Furthermore, solutions to ecological, social, and economic problems in the dominant food system must be determined socially and politically through meaningful civic participation and political engagement by an informed food citizenry. Two core ideas are at the heart of the food democracy framework: first, food democracy is achieved by collective action by and among organizations rather than through individuals' actions, premised by the idea that coalitions of organizations both increase citizen power and expand the number of people involved in an effort; second, food democracy emphasizes the importance of meaningful participation by individuals, through coalitions or on their own, in governing and shaping their relationships to food and food systems.

According to Hassanein, meaningful participation has four dimensions (290–291). First, it means that individuals have the opportunity to develop a broad knowledge of the food system and its various facets. Second, citizens have the opportunity to share ideas about the food system with others so that they can clarify issues and discuss values. Third, food democracy requires citizens to develop the capacity to determine and produce desired results with respect to food and the food system. It involves citizens being able to determine their own relationship to food, and public work by citizens to address and solve community food problems. Here, public work refers to an observable effort by a mix of people who produce things for the common good and also gain greater confidence in their capacities in the process. Fourth, food democracy means that the citizenry acquires an

orientation toward the community good and the willingness to go beyond their self-interest to promote the well-being of the community and to recognize the value of mutual support and interdependence.

Together, these frameworks—along with alliances among stakeholders of various perspectives and movements—may help advance CFS by involving food citizens in food system change while also narrowing and clarifying which food system components are most in need of reform and should be prioritized (Holt-Giménez and Wang, 2011). As noted by Anderson (2008), this guided and engaged action supports food system stakeholders in a richer analysis and critique, and in improved effectiveness of existing interventions, aspects of agriculture, and food system activities.

CHAPTER 2 - MAGNITUDE AND PREDICTORS

Since 1995, the US Department of Agriculture (USDA) has collected national data on household food insecurity. Using these data, this section describes the magnitude and predictors of household food security at the national and regional levels. We focus on household food security because there are no official CFS statistics and these data may be combined with community-level indicators to construct measures of CFS (see chapter 3 for examples of community food security indicators).

I. Household Food Insecurity in the US

In 2001, 10.7 percent of US households (11.5 million households, more than 33 million individuals) were food insecure, meaning they had difficulty at some point in the previous 12 months in providing enough food for all household members because of a lack of resources. Over the next decade, and compounded by the 2007–2009 Great Recession, this figure would increase at the national level. In 2012 (the latest period for which national data are available), 14.5 percent of US households were considered food insecure. This percentage represents 17.6 million households and close to 49 million individuals. One-third of these households (7 million households, or 5.7 percent of all US households) had very low food security, meaning that the food intake of some household members was reduced and normal eating patterns were disrupted at times during the year because of limited resources. In most cases, episodes of food insecurity were recurrent but not chronic. Levels of US food insecurity across all classifications have remained stagnant since 2008 (Coleman-Jensen, Nord and Singh, 2013).

Low and very low food security differ in the extent and character of the adjustments households make to eating patterns and food intake. Households classified as having low food security reported multiple indicators of food access problems (e.g., feeling worried that food would run out before they had the money to buy more, not being able to afford balanced meals) but typically report few, if any, instances of reduced food intake. Households classified as having very low food security reported multiple instances of reduced food intake and disrupted eating patterns owing to inadequate resources for food. In 3.9 million households (representing 10 percent of all US households with children under the age of 18), adults and children experienced very low food security (Coleman-Jensen, Nord, Andrews et al., 2012: v).

The prevalence of food insecurity was found to vary considerably among households with different demographic and economic characteristics. Rates of food insecurity were higher than the national average for the following subgroups (Coleman-Jensen et al., 2012: 8-10):

- All households with children under the age of 18 (20.6 percent)
- Households with children under age 6 (21.9 percent)
- Households with children headed by a single woman (36.8 percent) or a single man (24.9 percent)
- Black, non-Hispanic households (25.1 percent) and Hispanic households (26.2 percent)

- Households with incomes below 185 percent of the poverty threshold (34.5 percent)

Food insecure households often turn to federal food assistance programs for help. According to the December 2012 food security supplement to the General Population Survey (the most recent data available at the time of publication), about 59 percent of food insecure households reported receiving assistance from one or more of the three largest federal food and nutrition assistance programs in the previous month. SNAP (formerly known as Food Stamps) provided assistance to 42 percent of food insecure households, children in 32.5 percent received free or reduced-price school lunches, and women or children in 11.4 percent received WIC food vouchers (Coleman-Jensen et al., 2013: 29). In addition, households and individuals used community emergency food assistance programs.

Emergency food programs are typically locally based and volunteer-run, but the USDA supplements these resources through The Emergency Food Assistance Program (TEFAP). Food pantries distribute unprepared foods for off-site use, and emergency kitchens (often referred to as soup kitchens) provide individuals with prepared food to eat on site (Ohls et al., 2002). Households often combine the use of federal food assistance programs and community food assistance programs—67.1 percent of households with incomes below 185 percent of the federal poverty line participated in one or more of the three federal programs (Coleman-Jensen et al., 2012: Statistical Supplement: 28).

II. Geographic Differences in the Household Food Insecurity Prevalence

The prevalence of household food insecurity varies greatly across geographic boundaries. Regionally, the prevalence of food insecurity is higher in the South (16.0 percent) and West (14.4 percent) than in the Midwest (14.2 percent) and Northeast (11.9 percent). Across metropolitan areas, the prevalence of food insecurity was highest for households located in principal cities of metropolitan areas (16.9 percent), intermediate for those in nonmetropolitan areas (15.5 percent), and lowest in suburbs and other metropolitan areas outside principal cities (12.7 percent) (Coleman-Jensen et al. 2013: 10). This section provides some explanations for why food insecurity rates differ across geographic regions.

Explaining Differences across Geographic Locations

Food insecurity rates differ across states as a result of both population characteristics and state-level economic conditions. Households with low incomes, low adult education levels, single-parent household heads, adults with a disability, adults who are unemployed and/or noncitizen household heads are more likely to be food insecure. Consequently, states with larger shares of these households are more likely to have a higher prevalence of food insecurity. State-level economic conditions, such as the average wage, cost of rental housing, unemployment rate, residential instability, high tax burden on low-income households, and participation in food and nutrition assistance programs, can also affect state-level food insecurity prevalence (Coleman-Jensen, 2013). By the same token, state policies that promote the use of federal food assistance programs by eligible households, increase the supply of affordable

housing, and reduce the total tax burden for low-income households are more likely to reduce a given state's food insecurity prevalence (Bartfeld and Dunifon, 2006).

Studies have been done to understand how local characteristics relate to household-level food security. Using the Wisconsin Schools Food Security Survey, Bartfeld and colleagues (2010) explored the relationship between community characteristics and household food security among households with elementary school children in Wisconsin. The data were collected from parents and guardians of a convenience sample of students attending 65 elementary schools in 26 counties at six time points over three years (2003–2005). These data focused on housing costs, transportation availability, proximity to supermarkets and grocery stores, degree of urbanicity, and the economic strength of the community.

Study authors found that these variables have measurable impacts on food security. Housing costs appear to be particularly important, as a $100 increase in median rent was found to be associated with a 21 percent increase in the odds of food insecurity. Results show that within one state, households face starkly different risks of food-related hardship based on differences in local housing costs. Availability of transportation—both public and private—plays a role in maintaining food security. Very low proximity to supermarkets (more than 15 miles away) increases the risk of food insecurity, even after controlling for local economic conditions and other factors (Bartfeld, Ryu, and Wang, 2010).

Given their results, Bartfeld and colleagues suggest that efforts to promote affordable housing could be an important strategy for improving food security. Furthermore, transportation-related findings suggest that strengthening public transportation infrastructure and/or increasing private vehicle ownership may reduce household food insecurity. While these changes focus on the household level, given households are encompassed within a given community, and reduction in their level of food insecurity would also reduce community food insecurity. Lastly, evidence regarding the importance of proximity to supermarkets and grocery stores implies that the lack of retail outlets in some areas may be another appropriate point of intervention. This study supports the notion that food insecurity results from a complex interplay of personal resources and the broader social and economic context, rather than from household resource constraints alone.

III. Predictors of Food Insecurity at the Community Level

Given the broad array of factors contributing to CFS, no single indicator can predict whether a community is fully food secure. An increased interest in the relationship between place of residence and food security has generated a growing body of literature on the topic, most of which is based in the United States.

In one review article, Carter and colleagues (2013) synthesized and critically appraised literature examining local environmental characteristics in relation to individual- or household-level food insecurity. In the 18 articles reviewed, the investigators divided place of living on an urban-rural continuum. While some studies found rural living to be associated with lower odds of food insecurity, others found the opposite, or that urban living was associated with lower odds of food insecurity.

These authors also reviewed studies on the relationship between social cohesion, a dimension of social capital, and residents' food security experience. Four of the eight reviewed studies

found that social cohesion, at the individual and community levels, had a protective effect against food insecurity, particularly among low-income respondents who are more likely to report experiencing food insecurity using the USDA food insecurity survey (see chapter 3). The authors' review of the effects of the types of food shopping outlets in a respondent's neighborhood and prices of food in these outlets finds that this line of research has yet to establish conclusive evidence linking local food environment and household food security.

Overall, Carter and colleagues found little consistency in how "place of residence" is defined across the studies under review—some authors focus on one neighborhood, while others examine multiple counties in one paper. They argue that more context-specific definitions of predictors and a specific focus on living location are needed in future work examining the relationship between place and food insecurity.

CHAPTER 3 - MEASUREMENT: AN OVERVIEW OF THE COMMUNITY FOOD ASSESSMENT

The Community Food Assessment (CFA) is a widely used strategy to assess and capture a range of indicators used to interpret CFS, such as perceptions of food access and barriers and opportunities for change. Findings from CFAs have been used to help organizations or local governments develop food plans. Food plans, sometimes called food action plans, are documents that outline a given city's or regional government's goals for improving its food system and addressing the issues found as a result of the CFA process. To date, the most widely applied Community Food Assessment guide is the USDA's Community Food Security Assessment Toolkit (Cohen, Andrews, and Kantor, 2002). The Toolkit provides a set of measurement tools for assessing different components of CFS and for measuring development and evaluation of related interventions. CFAs conducted with Toolkit measures include the Lopez et al. (2008) assessment of 169 Connecticut towns and the Bletzacker et al. (2009) assessment of a region in Appalachian Ohio. References for these studies may be found at the end of this report.

In 2002, another CFA guide was published by the Community Food Security Coalition (Pothukuchi, Joseph, Burton, et al., 2002), which designed its guide for community activists who have some type of organizing experience. While the guide does not necessarily require extensive research experience, the authors recommend that community activists partner with academic institutions for this skill set. In contrast to the USDA guide, which is a good resource for identifying data sources, the CFSC guide emphasizes step-by-step advice for those who work directly with their constituents. It also presents case studies to demonstrate CFA processes and outcomes.

Before detailing the components of a CFA, it is important to note that these assessments may be as large or as small as the team believes appropriate for its research questions and resources. The assessment team should carefully consider the trade-offs between specificity and broader policy effects for the communities under study. Smaller communities may serve as pilot sites, and the findings may be presented within the context of a larger geographic region. Many CFAs have been conducted, but the methods may not always have been rigorous nor the data sources scientifically validated. It is likely that a shortage of validated studies has caused a general inability to compare across CFAs. While scientific validation is a worthy goal, few groups can avail themselves of the necessary expertise and/or resources to meet that goal. More research and analysis are needed in this area to help balance these considerations, and support from funders would help to further this work.

I. Exploring CFA Components

Defining Community

Before beginning a CFA, assessor groups must identify their community. In many CFAs, communities are well-defined geographic areas. This decision limits the CFA scope but makes it more manageable. Geographic boundaries also often align with political boundaries, a situation that benefits CFAs by aligning assessments with regions where policymakers may make change (Pothukuchi et al., 2002). Though various assessor groups will define their communities geographically, the size of their communities will necessarily vary. In a review of nine CFAs from

around the nation, geographically defined communities varied from a single neighborhood to select zip codes within a city, entire cities, and a collection of counties within a state. Across these CFAs, population sizes ranged from 24,000 to 4.7 million people (Pothukuchi, 2004).

Some scholars have discussed the use of social, economic, and cultural characteristics as a basis for defining communities (Anderson and Cook, 1999). Findings from CFAs using socially or culturally defined communities, however, may not have far-reaching policy effects. Advocates who aim to improve the CFS status of particular socioeconomic or demographic groups are urged to frame these groups' needs within the context of a broader geographic community.

Developing the Community Profile

Once the community is defined, CFS assessors create a demographic and economic community profile. The purpose of a community profile in a CFA is to paint an accurate picture of the whole community, not just those who experience poverty or are at risk of food insecurity. Data on impoverished households experiencing food insecurity, however, are always included as baseline information in a CFA.

CFA community profiles also include a community's demographic information, such as race, gender, age groups, immigration status, household size, and structures. Community-level socioeconomic contexts, such as the data on local average wage and cost of living, provide more context for explaining why some households become food insecure, thus pointing out gaps in programs and services that would lead to greater CFS. These characteristics can be adjusted to fit a CFA's scope by, for example, changing the level of analysis from state to county, city, neighborhood, or specific zip code(s).

It is understood that a high-poverty community experiences greater food insecurity than a more prosperous one. However, Mammen and colleagues (2009) found that poor rural households in prosperous states experience more persistent food insecurity than equally poor households in less prosperous states. Using a material hardship index, the authors found that low-income families in prosperous states frequently make trade-offs between food, housing, and heating costs, even when their household income exceeds the threshold for government assistance. These findings illustrate how household- and community-level factors interact to create food insecurity, and that it is not only a problem experienced by communities with high poverty rates.

Community Food Resources

After assessors define the community and develop a community profile, they will describe the array of community food resources. These resources generally fall into two categories: food assistance programs and retail food resources. These resources are described briefly below.

Food Assistance Programs

Food assistance programs are vital for individuals and families when they cannot purchase food through regular market channels. CFAs should account for the federal assistance available in the defined community. This includes federal programs such as SNAP/Food Stamps, WIC, and the School Lunch Program. If the state/county/city has its own programs independent of federal funding, these programs should be added. Assessors should collect information

on a community's total number of participants (or rates) in public food assistance programs, number of enrollment offices for each program, and office locations. Federal program data may come from USDA's Food and Nutrition Services (FNS) or the department of health and human services in each state.

Assessors should also include emergency food services provided by private charities, such as food pantries, soup kitchens, food banks, shelters with meal services, and food rescue programs. They should collect data on the locations of services, total number of participants, and other relevant information, such as number of days or service hours.

Retail Food Resources and Affordability

Retail food resources are arguably the most important sources of food for most people. Retail stores include supermarkets (annual sale ≥ $2 million), grocery stores (annual sale ≤ $2 million), convenience stores (including gas stations that sell food), specialty stores (such as butchers and bakeries), and consumer food cooperatives and farmers' markets (USDA's Agricultural Marketing Service maintains a database of farmers' markets around the nation). CFA data should include the number of stores in each category, as well as their locations and hours. In addition, assessors should identify food retailers that accept federal food assistance benefits in the community. USDA's Food and Nutrition Service (FNS) maintains a public database of retailers that accept SNAP benefits (USDA FNS, 2014).

If community residents do not use regular channels of retail or food assistance programs, CFS assessors should account for alternative food collection methods. Possible alternative strategies may include field gleaning work, hunting and fishing, and backyard food production.

There are alternative strategies for learning about retail resources, such as through surveying community residents about shopping patterns or determining the cost of basic food items through a market basket analysis (systematic cost comparisons of essential food items across grocery stores). While these approaches may provide rich information for a CFA, they involve primary data collection and are often highly resource-intensive. They are helpful but not always necessary for CFAs.

Community Food Resource Accessibility

Once CFS assessors account for community food resources and affordability, the next step is to identify issues of access: potential barriers or problem areas that limit access to food. As Cohen et al. describe in the Toolkit (2002), key accessibility questions include:

1. Are food resources located near low-income neighborhoods?
2. Is public or private transportation available between resources and low-income neighborhoods?
3. What barriers limit people's use of community food resources?
4. Does the community have the infrastructure necessary to deliver federal food assistance benefits effectively?

CFS assessors can answer the first two questions through data collected by the US Census and local transportation authorities. Lack of transportation is a well-known barrier to food access (Block and Kouba, 2006; Sharkey, Horel, and Dean, 2010). The census collects data on private vehicle ownership by household, and assessors should identify this data source to determine whether data of vehicle ownership per household

(at least one vehicle per household) is available. Local transportation authorities typically maintain maps of public transportation routes. The cost of public transportation may also be a data point of interest. If public transit is expensive, it becomes a barrier rather than facilitator of access to food. Private transportation services (such as those for elderly residents) and the associated service routes should be identified. These resources may be located through local departments of social services or other entities.

Finally, since answers to the last two questions should come from community residents, original data collection is often time-consuming and expensive. These data, however, can shed light on factors often missing from larger CFS surveys. For example, we assume that car ownership weakens barriers to access because drivers can more easily get to food retailers far from home. For families living below the poverty line, however, having a car increases expenses and reduces disposable income available for food. Issues such as stigma (perceived or real), inconvenient hours of social service agencies or markets, and lack of information about eligibility for benefits present real barriers to access that may only become apparent through focus group discussions or in-depth interviews. Though assessors should consider the trade-offs of using secondary and/or existing data, they should also understand that primary data are beneficial, though not necessary, in completing their own CFA.

HOUSEHOLD FOOD SECURITY

Because a community consists of households of individuals, it cannot be truly food secure if any one household is food insecure. Data on household food security are therefore baseline indicators for community food security status. The best way to collect food security data is to conduct a household food security survey with a representative sample of households in the community in question (Cohen et al., 2002). Scientifically validated survey instruments are readily available for practitioners. (Please see the section "Defining Community" at the beginning of this chapter for more detail on defining community before conducting a community food assessment.)

The USDA initiated the US Food Security Measurement Project in the early 1990s, which culminated in the Household Food Security Survey Measure (HFSSM) in 1995 (Nord and Hopwood, 2007). This 18-question survey captures three types of experiences related to food insecurity and records responses qualitatively (e.g., open-ended responses) and quantitatively (e.g., yes/no responses). These three food insecurity experiences are:

1. Anxiety that the household food budget or food supply may be insufficient to meet basic needs.

2. Perceptions that food eaten by household members is inadequate in terms of quality and quantity.

3. Actual instances of reduced food intake and the consequences (e.g., physical sensation of hunger or weight loss) of reduced food intake for adults and children in the household (Bickel, Nord, Price, et al., 2000).

USDA's Economic Research Service (ERS) sponsors the food security component of the Current Population Survey (CPS), administered by the US Census Bureau. To supplement CPS data, food security surveys are administered annually. Table 3 includes 18 questions from the HFSSM in the USDA report *Household Food Security in the United States*, 2009 (Nord,

Coleman-Jensen, Andrews, et al., 2010). Taken together, responses to these questions reflect the different components of the food security definition put forth by the USDA and the FAO (see Table 1 on page 7 of this report).

CFS researchers may use a six-item short form to assess household food insecurity. This form includes only questions 2, 3, 6, 7, 9, and 10 from Table 3. The results from studies using the short form have been found to be valid and reliable, with high inter-item correlation between the responses and food security level. However, the question on balanced meals (3) often yields inconsistent results, suggesting that there may be some distinct understandings of a balanced meal across cultures/groups (Blumberg, Bialostosky, Hamilton, et al., 1999; Gulliford, Mahabir, and Rocke, 2004; Radimer and Radimer 2002).

COMMUNITY FOOD PRODUCTION

As a complement to strong federal nutrition safety net and emergency food assistance programs, local food production may alleviate some short-term food insecurity and hunger. In the long term, strong community food production resources can boost the effectiveness of federal food assistance and education programs through such measures as increased availability of high-quality, affordable food, strengthening economic and social ties between farmers and urban residents, and channeling a larger share of resident food spending back to the local economy (Cohen et al., 2002). Though many CFAs may be able to answer only one or two, key assessment questions for community food production include:

1. Are there local food production resources: community gardens, school gardens, community-supported agriculture, farms, dairies, fisheries, and other value-added facilities?
    a. Do these production units have a local distribution network that allows the food to be distributed and sold primarily within the community of interest (e.g., farmers' markets or CSA programs)?
    b. Do institutional food service outlets such as schools, colleges, and hospitals use locally produced foods?
2. Does the community politically and financially support local food production enterprises?
3. Is locally produced food available and affordable to all community members, particularly those who are low-income? If so, SNAP recipients could use their benefits at local farmers' markets or in CSA programs.

Data collected under these questions may include the number and location of local food production resources. These questions address issues related to food production and distribution, which in turn affect food availability, accessibility, and affordability for low-income residents. Negative answers may indicate a potential community food system problem (Cohen et al., 2002:53).

Given the CFS focus on environmental sustainability, CFA assessors may wish to include indicators on whether farms engage in sustainable practices. The details of this topic are beyond the scope of this review, but for those interested in exploring this topic further, please see the additional resources section at the end of the report.

II. Putting It All Together: CFAs in Action

The goals of developing CFS theory and measures are to identify what food secure communities

*Table 3. Questions Used to Assess Household Food Security in the CPS Food Security Survey**

1. "We worried whether our food would run out before we got money to buy more." Was that often, sometimes, or never true for you in the last 12 months?
2. "The food that we bought just didn't last and we didn't have money to get more." Was that often, sometimes, or never true for you in the last 12 months?
3. "We couldn't afford to eat balanced meals." Was that often, sometimes, or never true for you in the last 12 months?
4. In the last 12 months, did you or other adults in the household ever cut the size of your meals or skip meals because there wasn't enough money for food?
5. (If yes to question 4) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?
6. In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money for food? (Yes/No)
7. In the last 12 months, were you ever hungry but didn't eat because there wasn't enough money for food? (Yes/No)
8. In the last 12 months, did you lose weight because there wasn't enough money for food? (Yes/No)
9. In the last 12 months did you or other adults in your household ever not eat for a whole day because there wasn't enough money for food?
10. (If yes to question 9) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?
11. "We relied on only a few kinds of low-cost food to feed our children because we were running out of money to buy food." Was that often, sometimes, or never true for you in the last 12 months?
12. "We couldn't feed our children a balanced meal because we couldn't afford that." Was that often, sometimes, or never true for you in the last 12 months?
13. "The children were not eating enough because we just couldn't afford enough food." Was that often, sometimes, or never true for you in the last 12 months?
14. In the last 12 months, did you ever cut the size of any of the children's meals because there wasn't enough money for food?
15. In the last 12 months, were the children ever hungry but you just couldn't afford more food?
16. In the last 12 months, did any of the children ever skip a meal because there wasn't enough money for food?
17. (If yes to question 16) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?
18. In the last 12 months did any of the children ever not eat for a whole day because there wasn't enough money for food?

*Questions 11-18 asked only if the household includes children age 0-17

look like and where they may exist along a CFS continuum. As identified in the previous chapter, the different dimensions of CFS reveal a concept for which there are no absolute measures. As a result, there are a variety of approaches to conducting CFAs.

Table 4 summarizes three comprehensive CFAs from the United States. They are considered comprehensive because they evaluate multiple dimensions of CFS and engaged stakeholders from different sectors of the food system. Finally, the authors make policy recommendations based on their findings. These CFA examples also illustrate that comprehensive CFAs often require significant research expertise and sophisticated statistical tools. Accordingly, Burgan and Winne (2012) provide CFS advocates with examples of alternative approaches to comprehensive CFAs in *Doing Food Policy Councils Right: A Guide to Development and Action*.

III. Additional Measures for Consideration

Recent research indicates that social capital is associated with individual food security in the US (Martin, Rogers, Cook, et al., 2004; Garasky, Morton, and Greder, 2006; Mammen et al., 2009; Dean, Sharkey, and Johnson, 2011). Social capital is a "measure of trust, reciprocity, and social network," and it is applicable to individuals, households, and communities (Martin et al., 2004). Garasky et al. (2006) and Martin et al. (2004) found that the more a household could count on its friends or family for help (higher levels of informal social support), the less likely it was to be food insecure. Mammen and colleagues found that rural low-income families were able to stretch their limited budget by pooling resources with members of their informal social network. Dean, Sharkey, and Johnson found that low levels of perceived social capital and personal experiences with social disparity were associated with food insecurity in rural regions of Texas. All three studies discovered statistically significant effects of self-reported social capital on household food security. While these findings indicate a role for social capital in food security, more research is needed to understand whether aggregate community-level social capital has an effect on CFS.

CFS researchers may be able to identify and measure indicators of social relations between groups in the community, since social capital "inheres in social relations" (Cattell, 2001). Research in this area, particularly in identifying measures for social capital, is still growing, but large-scale surveys like the General Social Survey contain questions that shed light on factors associated with community-level relationships, such as community social cohesion and social control. Researchers may also consider using qualitative methods to explore the mechanisms through which social relations in a given community work to improve food access. Studies of the relationship between social capital and health (see Kawachi, Kennedy, and Glass, 1999; Cattell, 2001, Harpham, Grant, and Thomas, 2002) provide examples of how this broad concept works.

Table 4. Examples of CFAs: Community Definition, CFS Indicators, Approach, and Relevant Stakeholders

CFA Title	Food for Growth: A Community Food System Plan for Buffalo's West Side	Humboldt County Community Food Assessment	2012 Community Food Security in Connecticut: An Evaluation and Ranking of 169 Towns
Authors, Date	Almeida et al., 2003	Stubblefield et al., 2010	Rabinowitz and Martin, 2012
Community Definition	West Side of Buffalo (defined as West Side Target Area, with boundaries defined by city streets)	County	Towns
CFS Indicators	CFS in Buffalo's West Side using: Existing economic and social conditions (a demographic profile using measurements on population, household composition, housing income and poverty immigration, and racial and ethnic diversity) Food availability and cost vs. other neighborhoods Resident and food business food security perceptions	Poverty, food insecurity, and other obstacles to food access such as uneven number of food stores in different parts of the county and limited transportation options to travel to stores	Population At-Risk Ranking Food Retail Ranking Food Assistance Ranking Overall ranking
Approach: Data & Methods	Combination of quantitative and qualitative data	Secondary data for different county food system sectors (US Census; local health and nutrition-related organizations; existing reports and data sets) and primary qualitative and quantitative data from a small research project, including spatial analysis coding. Methods modeled after USFA CFA Toolkit.	Statistical method of combining multiple variables into a single indicator
Funding & Stakeholder Involvement	Research conducted by graduate students at the University of Buffalo Department of Urban and Regional Planning for the Massachusetts Avenue Project (MAP), Buffalo, NY. In-Kind Support: from Buffalo's Weed and Seed Program for report-printing. Several elements of the plan have been implemented by MAP, the sponsoring organization.	CFA as part of a larger project by the California Center for Rural Policy (nonprofit at Humboldt State University) and funded by the California Endowment "Addressing Food Insecurity with Dignity." Also involved were Institute for Spatial Analysis, representatives from the business and economic development community, farmers, local food advocates, people who run community gardens, food banks, food access and nutrition communities, social services groups, the local Latino and American Indian population, and representatives from various geographical regions of Humboldt County.	Funding: University of Connecticut Zwick Center for Food and Resources Policy; The Cooperative Extension System, and State of Connecticut Food Policy Council. Advisory: Various academic departments at the University of Connecticut.

CHAPTER 4 - CONSEQUENCES OF LOW COMMUNITY FOOD SECURITY

There is a robust body of literature that documents the effects of food insecurity on both children and adults at the individual level, specifically demonstrating adverse effects on learning, growth and development, and behavior. These effects were discussed in detail in the 2009 edition of this report.

Significantly less research documents the broader effects of food insecurity at the community level, such as how it relates to interpersonal relations and the well-being and prosperity of communities. This chapter reviews this work, including the transition from an individual/household perspective to one that focuses on impacts of food insecurity among communities and specific populations.

I. Transitioning to a Community Perspective

Hamelin et al. (1999) expand beyond the effects on individuals to investigate how and whether these consequences contribute to broader social implications of food insecurity. Through focus groups and individual semistructured interviews with 98 low-income households in Quebec City and its rural surroundings, Hamelin discovered three categories of consequences of food insecurity at the household level: physical impairment (defined by respondents as reduced learning in children and adults, loss of productivity, and sacrificing medication to food), psychological suffering, and socio-familial perturbations, described as disrupting household dynamics, distorted and unsustainable means of food acquisition and management, and modification of eating patterns and related rituals.

Unique to this study was the focus on implications at the societal level. Here, respondents noted effects such as an increased need for health care, intensified feelings of exclusion and powerlessness, erosion of the transfer of knowledge and practices, and hindrance of conviviality. Food insecurity was noted to decrease participation in social activities, and several respondents felt that the use of food pantries reinforced the development of a two-tiered food distribution system that separates those with adequate money for food from those without. Extrapolating these consequences to a broader scale, chronic experiences of food insecurity could intensify conflicts in society and hinder social or economic development.

Hamelin and colleagues also find that respondents who remained food insecure for a sustained period of time adapted to using community food resources efficiently and overcame prejudices against food assistance. Respondents also admitted, however, to engaging in several negative and illegal behaviors in order to feed their families. In analyzing the patterns and consequences of food insecurity from study interviews, the authors stated that "eventually, the search for food takes precedence over previously held values" and that negative behaviors to food procurement "may indicate the need for some guidelines to assess the social acceptability of practices that are used and/or fostered to assure the food security of the majority."

This study marks a transition in thinking about food insecurity as a state that simply affects an individual or family, to one that may have a significant impact on societal functioning and prosperity as a whole.

II. Population-Specific Impacts

Unfortunately, there is a lack of US-based research that is similar to Hamelin's study, and most US studies that address food insecurity from a broader perspective are limited to the Alaskan Native and Native American populations. The communities described in these studies are generally small, clearly defined local populations with well-recognized food security concerns. Together, they represent a good starting point for investigating this issue in the United States.

Studies that have looked into the community-wide effects of food insecurity among American Indian/Native American populations have cited a wide range of impacts including cultural changes, shifts in food production and consumption patterns, increases in chronic diseases and social problems, strained relationships, and alterations in the transfer of traditional skills to younger generations (Bauer, Widome, Himes, et al., 2012 Fazzino, 2010; Ford, 2009).

According to Fazzino (2010: 407), the replacement of the traditional Native American food production system with non-native mechanisms has its historical roots in the policy of assimilation. The assimilation policy practices decimated Native American food systems with the intention of eliminating Native tribes as unique cultural groups. Such practices were justified in the name of creating a more efficient food system for Native tribes. The externally imposed food systems have created a dependence on non-Native mechanisms to meet nutritional needs, which has greatly limited the autonomy of the Native Americans (Fazzino, 2010). The US commodity-oriented food production system has reduced the availability of culturally acceptable foods, a change that in turn threatens tribal food security. Research investigating this impact on the Tohono O'odham tribe from Arizona suggests that these changes have contributed to the gradual but marked decline in traditional styles of farming, food production, and traditional food consumption. In addition, these changes have led to less physical activity and coincided with negative health outcomes, including an increase in diabetes and obesity (Fazzino, 2010).

Native American Communities

Among Native American families living on the Pine Ridge Reservation in South Dakota, the prevalence of food insecurity and its consequences were found to have an effect on children's dietary intake, parents' perceptions of barriers to healthful eating, and parents' participation in *ti ole* (going to another's house for food in exchange for help around the house). Compared to their food secure counterparts (children whose parents responded affirmatively to fewer than two items on the six-item short form of the Household Food Security Scale), children from food insecure households had more frequent consumption of hot or other ready-made foods from a convenience store or gas station and increased consumption of pizza and fried chicken. Parents from food insecure households were more likely to report lower variety and poorer quality of fruit and vegetables in the stores where they bought groceries. In addition, food insecure parents were more likely to report that their family did not like fruits and vegetables and that it was difficult to find time to cook in the evening (Bauer et al., 2012).

In 2006, extreme climate-related conditions interacted with the food system to affect the food security of Inuit living in small rural communities in Canada. This event provided an opportunity to identify and characterize some

of the processes and conditions shaping vulnerability and to establish a baseline to consider future vulnerability, particularly the long-term implications of climate change (Ford, 2009). Research on these factors found that Inuit generally rely on traditional means of acquiring food, such as hunting and fishing, as well as on less traditional sources, such as store-bought food, which is becoming more popular among the younger generation.

Furthermore, several adaptive mechanisms emerged as a result of compromised traditional food availability. These included increased consumption of store-bought food; reliance on family members to share store-bought food; food bank use; purchasing poor quality store- bought food; and going without food for a number of days. Climatic and social changes that contributed to increased food insecurity also led to a change in community dynamics where fewer young people learned traditional skills such as hunting, land cultivation, and food preparation from older generations. The lack of these skill-transfer activities put generational relationships under strain, even at a time when the population was expanding.

Alaskan Bush Communities

Global environmental changes have been shown to negatively impact the food security of those living in rural Alaskan bush communities (Loring and Gerlach, 2009). As residents of these communities also largely prefer to maintain a subsistence lifestyle, they are subject to the same types of vulnerabilities as Native American populations. In addition to climate change, the food security of those living in bush communities is reduced by industrial land development; oil, gas, and mineral mining; and myriad other sociopolitical, cultural, and economic factors. Taken together, these factors have limited the access to and use of locally available resources such as wild fish and game. This threat to the community's food security has resulted in households shifting consumption patterns away from seasonal harvests of wild foods to imported, store-bought foods. This shift in eating patterns has coincided with a sharp rise in chronic disease prevalence in these communities, which may be linked to both a decrease in consumption of highly nutritious wild fish and game, and a decrease in the beneficial physical activities of hunting and fishing associated with a subsistence lifestyle.

Beyond the health impacts of this changing environment and food system, the decrease of hunting and fishing behaviors can also lead to a destabilization of gender roles and relationships of power and reciprocity (Loring and Gerlach, 2009). This argument proposes that degraded ecosystems can also degrade human communities by reducing local control over the quality, safety, and appropriateness of food; decreasing self-reliance by increasing dependency on the global food and fuel network; and increasing vulnerability through external linkages in the food chain that expose local systems to increased risk and uncertainty. This transition eliminates many people's traditional roles in the food chain, which are fundamental to maintaining individual and community health and stability. Reliance on nontraditional foods also exposes people to new vulnerabilities and economic dependencies: access to food becomes determined by one's ability to pay, and people's health and livelihoods become vulnerable to unexpected disruptions or variability in supply, pricing, and quality.

Conclusion

Though limited in number, these studies demonstrate that the effects of community food insecurity extend well beyond the individual and can have lasting impacts for communities and across generations. While the studies on Native American and Alaskan Native populations provide a starting point to understanding these broader effects, there remains an incredible need for further research and investigation into this facet of food insecurity across communities in the United States.

CHAPTER 5 - FOOD POLICY COUNCILS

Food policy councils (FPCs) are made up of stakeholders from various segments of a local, tribal, provincial, or state food system. FPC members may represent the broad categories of food producing, processing, distribution, consumption, and waste recovery, as well as others not in a supply chain (Harper, Shattuck, Holt-Giménez, et al., 2009). These councils contribute to community food security by examining the operation of local food systems and providing recommendations for improvement through policy change at organizational, local, state, and even federal levels. Although FPC names seem to link them to a specific geographic jurisdiction, city, county, or state, actually FPCs work on policies at multiple levels, ranging from the federal Farm Bill to state food production regulations, municipal zoning codes, and even institutional food services and programs (Scherb et al., 2012). The scope of this work often extends beyond the public policy arena, and FPCs may engage in direct service projects and programs, facilitate networks of food system stakeholders, and educate the public about the food system (Schiff, 2008).

Recognizing their growth and potential impact, food system researchers and practitioners have increased their efforts to examine the role of FPCs in improving the sustainability of food systems and community food security. To date, peer-reviewed research on FPCs is limited, but reports about the operational structure and experiences of earlier FPCs have increased in number, scope, and analytical depth (e.g., Harper et al., 2009; Schiff, 2008). Food system practitioners and practice-focused scholars have also produced research to document the successes, challenges, and experiences of FPCs and to develop technical training materials for new FPCs.

This chapter summarizes research on food policies, with a look back to the history of FPCs in North America; differentiates between types of FPCs, whether governmental, nongovernmental, or hybrid, and the associated advantages and disadvantages of each; and explains how council work can bring about food system change.

I. Food Policies and the Food System

Hamilton (2002) defines food policy as "any decision made by a government agency, business, or organization which affects how food is produced, processed, distributed, purchased and protected." Dahlberg (1994) adds that any policies that regulate food recycling and waste streams are also food policies. Policies are not limited to codified government actions, and "inactions by government" both by design and neglect may also "influence the supply, quality, prices, production, distribution and consumption of food" (Winne, 1997, cited in Harper et al., 2009).

Food policies encompass a broad range of humanitarian, public health, and environmental challenges, which may include hunger prevention, rural economic development promotion, food safety and protection of food supply, reversing the obesity and diabetes epidemics, and averting catastrophic climate change. Addressing any of these challenges will aid the development of healthy, sustainable, and equitable food systems (Yale Law School, 2010). Since no "Department of Food" exists within any governmental entity in the US, food issues are addressed by government

agencies in different departments at different policy levels. This piecemeal approach makes policy coordination a major challenge for stakeholders (Dahlberg, 1994). Better coordination of food-related policies across the food system is an important function of FPCs.

While federal agricultural policies like the Farm Bill create the framework for the national food system, stakeholders at regional, state, municipal, and local organizations have the potential to implement and improve organizational, local, state, and federal food policies (Winne, 2009, cited in Harper et al., 2009). These groups are increasingly examining their roles in influencing the food system (Clancy, cited in Scherb et al., 2012). For example, state and municipal policies, such as land use and transportation regulations, can affect farm viability and food access (Clancy, Hammer and Lippoldt, 2007); city zoning codes determine the location of supermarkets, grocery stores, and other food-retail outlets; and various public health programs and economic development strategies can influence the way producers and consumers participate in the local food system (Harper et al., 2009). According to a 2013 survey (Goddeeris and Hamm, 2013), assessing local government support for food system development, the average community has 3.6 policies related to food access and urban agriculture, a number found to be higher for municipalities (4) than for counties (2.4).

A Brief History of Food Policy Councils in North America

FPCs have formed at the local (city/town), county, state, and regional[1] levels. During the 1960s, organizations concerned about food policy issues at the state level emerged in the form of nutrition councils. The goal of nutrition councils was to improve policy coordination and implementation of programs that provide a dependable and nutritious supply of food to residents (Clancy et al., 2007). In the 1970s, states began to explore the option of establishing offices to address statewide food system issues ranging from farmland preservation to nutrition assistance program coordination (Clancy et al., 2007). At the time, few states were able to create statewide food policy councils; however, over time, the number of state FPCs has increased.

The motivation for developing local policy councils as a possible avenue for food system change grew out of the explosion in local food organizations and projects. By the late 1980s almost every larger US city or metro area had numerous food organizations, mostly nonprofits, working independently in such areas as community gardening, farmers' markets, and emergency food. Stakeholders' desire to have a "common table" around which they could identify community food challenges and opportunities catalyzed the organization of food policy councils, in part to have a means to engage government and to coordinate existing activities.

The number of FPCs surged at the turn of the 21st century. The first FPC was established in Knoxville, Tennessee, in 1982. In 2011, there were 96 identified in the US (Scherb, 2012). As of September 2014, there are 263 North American FPCs (200 in the US, 57 in Canada and six in tribal nations) at the state, provincial, regional, county, city, and tribal levels (Center for a Livable Future, 2014).

1 Regions exist at various scales. For our purpose, regional FPCs tend to include several counties.

II. Types of Food Policy Councils

While some FPCs operate as governmental organizations, others function as nongovernmental organizations (NGOs), or as a hybrid of the two types. Councils have come into being through state legislation, executive order issued by a mayor or governor, grassroots organizing, or even as a subsidiary of a nonprofit organization (Harper et al., 2009; Schiff, 2008). FPCs may also be organized and recognized according to where they are housed, for example, within a government agency, as a citizen advisory board to a government agency, as a stand-alone citizen advisory board, or as a nonprofit organization or grassroots group. Harper and colleagues (2009) also point out that it is possible to find FPCs created by government action that are not housed within government.

Organizations that function as FPCs may go by several different names. Harper and colleagues (2009) found "food policy council," "food advisory council," "food and agriculture coalition," "farm and food coalition," and "food system council" to be the most common. Leadership of the FPC varies depending on who initiated it (e.g., government appointed), where it is "housed" (e.g., nonprofit executive director), and how it is structured (e.g., revolving executive chairperson). At the city level, approximately 13 mayors currently have a dedicated position within city government focusing exclusively on food.

Further, there are many projects around the country that work on food policy but are not defined as food policy councils. For example, several states and counties have Healthy Eating and Active Lifestyle (HEAL) coalitions that bring together stakeholders from different sectors to work on programs and policies aimed at bolstering chronic disease prevention efforts. Regardless of differences in names, these organizations tend to share similar goals. They "serve as forum for discussions of food issues, foster coordination between sectors in the food system, participate in policy processes, and launch or support programs and services that address local needs" (Harper et al., 2009).

Advantages and Disadvantages of Different FPC Structures

According to Dahlberg (1994), who studied the experience of six FPCs (five cities, one county), local government relationships influenced the degree to which a council could achieve formal institutionalization. He found that institutionalization benefited councils through increased likelihood of having a budget, staff support, and power to review or plan food policies (Clancy et al., 2007; Dahlberg, 1994). In a separate study, Clancy and colleagues (2007) found that all eight of the government-affiliated FPCs in their study received in-kind support from local or county governments.

A strong relationship between an FPC and government improves FPC legitimacy in the eye of policymakers and helps councils advise government officials and make policy recommendations. The Baltimore City food policy director utilizes this strategy to inform the mayor of important food issues and prompt action by multiple city agencies that influence food system issues (Santo, Yong, and Palmer, 2014). A strong relationship appears to be an important element of an FPC, even when the FPC is not recognized through government orders but works closely with government officials. During the 1990s, the Philadelphia FPC was an informal private-public coalition, but it received strong support from the mayor's office. Like FPCs with legal standing through ordinances and city council resolutions, the Philadelphia FPC was able to serve in an advisory role to the city, including securing

mayoral endorsement of its food policy statement (Dahlberg, 1994).

The advantages of relationships with political offices, however, are not always guaranteed. For example, at times of political transition, such as a turnover of the mayor or governor, funding and political support for FPCs or food systems issues may be withdrawn (Dahlberg, 1994; Clancy et al., 2007; Harper et al., 2009). In a study of eight officially sanctioned FPCs, representatives from two inactive councils (Onondaga County and St. Paul) associated their end with a lack of funding (Clancy et al., 2007). In the same study, two state policy councils (Connecticut and Iowa) reported that political leadership contributed to the uncertainty of their future (Clancy et al., 2007).

An additional challenge for government-affiliated FPCs is that not all food systems stakeholders trust government institutions, and as a result, they may be less willing to collaborate on FPC policy initiatives (Scherb et al., 2012; Schiff 2008). Harper et al. (2009) report that half of the FPCs interviewed or surveyed (n=40) were formed as a result of grassroots activism. Grassroots political pressure can be critical especially when local political leadership is absent. Once those groups have undergone a critical examination of local food policies and food systems issues, they benefit by working with policymakers and seeking political recognition in order to effect system-wide change. The trade-offs associated with each type of FPC are summarized in Table 4 (Burgan and Winne, 2012).

Sometimes an FPC may transition from a government-sanctioned body to an organization. The Iowa Food Policy Council (IFPC) was formed by an executive order under Governor Tom Vilsack in 2000, and several subsequent executive orders were issued in the years that followed to extend the work of the IFPC. Changes in governorship, however, led to the end of IFPC's activities. From 2008 to 2010, more than 165 stakeholders representing food system sectors across Iowa engaged in strategic planning and assessment activities to re-establish the statewide FPC. With a grant from the W. K. Kellogg Foundation, they succeeded: in 2011, the Iowa Food Systems Council was brought back, but this time, it operated under 501(c) (3) nonprofit status (IFSC, 2011). The examples above indicated that FPCs experience

Table 4. Strengths and Weaknesses of FPCs by governance type (structure)

Nonprofit	
Strengths	Weaknesses
More control by food advocates	Less public accountability
Fewer bureaucratic restraints	Lack of official standing with elected officials
Diverse sources of funding	Lack of staffing
Public Sector (Government) FPC	
Strengths	Weaknesses
Public accountability/legitimacy	Bureaucratic inefficiency
Public involvement	Political infighting
Access to government staff	Less attention to community desires
Coordination of FS across departments	Changing levels of support

ongoing concerns about (1) funding (Harper et al., 2009), (2) establishing strong, organized leadership (Clancy et al., 2007; Dahlberg, 1994), (3) navigating complex political climates (Harper et al., 2009; Leib, 2012).

A critical function of FPCs' systems-level work is to cultivate good working relationships with various stakeholders who share a common mission in their work (Clancy, 2012). Such relationships also include those who most directly make decisions about the food system. Through ongoing collaboration and dialogue, these stakeholders may be able to develop common goals. Whether part of the public sector or independent (and councils often are a hybrid of the two), it is vital for an FPC to have some connection to government departments and elected officials.

III. How Food Policy Councils Effect Food System Change

FPC Membership

After surveying and interviewing 40 FPCs, Harper et al. identified three types of strategies for FPC member selection: self-selection; application (which is reviewed by existing council members), and election/appointment/nomination made by existing council members or government entity. Furthermore, FPC governance structure may determine membership: independent, nonprofit group membership may be self-selecting, while public-sector council members are usually named by executive or legislative appointment. In general, council membership ranges from nine to 24 individuals, with an average of 12 to 14 (Clancy et al., 2007) and terms of between one and three years (Harper et al., 2009). A 2012 survey of FPCs (n=56) found that 63 percent of FPC members were self-selecting, 25 percent were nominated and voted in by FPC constituents, 27 percent were appointed, and 11 percent reported other methods of becoming a member (Scherb et al., 2012).

As state-level FPCs are often created by legislation, more than two-thirds appoint their members. At the county level, about 14 percent of FPCs have members appointed, with all other FPCs evenly split between self-selection, election/nomination, and application. At the city or county levels, more than half of FPCs in the study include self-selected members, 36 percent appoint their members, and 10 percent have prospective members apply for seats (Harper et al., 2009).

Table 5. FPC & Policy-Related Activities — Type and Percent Reported Engagement

FPC Activities	Percent of Surveyed FPCs Responding yes*
Identify problems that could be addressed through policy	47 (94%)
Educate public about food policy issues	39 (78%)
Develop policy proposals	31 (62%)
Lobby for specific proposals	24 (48%)
Participate in the regulatory process	17 (34%)
Endorse other organizations'/institutions' policies	16 (32%)
Implement policies	11 (22%)
Other (including general food system advocacy, formation of coalitions, and provision of expert testimony to decision-makers)	4 (8%)

*Responses not mutually exclusive

FPC Activities

FPC activities aim to strengthen the economic vitality of the local food industry, improve local food production, give more choices to citizens, and minimize food-related activities that degrade the environment (Clancy et al., 2007). FPCs may also engage in research to support their work. For example, Greater Kansas City Food Policy Coalition (GKCFPC) has actively conducted research and written policy briefs used to inform policymakers and the public. The group led the effort to modernize the urban agriculture zoning code for Kansas City, Missouri, in 2010. In 2011, the group provided expert testimony before the Missouri State Senate, which subsequently passed a farm-to-table bill that established a committee to evaluate the ways in which Missouri government institutions may increase the amount of food purchased from Missouri farmers (GKCFPC website, www.kcfoodpolicy.org, accessed December 8, 2013). Clancy et al. (2007) and Schiff (2008) report that most FPCs engage in education and advocacy efforts that increase community residents' knowledge of local food systems, as well as inform food systems stakeholders from diverse sectors about how their fields affect one another.

IV. Assessing the Policy Impact of Food Policy Councils

FPCs are meant to serve the ultimate goal of policy change for sustainable and just food systems. Assessing their actual impact, however, can be challenging. Across the FCP studies reviewed, respondents reported the importance and desire for FPCs to engage in policy work (Clancy et al., 2007; Dahlberg, 1994; Scherb et al., 2012; Schiff, 2008). In their survey of FPCs, Scherb and colleagues (2012) found that while the overwhelming majority of respondents (94 percent) have identified problems that could be addressed through policy, not all of them have been able to influence the policy process. Table 5 includes the most common policy activities reported by respondents (Scherb et al., 2012).

Scherb et al. (2012), identify several challenges that prevent FPCs from fully engaging in policy work (Table 6). While time and financial support appear to be the greatest challenges, the lack of training or skill in engaging in the policy process is also a major barrier. A number of identified challenges are consistent with previous studies, such as FPCs' lack of dedicated resources for policy work, lack of council authority or leadership to make policy

Table 6: Barriers to FPC Involvement in Policy Work

Cited Barriers	Percent Surveyed FPCs Reporting Barrier
Lack of time	38 (76%)
Lack of financial support for policy work	33 (66%)
Lack of training or skills in how to engage in the policy process	23 (46%)
Other (including lack of trust in government, inconsistent support of government, and differences of opinion across industries on how to approach policy)	14 (28%)
Concern about violating nonprofit tax status	4 (8%)
Policy is not a priority	1 (2%)

decisions, and lack of government affiliation to support policy initiatives (Dahlberg, 1994; Clancy et al., 2007; Schiff, 2008). In a recent update of the Food Policy Council directory, FPCs expressed interest in working on these challenges through more policy training and assistance with organizational development. (http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-a-livable-future/projects/FPN/directory/online/)

Further Research

As FPCs continue to grow in the US, more work is underway to evaluate their strengths, weaknesses, and opportunities for engaging in food policy development. Scherb et al. (2012) suggest a need for more systematic evaluations of the processes, short-term outcomes, and long-term impacts of FPC policy work. Practice-oriented research may enhance our understanding of how food policy stakeholders at different levels of the food system communicate and work with one another (Clancy, 2013). Lastly, FPC research suggests that few councils actively collect data to evaluate and inform their own efforts. As FPC staff and volunteers work to improve local, state, and regional food systems through policy and programs, they should also aim to identify, collect, and share data measuring the success of their work, including its impact on community food security.

CHAPTER 6 - PEER-REVIEWED EVALUATIONS OF CFS INTERVENTIONS

Systematic efforts to identify and evaluate CFS interventions are limited but growing in number. This chapter outlines research on the effect of various program models that seek to improve the availability, price, and consumption of healthy foods in low-income and food insecure households. The reviewed interventions include community supported agriculture (CSA) models, programs to accept federal food assistance at farmers' markets, community gardens, urban agriculture, and healthy food retail interventions. While these interventions represent an important set of CFS initiatives, they do not represent an exhaustive list of efforts in this area.

This chapter is structured differently than the previous ones because of the nature of the analysis and the fact that the number of peer-reviewed publications on CFS interventions remains limited. We describe a range of basic approaches to CFS followed by illustrative real-world case studies of each. As new interventions are developed, and existing efforts continue, future research will need to support this process through regular and ongoing evaluation of those that are most effective and scalable for achieving CFS goals.

Community Supported Agriculture (CSA) Models

Community supported agriculture (CSA) models have evolved as a way for local and small-scale farmers to share the "risks and rewards" of each growing season with urban and suburban consumers. Customers typically provide an upfront payment for a season's worth of produce, to be picked up and/or delivered on a weekly basis. While CSAs connect consumers to their food sources and give them access to fresh, local produce, the model has been criticized as elitist. Specifically, low-income consumers do not have the financial resources to pay $300 to $600 at the beginning of a season, let alone assume the risk that the harvests may not yield the anticipated amount of produce (Andreatta et al., 2008). Moreover, as federal food assistance benefits are distributed on a monthly basis, households receiving such benefits are not eligible to use them to purchase produce through a typical CSA model (both because the typical cost of a CSA far exceeds the average monthly benefits, and benefits cannot be used to purchase produce for a future date) (Cohen and Derryck, 2011). In some cases, research has found that low-income groups receiving partially or fully subsidized shares may also be inconsistent in picking up produce shares, as they may be less invested financially in the CSA programs (Hoffman et al., 2012; Andreatta et al., 2008).

Recognizing the structural barriers for low-income consumers' participation in CSA-type arrangements, some interventions have emerged to make these programs more accessible across income groups. In this section, we discuss the approaches, opportunities, and challenges of five different CSA models that have worked to achieve this goal.

ILLUSTRATIVE STUDIES

The Corbin Hill Farm Project Inc. (CHFP) Farm Share program provides locally grown and affordable produce to low-income residents through shareholder investment (Cohen

and Derryck, 2011). Aggregating products from nearby farms, CHFP works with community-based nonprofits in food insecure neighborhoods in New York City to recruit employees and clients to become shareholders. Moving beyond conventional CSA producer-consumer models, CHFP is designed to enhance community self-reliance and urban food sovereignty by enabling shareholders to become farm owners over time. The goal is for shareholders to participate in decision making about what produce is grown and how it is grown and distributed. Shareholders pay one week in advance, making the program manageable for those on federal food assistance, and may choose to put their share on "hold" at any time. A limited number of subsidized half-price shares are also available. Initiated as an LLC in 2009 with $770,000 investment from 11 individuals (72 percent of which was funded by African Americans and Latino[a]s and 50 percent by women), the business was able to leverage an additional $430,000 in loans. By the end of its fourth growing season in 2013, 872 shareholders had been enrolled (Derryck, 2014).

CHFP also began a Community Health Partnerships initiative, which uses a wholesale approach to reach the community's most vulnerable residents through hospitals, pantries, schools, and Head Start centers. These organizations purchase produce in bulk from CHFP to distribute to populations they serve or use in the meals they serve. In April 2014, the group added a 501(c)3 nonprofit branch, expanding on the initial investment of the core founders to allow funding from foundations, federal and state governments, and individual donors to operate the Farm Share and Community Health Partner programs. The LLC entity will continue handling financing for physical infrastructure (Derryck, 2014).

Using an existing community-based program to reach low-income households, the Farm to Family (F2F) pilot in Boston used urban Head Start (HS) programs as the distribution centers for subsidized, low-cost weekly produce shares (participants paid $5 for a $15 value) from a local farm (Hoffman et al., 2012). They enhanced their efforts with bilingual educational materials related to childhood obesity prevention, weekly newsletters with recipes, and farm field trips for the children. A total of 42 parents and 45 staff members enrolled at four HS sites, representing 12 percent of HS families and 49 percent of HS staff at participating sites (staff purchased subsidized shares in order to encourage parent buy-in). Among parents who completed post-intervention surveys, 71 percent indicated that the program made a difference in their families' eating behaviors, helping them eat more fruits and vegetables and access them at a lower cost.

Although the CSA coordinators worked through a local community group, they encountered significant challenges in getting families to pick up their farm shares and stay committed for the entire season. Evaluators suggest that focusing on families whose children are enrolled in school-based programming during the summer, and using low-cost mechanisms such as text messaging to remind families to pick up their shares, could improve participation rates.

A program called City Fresh, which offers food shares to consumers in Cleveland, was formed through collaboration among various grass-roots organizations (Ohri-Vachaspati et al., 2009). This network connects rural and urban growers with new markets and existing programs to help improve access to fresh, locally grown produce in low-income neighborhoods. They do this by creating market clusters known as "Fresh Stops," which are similar to farmers' markets but also include learning tables with recipes, nutrition info, and food sampling. Shares are available to consumers of all income levels, though subsidies— coming from surplus payments from higher-income shareholders, business sales, and

a grant—are available for families at or below 185 percent of the federal poverty level. The program also trains urban gardeners in entrepreneurial skills. After three years, the program has engaged over 750 families and individuals, 38 percent of whom qualified as low-income, and distributed 7,333 shares of produce from 26 farms. Participants who reported eating at least five servings of fruits and vegetables a day increased from 36 percent to 56 percent, and low-income participants reported a greater magnitude of increase.

Another novel approach to make CSA shares more affordable has come from the health insurance industry. Three (previously four) health insurance providers in Wisconsin offer a rebate to members who join a CSA program for vegetables (Balch, 2014; Jackson et al., 2011). Although not directly aimed at low-income residents, the program provides $100 to individuals and $200 for families when they sign up, reducing the share price by up to 40 percent. The program began in 2005 and, as of 2014, engages over 50 organic farms and (for the two providers willing to share data) over 3,768 participants. The rebate program is estimated to have increased CSA membership in the area by 35 percent, though farmers expressed—and participants reinforced—concern about the longevity of the program if the rebates end. Evaluators' recommendations to improve such a program include providing more education on seasonal eating, improving the efficiency of the rebate process, and tying the rebate to a percentage of the CSA share instead of a direct dollar value.

A final example of this work is a North Carolina–based CSA program designed specifically to reach low-income households (Andreatta et al., 2008). Funded through a $21,500 grant from the North Carolina Food Policy Council, the program paid farmers directly for CSA shares that were then provided free of charge to shareholders. Solving food insecurity was not an expected outcome of the project, but it did have a small effect in reducing food access problems. The 39 low-income families in the program altered their eating, shopping, and cooking habits during the project, and 91 percent of post-harvest interviewees reported that participation in the CSA program had reduced their overall spending on vegetables. The sense of community gained from being part of a social food network was another notable result.

Nevertheless, the project's long-term sustainability and scalability remain questionable, especially as its operations are entirely dependent on outside funds. Evaluators proposed that instead of providing shares for free, the project could make the upfront payment to the farmer, and then ask shareholders to make weekly repayments. This approach may decrease difficulties in getting shareholders to collect their shares, complete journals and post-program interviews (required for participants), and attend farm activities. They also suggested cooking and food preservation classes to help shareholders fully reap the benefits of CSA participation.

Farmers' Markets and Produce Stands

Farmers' markets are often promoted as a mechanism for strengthening community food security, as they offer healthy, local, and often sustainably produced foods; a higher profit margin for producers from direct sales; and a space for community building. Nevertheless, many farmers' markets are not easily accessible to low-income households owing to socioeconomic barriers, seasonal availability, consumer perceptions, location and transportation concerns, and other logistical challenges.

Prices at farmers' markets can be, or are perceived to be, higher than those at traditional food outlets, thereby targeting higher socioeconomic classes (Fang et al., 2013). This dynamic becomes even more apparent when consumers must travel to middle-class neighborhoods to visit farmers' markets, especially given limited vehicle ownership and poor access to markets by public transit (Markowitz, 2010).

One of the main reasons for the inaccessibility of farmers' markets, even when they are located in or nearby underserved neighborhoods, stems from a lack of equipment to process federal food assistance benefits. After the transition from paper-based vouchers to electronic EBT cards in the late 1990s, the redemption of SNAP benefits at farmers' markets dropped by nearly 50 percent between 1994 and 1998 (Bertmann et al., 2012). In 2010, only .01 percent of all SNAP benefits were redeemed at farmers' markets (Bertmann et al., 2012), a rate significantly lower than the 0.2 percent of food dollars that American consumers spend at farmers' markets (Cole et al., 2013). Only 12 percent of farmers' markets even had the ability to redeem SNAP benefits in 2010 (Oberholtzer et al., 2012).

Wireless terminals cost an average of $30/month, with service fees from $15 to $25 and transaction costs at $0.10 each (Buttenheim et al., 2012). Additional expenses include staff time to run the machine (8–10 hours/week), wooden tokens to use around the market, and materials for marketing the service (Krokowski, 2014). Lower signal reliability and density of potential customers further limit terminal feasibility in rural areas. Given that supermarkets and other SNAP retailers with landline access currently receive EBT technology and processing for free, various programs over the past decade have worked to dismantle this inequity and ease acceptance and use of federal food assistance at farmers' markets. Although program administration has been uneven, the USDA Farmers Market Promotion Program has attempted to address this problem by providing grants to receive machines for free or at significantly reduced rates.

Experts recognize that, despite their idealized appeal, farmers' markets are not a "silver bullet" solution to community food insecurity (Fang et al., 2013). The most successful ones in low-income communities have come from those driven by community-based support, public decision making, and inclusive organizing (Markowitz, 2010; Hicks and Lambert-Pennington, 2014). Even when market services and incentives succeed in attracting low-income consumers and increasing their consumption of fruits and vegetables, vendor concerns and benefits must also be addressed to ensure long-term success (Krokowski, 2014). Increasing SNAP acceptance and use at small and medium-sized markets is one strategy that has been found to improve farmers' sales more than at larger markets (Oberholtzer et al., 2012). Nevertheless, subsidies are usually required to offset some of the costs of serving these communities—whether to process federal food assistance benefits, provide incentives to low-income consumers, or encourage markets to buy unsold produce from farmers (Markowitz, 2010).

ILLUSTRATIVE STUDIES: MARKET LOCATIONS

One study set out to determine whether placing farmers' markets in low-income communities without any other intervention activities or additional financial incentives would result in increased fruit and vegetable intake by residents (Evans et al., 2012). Two farm stands selling a variety of locally grown and culturally familiar produce, and equipped to accept SNAP benefits and FMNP vouchers, were placed outside community sites in two urban, ethnically diverse, low-income communities in Austin, Texas, for

12 weeks. The 61 eligible residents surveyed before and after the intervention reported small but significant increases in their consumption of fruit, fruit juice, tomatoes, green salad, and other vegetables after the stands were present.

Another study looked at the economic impact of adding a new farmers' market in an underserved neighborhood in Ontario, Canada, and found that it contributed to the reduction in the price of healthy foods sold in that community by 12 percent in three years (Larsen and Gilliland, 2009). Despite these benefits, maintaining profitable markets can be a challenge, especially to farmers (Fang et al., 2013). Finding prices that are acceptable to both the consumer and producer is only the first barrier to improving this dynamic: Farmers' markets also face unique barriers that other food sales operations do not. For instance, limited hours of operation (both weekly and seasonably) and produce selection prevent farmers' markets from being a one-stop shopping experience, a barrier to time-strapped consumers working multiple jobs or without affordable child care (Fang et al., 2013; Markowitz, 2010).

ILLUSTRATIVE STUDIES: ACCEPTING FEDERAL FOOD ASSISTANCE

A research team in Arizona studied the impact of providing wireless terminals on farmers' markets' overall sales and the redemption of SNAP benefits (Bertmann et al., 2012). Selecting five outdoor markets for the intervention, they found that sales increased significantly at four of the five markets; and in at least three of these markets, the increase in overall sales more than offset the cost of the terminals.

A similar intervention in King County, Washington, found less promising results (Cole et al., 2013). This intervention was implemented across nine markets in lower-income regions and included subsidized EBT terminals for processing SNAP, efforts to encourage vendors to apply for acceptance of WIC cash value vouchers, and WIC staff who worked with market managers and vendors to provide outreach and support services. The effort resulted in 10 of 125 vendors installing an EBT terminal, and six markets with a central market terminal. In addition, 38 of 88 WIC-eligible vendors agreed to accept vouchers. Overall, the number of market stalls accepting SNAP rose from 80 to 143, an increase of 79 percent. Although market managers and vendors valued low-income consumers and were willing to accept some inconvenience to serve them, redemption rates remained low. Evaluators suggested that terminal interventions be complemented with broader structural changes, such as improving market accessibility (location, transportation, hours), and increased outreach to low-income shoppers to further improve participation. The marketwide terminal model offered an economy of scale that may reduce overall financial barriers. Nevertheless, without ongoing subsidies, the costs of equipment and fees would be too high for the intervention to continue. A similar study also found that a one terminal per vendor program is not sustainable at this time without subsidies (Buttenheim et al., 2012).

The San Francisco Public Health Department partnered with a local nonprofit organization, Roots of Change, and the local SNAP program to develop another innovative model (Jones and Bhatia, 2011). Beginning with technical assistance to one market in 2004, the SFPHD expanded its efforts to eventually mandate EBT and SNAP acceptance at all farmers' markets by 2007. From 2006 to 2011 (when the study was conducted), annual SNAP sales grew by an average of 57 percent each year.

ILLUSTRATIVE STUDIES: INCENTIVES

Subsidies are typically required to help alleviate the challenge in finding prices that are affordable to consumers while adequately compensating farmers, who often qualify as low-income themselves (Markowitz, 2010). One example of such a subsidy is the San Diego Farmers Market Fresh Fund Incentive Program, which matches—up to $20 per month— the value of federal food assistance benefits (SNAP, WIC, and Supplemental Security Income) for customers purchasing fresh produce at five farmers' markets in the city (Lindsay et al., 2013). The program engaged 7,298 eligible participants during the study period, 82 percent of whom had never been to a farmers' market. A large increase in diets self-reported as "healthy" or "very healthy" was observed among the 252 participants who completed both baseline and 12-month follow-up surveys. Meanwhile farmers and other market vendors reported that 48 percent of their total market revenue came from this program.

The Philly Food Bucks program provides another model for bonus incentive at farmers' markets (Young et al., 2013). Food Bucks were distributed in the form of $2 bonus incentive coupons for every $5 in SNAP benefits used (no upper limits) at farmers' markets (75 percent of redemptions) and by community organizations working with SNAP-eligible clients who may not frequent farmers' markets in the first place (25 percent of redemptions). After the first two years of the program, average SNAP sales per market in low-income areas more than doubled. Food Bucks users were 2.4 times more likely than nonusers to report increasing their produce consumption since becoming a market customer.

New York City's Health Bucks Program offers a similar financial incentive program for farmers' markets (Baronberg et al., 2013). The program provides SNAP recipients with a $2 coupon for every $5 spent using SNAP benefits at participating markets in high-poverty neighborhoods. Following implementation of the intervention, average daily per-market EBT sales among all markets accepting SNAP benefits rose from $114.55 in 2006 to $465.87 in 2009, and daily sales averaged $170.79 higher than nonparticipating markets. Further research is needed to examine the optimum incentive level needed to change SNAP purchasing patterns. Other programs such as Michigan's Double Up Food Bucks are conducting similar reviews of their initiatives (Hesterman, 2012).

Community Gardens and Urban Agriculture

Food gardens—both at the community and household levels—and urban agriculture have been promoted as a means for fostering community food security. Gardening enables participants to access and consume more healthy foods, and gardeners are twice as likely as non-gardeners to consume the recommended five servings of fruits and vegetables a day (Litt et al., 2011; Alaimo et al., 2008; Blair et al., 1991). However, critics state that there is little evidence to support the idea that gardens can make a significant difference in community food security and dietary quality (Hallsworth and Wong, 2013; McCormack et al., 2010).

Few, if any, community garden projects are intended to replace traditional food retail or would claim to lead to food self-sufficiency. The criticism that cities may not be able to meet all year-round food needs through urban agriculture and community gardening underappreciates the benefits of this approach as one part of the mix of solutions to reform the food system (Weissman, 2013; Evans and Miewald, 2013).

ILLUSTRATIVE STUDIES

Community gardening and urban agriculture add to the tapestry of food sources available in communities across the country that can improve household food security (Smith and Harrington, 2014). In one study, Philadelphia community garden participants reported savings of $700/year/family in food expenditures (Brown and Carter, 2003). Since community food security focuses on fostering individual and community well-being while also ensuring ecological sustainability, community gardens have much more to offer, and be judged on, than merely their potential outputs in terms of food production. Community gardens have been shown to improve neighborhood property values by encouraging economic redevelopment, particularly in distressed communities (Voicu and Been, 2008). Urban green spaces, which include gardens, have been associated with reduced neighborhood crime rates (Kuo and Sullivan, 2001). In addition to providing a place to be physically active, gardeners report improved psychological and social well-being from participation (Armstrong, 2000; Wakefield et al., 2007).

Community building may be the most important benefit of community gardens, particularly in how it brings together a diverse group of individuals to collaborate on work that requires knowledge, creativity, and flexibility to be "successful." A case study of Latino community gardens in New York City found that the gardens served more as cultural and social neighborhood centers than as agricultural production sites (Saldivar-Tanaka et al., 2004). A literature review of studies on home gardeners found that even those who faced food insecurity valued the food they grew "as much or more for its social value than for its contribution to their and their families' subsistence" (Kortright and Wakefield, 2011:40). Others point to social and political skills gained through community gardening, such as community organizing, fundraising, and consensus decision making, which can empower residents to become civically engaged (Travaline and Hunold, 2010).

Healthy Food Retail

New local, state, and federal policies and programs have been underway to improve community food security through improved physical access to and affordability of healthy food in retail environments. Some of these interventions focus on increasing the number of grocery stores and supermarkets in underserved urban and rural areas. While such efforts have been expanding rapidly across the nation over the decade, especially with the launch of first lady Michelle Obama's National Healthy Food Financing Initiative in 2011, very few evaluations of these interventions have been published (Donald, 2013; Cummins et al., 2014).

ILLUSTRATIVE STUDIES

One of the first-ever studies of the effects of a new supermarket on diet in a food desert was conducted in Leeds, England (Wrigley et al., 2003). Researchers found significant increases in food access (in terms of average distance traveled to a main store) and fruit and vegetable consumption among some groups. Nevertheless, in absolute terms, the dietary changes were small (about three more servings per week). Another study analyzing the effects of a new grocery store in a low-income neighborhood in a midsized city in California found no significant changes in food purchasing and consumption patterns six months after the store opened (Wang et al., 2007).

The first prospective quasi-experimental study on the impact of supermarket development in a low-income community compared changes in diet and psychological health in a community in Glasgow, Scotland, after a new supermarket was built (Cummins et al., 2008). After comparing the results with those of a control group, the study found little to no improvements in self-reported intake of fruits and vegetables, though there were small improvements in psychological health.

The Pennsylvania Fresh Food Financing Initiative (PFFI), one of the first healthy food retail programs in the US, was funded through a variety of projects throughout the state to stimulate grocery store development with loans and grants from 2004 to 2010. In an evaluation of an intervention funded through the PFFI, researchers found that the new supermarket studied improved residents' perceptions of food accessibility, though it did not change their reported intake of fruits and vegetables after six months (Cummins et al., 2014). Few residents indicated that they had adopted the store as their primary food store. Critics of the study design state that six months was not a long enough period of time to significantly change dietary habits; however, other intervention evaluations have had similarly short follow-up periods. Nevertheless, these findings confirm previous evidence that behavior change is not as simple as merely placing new stores in underserved neighborhoods; increasing the promotion of new stores and their products, as well as improving the affordability of foods within them, is also needed to change food purchasing and consumption patterns (Wang et al., 2007).

The first randomized controlled trial to focus on such in-store marketing efforts in low-income community supermarkets was recently published by Foster et al. (2014). It found that simple placement and product availability strategies significantly influenced the purchase of certain foods. Results from other studies assessing interventions aimed at smaller stores could also be valuable in improving larger store interventions. A review of small store interventions to improve healthy food access and consumption found that most trials showed a positive impact of multifaceted approaches to improving healthy food supply (through food provision and infrastructure) and demand (marketing) (Gittelsohn et al., 2012). More research is needed to determine the impacts of price manipulations, reviewers noted, as a relatively smaller number of interventions attempted to increase access through cost-related incentives.

Conclusion

This chapter reviewed the background, basic approaches, strengths, weaknesses, and evaluations of some of the most common types of community food security interventions. CSA program models aimed to improve food insecurity vary greatly, making it difficult to compare results from one to another. As noted by a literature review focused on evaluating farmers' market programs and community gardens, few well-designed research studies, using control groups, have been conducted to evaluate the impact of such efforts on nutrition-related outcomes (McCormack et al., 2010). Evaluations of healthy food retail interventions remain limited, and those that exist have very small sample sizes and follow-up periods.

Other innovative strategies that have been proposed to improve community food security include mobile produce vending (Brinkley et al., 2013), community kitchens (Iacovou et al., 2013), and gleaning (Hoisington et al., 2001). However, as few studies document and evaluate these approaches, especially with regard to their implications for addressing CFS, they were not included in the above analysis.

This literature review suggests the need for more evaluations, particularly well-designed quasi-experimental ones, of CFS interventions to better understand their impacts.

APPENDICES

Appendix A – Literature Search Methods

Our literature review strategy included three distinct phases. The first phase involved a systematic search of the literature according to a pre-set list of parameters, including publication dates, geographic locations, and type of research (e.g., peer-reviewed) (Tables 6 and 7). Given that this report is an update, these parameters complement and build off those explored in the 2009 report *Community Food Security in United States Cities: A Survey of the Relevant Scientific Literature*.

Through conducting the Phase 1 search, we recognized a lack of clear conceptual boundaries for identifying all relevant CFS-related research. We also found that valuable CFS work may not be captured within the peer-reviewed literature. Therefore, in order to more comprehensively capture this literature, we developed and implemented a second, more flexible search phase. This second phase included a broader set of resources (e.g., high-quality, yet informally published work) and new search terms that had emerged as relevant to CFS following the Phase 1 review.

The third phase built off the second one, and focused on gray literature that emerged during our review and evaluated the work of organizations or coalitions working to improve CFS (including data to support their claims). In large part, this literature is identified as resources for report users (Appendix B – Additional Resources), and may not be detailed within report chapters.

Details of each search phase are described below.

Phase 1: Pre-Set Parameters for Review of the CFS Literature

The following parameters were used to guide our initial review of the literature:

- With the exception of theoretical articles or thought pieces on the community food security movement, we searched for and reviewed literature published since 2009 in peer-reviewed journals and conference abstracts. This date was selected to best update the publication *Community Food Security in the United States Cities: A Survey of Relevant Scientific Literature*, published in 2009 and reviewing literature published up to December 2008.

- We sought academic articles that dealt with the history, frameworks and theory, measurement, magnitude and predictors, consequences, and interventions associated with the community food security concept.

- Using a snowball sampling method, we searched for academic articles that cited the earliest theoretical articles on the concept of community food security.

- We limited our scope by excluding articles that focused solely on food security or community development. However, we kept articles where the authors discussed potential application for CFS-related research or advocacy work.

- Given the small number of existing peer-reviewed publications on community food security, we reviewed several "gray-literature" publications by groups leading community food security work.

- We focused on literature published in the United States

Guided by these criteria, we searched for relevant literature using the following databases and search terms:

Table 6. List of Databases Searched (Phase 1)
Agricola
Academic Search Complete
Earth trends
General Science Full Text
Google Scholar
International Bibliography of the Social Sciences
NASD
Popline
PubMed
SCOPUS
Sociological Abstracts
Web of Science
Worldwide Political Science Abstracts
AFHVS CONFERENCE
APHA Conference

Table 7. Examples of Search Terms (Phase 1)
"Community Food Security" AND "History"
"Community Food Security" AND "Background"
"Community Food Security" AND "Progress"
"Community Food Security" AND "Theory"
"Community Food Security" AND "Frameworks"
"Community Food Security" AND "Conceptual Models"
"Community Food Security" AND "Social Capital"
"Food Security" AND "Social Capital"
"Food Security" AND "Frameworks"
"Food Security" AND "Conceptual Models"
"Community Food Security" AND "Theory" OR "Theories"
"Food Security" AND "Theory" OR "Theories"
"Food Policy Council" AND "Community Food Security"
"Local Agriculture" AND "Community Food Security"
"Community Food Security" AND "Measurement"
"Community Food Security" AND "Indicators"

Phase 2: Review of the CFS Literature Based on Emerging CFS Terms & Concepts

Following the Phase 1 review, we conducted a second review of CFS literature according to the following parameters:

- We reviewed publications by nongovernmental agencies that facilitate public-private partnerships in building CFS.
- We included community food assessments conducted by community-based organizations in collaboration with university research support.
- We conducted additional literature searches using new search terms that emerged during Phase 1.

Phase 3: Identifying relevant resources for practitioners

- During our review, the number of food policy councils and coalitions working on CFS grew nationwide. A large amount of gray literature analyzing the role and impact of food policy councils on CFS was subsequently published online. The third phase focused on reviewing and including this additional work.
- Many of the results from Phase 3 can be found in Appendix B – Additional Resources.

Appendix B – Additional Resources

The following lists outline additional resources that may be of interest to readers. These resources include open-access journal articles and gray literature that are not explicitly included in the body of the report.

Chapter 1. CFS History, Definition, and Frameworks

Food Worker Rights, Food Justice, and Working Conditions

REPORTS

- Food Chain Workers Alliance (2012) *The hands that feed us: challenges and opportunities for workers along the food chain.* Los Angeles: Saru Jayaraman. Retrieved December 16, 2013, from: http://foodchainworkers.org/wp-content/uploads/2012/06/Hands-That-Feed-Us-Report.pdf

- Food Empowerment Project (2012). *Slaughterhouse workers.* Retrieved December 16, 2013, from: http://www.foodispower.org/slaughterhouse_workers.php

- Human Rights Watch (2004). *Blood, sweat and fear: workers' rights in meat and poultry plants.* Washington, DC. Retrieved December 16, 2013, from: http://www.hrw.org/reports/2005/01/24/blood-sweat-and-fear

- Liu, YL. (2012). *Good food: good jobs for all.* New York, NY: Applied Research Center (ARC). Retrieved December 16, 2013, from: http://www.rockefellerfoundation.org/blog/good-food-good-jobs-all

- Liu, YL, Apollon, D. (2011). *The Color of Food.* New York: Applied Research Center (ARC). Retrieved December 16, 2013, from: http://www.foodfirst.org/sites/www.foodfirst.org/files/pdf/food_justice_2-11.pdf

- Giancatarino, A; Noor, S. (2014) *Racial Equity in the Food System.* New York, NY: The Center for Social Inclusion. Retrieved September 22, 2014, from: http://www.centerforsocialinclusion.org/wp-content/uploads/2014/07/Building-the-Case-for-Racial-Equity-in-the-Food-System.pdf

- Southern Poverty Law Center. (2010). *Injustice on our plates: Immigrant women in the US food industry*. Retrieved December 16, 2013, from: http://cdna.splcenter.org/sites/default/files/downloads/publication/Injustice_on_Our_Plates.pdf

BOOKS

- Holmes, S. (2013). *Fresh fruit, broken bodies: migrant farmworkers in the US*. Berkeley: University of California Press.

- Jayaraman, S. (2013). *Behind the kitchen door.* Ithaca, NY: Cornell University Press.

- McMillan, T. (2012). *The American way of eating: undercover at Walmart, Applebee's, farm fields, and the dinner table.* New York: Scribner.

Chapter 2. Magnitude and Predictors

Health Equity and Place Tools: Increase Access to Healthy Food, list of resources published by PolicyLink.
http://www.policylink.org/site/c.lkIXLbMNJrE/b.5136713/k.3948/Health_Equity_and_Place_Tool_Group.htm.

National Equity Atlas.
http://nationalequityatlas.org

Chapter 3. Measurement: Community Food Assessments (CFAs)

Embry, O.; Fryman D.; Habib, D. et al. (2012). *Whole Measures for Community Food Systems: Stories from the Field*. Portland, Oregon: Community Food Security Coalition. Retrieved from: http://www.wholecommunities.org/pdf/WholeMeasuresStories%20copy%202.pdf

W.K. Kellogg Logic Model Development Guide (2006) and Evaluation Handbook (2010).
http://www.wkkf.org/resource-directory/resource/2006/02/wk-kellogg-foundation-logic-model-development-guide

For examples of food plans and community food assessments, visit the Food Policy Networks Resource Database (www.foodpolicynetworks.org)

Healthier food retail: Beginning the Assessment in your community.
http://www.cdc.gov/obesity/downloads/HFRassessment.pdf

Robert Wood Johnson's evaluation tools and reports for their grantees. Excellent examples.
http://www.rwjf.org/en/research-publications/find-rwjf-research/2009/12/the-robert-wood-johnson-foundation-evaluation-series-guidance-fo.html

Chapter 4. Food Policy Councils

Harvard Food Law and Policy Clinic produced two comprehensive guides on state and local food policy.
http://blogs.law.harvard.edu/foodpolicyinitiative/publications/

Food Policy Networks resource database, listserv and directory (maintained by the Center for a Livable Future).
www.foodpolicynetworks.org

Thought About Food? A Workbook on Food Security and Influencing Policy (2005). Developed by Food Security Projects of the Nova Scotia Nutrition Council and the Atlantic Health Promotion Research Centre, Dalhousie University.
http://partcfood.msvu.ca/index.htm.

Model Healthy Food System Resolution (2013). Developed by ChangeLab Solutions.
http://changelabsolutions.org/publications/food-system-resolution.

Doing Food Policy Councils Right: A Guide to Development and Action.
http://www.markwinne.com/wp-content/uploads/2012/09/FPC-manual.pdf.

Pages 18-22 discuss CFAs as well as alternatives to comprehensive CFAs.

Chapter 5. Peer-Reviewed Evaluations of CFS Interventions

Kobayashi M, Tyson L, and Abi-Nader J. (2010). The Activities and Impacts of Community Food Projects. USDA/NIFA.

Healthy Food Access Portal - http://healthyfoodaccess.org

Center for Disease Control and Prevention maintains a healthy food environment website with several resources http://www.cdc.gov/healthyplaces/health-topics/healthyfood_environment.htm

USDA Food Environment Atlas assembles statistics on how food environment indicators stimulate research on the determinants of food choices and diet quality at national level. http://www.ers.usda.gov/data-products/food-environment-atlas.aspx#.U-Jojlbu8jM

Know Your Farmer, Know Your Food Compass Map shows efforts supported by USDA and other federal partners as well as related information on local and regional food systems for the years 2009-2012. http://usda.gov/maps/maps/kyfcompassmap.htm

Planning for Food Access and Community Based Food System: A National Scan and Evaluation of Local Comprehensive and Sustainability Plans. https://www.planning.org/research/foodaccess/pdf/foodaccessreport.pdf

American Planning Associations Food System resources https://www.planning.org/nationalcenters/health/food.htm

Wallace Center at Winrock International: resource library features case studies, research, innovative models, guides, webinars, and toolkits. https://wallacecenter6.squarespace.com/resourcelibrary/

Figure 1. Community Food Security Goals and Community Food Assessment

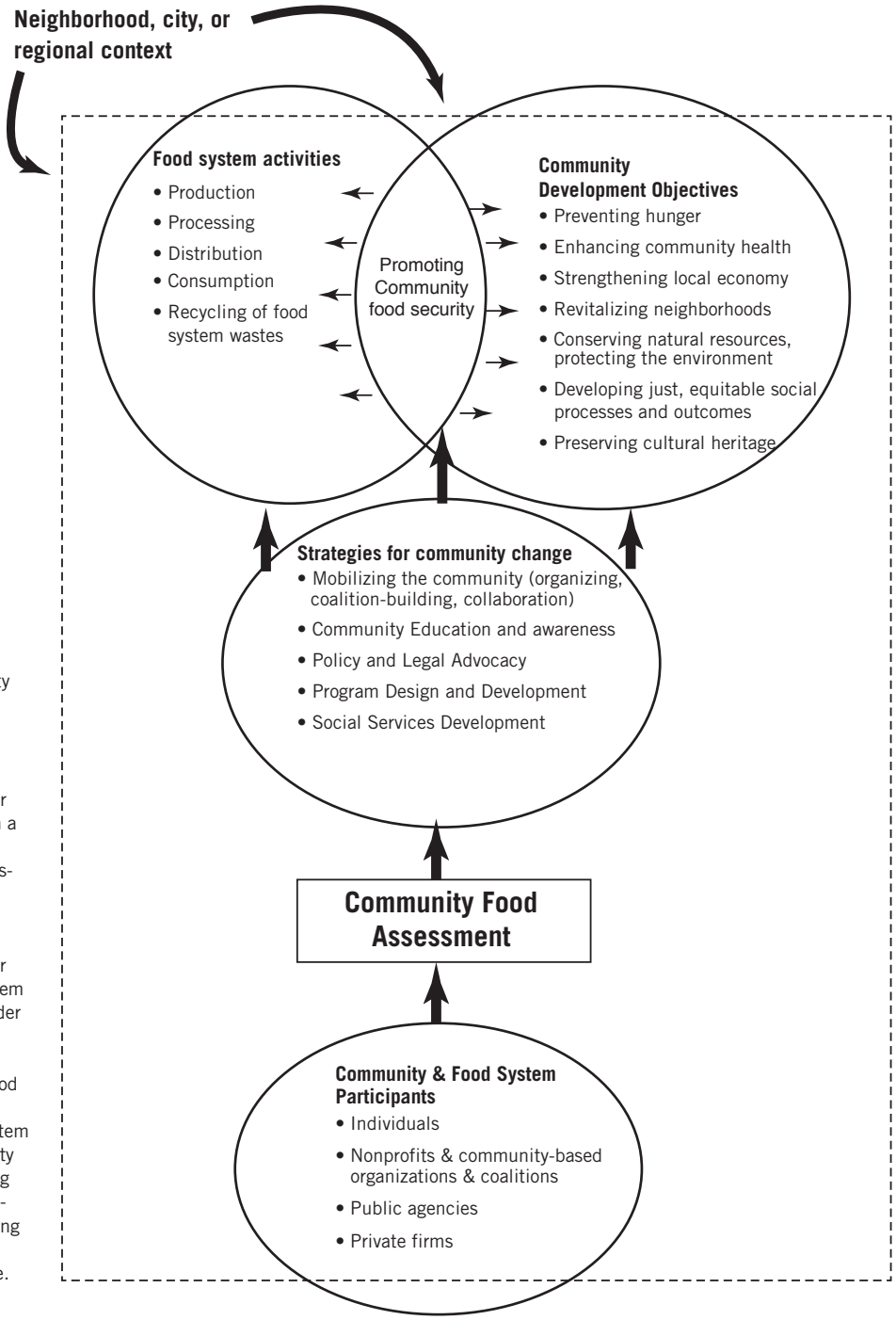


Figure 1. Illustrates the connection between community food security goals and Community Food Assessment. An individual, community organization, public agency, or private sector organization could form a coalition to initiate the Community Food Assessment. Based on the information generated, actions could be developed to affect particular community or food system activities directly, in order to improve community food security. In this diagram, community food security stands at the intersection of food system activities and community goals such as preventing hunger, enhancing community health, conserving natural resources, and promoting social justice.

Source: Pothukuchi et al., 2002.

Figure 2. Stages of Improving Community Food Security

Stage of continuum	Stage 1: Initial food systems change	Stage 2: Food systems in transition	Stage 3: Food systems redesign for sustainability[a]
Strategies and activities	◊ Counsel clients to maximize access to existing programs providing food and nutrition assistance, social services, and job training. ◊ Document the nutritional value of emergency foods. ◊ Identify food quality and price inequities in low-income neighborhoods. ◊ Educate consumers and institutions about the benefits of local, seasonal, and organic foods.	◊ Connect emergency food programs with local urban agriculture projects. ◊ Create multisector partnerships and networks. ◊ Facilitate participatory decision making and policy development through serving on food policy councils and organizing community-mapping processes and multistakeholder workshops.	◊ Advocate for minimum wage increase and more affordable housing. ◊ Advocate for food labeling standards about product history (e.g., place of origin, organic certified, Fair Trade certified[0]). ◊ Through participatory decision making and policy development, mobilize governments and communities to institutionalize: ◊ (1) land use policies that facilitate large-scale urban agriculture; ◊ (2) market promotion and subsidies as a way to increase a community's food self-reliance and achieve nutrition goals; and ◊ (3) tax incentives and financing mechanisms to attract local food businesses to low-income neighborhoods.
Time frame	◊ Short term	◊ Medium term	◊ Long term
Evaluation	◊ Data collection, monitoring, and evaluation are conducted at all stages of the community food security continuum.		

Figure 2. Evidence-based strategies and activities associated with a three-stage community food security continuum. Adapted from a framework originally developed by MacRae (10). [a]Sustainability is defined as society's ability to shape its economic and social systems to maintain both natural resources and human life (12). [b]Fair Trade is an innovative, market-based approach to sustainable development that helps family farmers in developing countries gain direct access to international markets, as well as develop the business capacity necessary to compete in the global marketplace. In the United States, TransFair USA places the "Fair Trade Certified" label on coffee, tea, cocoa, bananas, and other fruits. For more information, see: www.transfairusa.org.

Source: McCullum et al., 2005.

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