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Re-localizing Food Systems to Promote Justice and Build Social-Ecological Resilience: Lessons from Los Angeles County

DISSERTATION

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for the degree of

DOCTOR OF PHILOSOPHY

in Urban and Environmental Planning and Policy

by

Ashley Michelle Hooper

Dissertation Committee:
Professor David L. Feldman, Chair
Professor Scott A. Bollens
Professor Richard Matthew
Assistant Professor Nicola Ulibarri
Associate Professor Steven J. Davis

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DEDICATION

I dedicate this dissertation to my father, Don.
I remember him:
teaching us how to cook the perfect pancakes;
sending us to pick herbs and chives from the garden for dinner;
taking us to forage for piñon nuts in the mountains;
experiencing the world through travel and an adventurous, eagerness to try local cuisines;
making currant jelly and mulberry jam;
making pickles and kimchi and hot sauce;
making duck soup;
making coffee ice cream;
growing giant squash and tomatoes in the garden;
buying a heritage turkey every Thanksgiving;
building a chicken coop for our urban chickens;
walking with me to the farmers' market every weekend;
shucking and grilling corn in the summer;
buying bagels;
getting breakfast on Sundays and pizza on Fridays;
baking bread;
making fresh pasta from scratch.

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CONDENSED CURRICULUM VITAE

Ashley Michelle Hooper

2009	Bachelor of Science in Psychology, University of New Mexico
2012 – 2014	Research Assistant, Bureau of Business and Economic Research, University of New Mexico
2014	Master of Water Resources, University of New Mexico
2014 – 2015	Research Assistant, National Cooperative Highway Research Program (NCHRP) Synthesis Study 20-05 National Academy of Sciences, Technology & Engineering
2014 – 2019	Teaching Assistant, School of Social Ecology University of California, Irvine
2017 – 2018	Pedagogical Fellow, Division for Teaching Excellence and Innovation University of California, Irvine
2018 – 2020	Research Assistant, Mineta Transportation Institute, San Jose State University
2018 – 2020	Instructor of Record/Teaching Associate Environmental Sustainability I & II, Urban & Regional Planning, and Cities & Food, University of California, Irvine
2020	Ph.D. in Urban and Environmental Planning and Policy, University of California, Irvine

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ABSTRACT OF THE DISSERTATION

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Our global food system contributes to climate change, shortages of accessible freshwater supplies, declining biodiversity, deforestation, unsustainable land use practices, and increased risks to human health. Furthermore, our food system is inequitable and unjust, with communities of color, people of lower socio-economic status, and women facing disproportionate burdens of these inequalities. To address these crises and promote social-ecological resilience, scholars and advocates are calling for a re-localization of food systems at the city-level. Without examples to draw from, the concept of a socio-ecologically resilient food system within the urban context is still largely theoretical. To address gaps in our understanding and incorporate the insights of those already working within urban food frameworks and toward changing current food system outcomes, this dissertation explores how resilience is conceptualized by innovative, active food organizations (e.g., food justice advocates, urban farms) within urban contexts and within locally relevant policies/plans. Using Los Angeles County as a case study, textual data were collected and analyzed from selected organizations, in-depth, open-ended interviews with associated program

directors, and planning and policy documents. Results indicate that resilient food systems promote community-level access to food that is sustainably produced, healthful, equitably accessible, and culturally relevant. External constraints for promoting resilient food systems mirror larger systemic risks facing other sectors (i.e., climate change, economic and social inequalities, conflicts over space). Extreme food waste, limited knowledge of food preparation, production and distribution, and onerous or ambiguous regulations are additional barriers. Furthermore, a globalized food economy and environmental challenges threaten the viability of smaller-scale farms. Opportunities for transforming our current food system through urban-led efforts and achieving more resilient food systems include: (i) activating the citizenry to mobilize around food issues; (ii) policymaking and institutionalizing change through multiple strategies (e.g., strategic policy framing), in multiple forms (e.g., formal and informal), and at various levels of governance (e.g., city and state); and (iii) embracing and supporting an integrated, diversified urban food system (e.g., supporting regenerative agriculture, reintegrating agriculture into all urban spaces, bridging small scale food production with community demand). Findings indicate the potential for cities to be instrumental in promoting food system resilience locally and even at the state level, by incorporating justice and equity into urban food policy and planning.

INTRODUCTION

...we need to understand that as a human race we have to figure out how we are all collectively going to raise ourselves up, and to deal with the issues that face us currently globally. One of these issues, one of the most important issues facing us, is how we grow, and how we distribute and engage with food. This is a problem that is central to the ways that we are damaging our environment, and it is a problem that is central to how we are not caring for the next generation that is behind us." Neelam Sherma, Executive Director of Community Services Unlimited

At the time of writing this dissertation, millions of Americans and citizens around the globe are responding to the COVID-19, coronavirus pandemic. This global health emergency not only illustrates the limited adaptive capacity of our healthcare systems and the precarity of our globalized economy, but places dietary health and food access, production, and distribution at the fore of public discourse and experience. Illuminating the food-related health disparities borne of systemic inequality, the virus is particularly deadly for individuals with diet-related diseases (i.e., cardiovascular disease, diabetes, hypertension, and obesity), and these risks disproportionately impact lower-income and communities of color with limited access to healthful food. Mayors and governors across the United States were forced to weigh the benefits of closing schools for social distancing purposes against the detriments of removing access to school lunches for lower-income children, highlighting how many children struggle daily to meet their food needs. Demonstrating the vulnerability and precarity of over-reliance on philanthropy to patch structural deficiencies in food access, food pantries, soup kitchens, and other food assistance programs that rely on food donations and an army of volunteers to prepare and distribute food are struggling to operate. Furthermore, workers in the food industry are finding themselves unemployed (e.g., in the bar and restaurant sector) or working overtime to keep food available for Americans (e.g., in the food production, processing, distribution, and retail sectors).

Many of these workers lack personal protective equipment or safe working conditions and are risking their lives and the lives of their family members for menial wages with inadequate healthcare. At pork, beef, and poultry processing plants across the United States—many fueled by the inexpensive and exploited labor of immigrants and resettled refugees—workers are dying and being infected at alarming rates. In response to similar conditions, workers at fast food restaurants (e.g., McDonalds), corporate grocery store chains (e.g., Whole Foods), meat processing plants (e.g., Perdue Farms), distribution centers (e.g., Amazon), and grocery delivery companies (e.g., Instacart) are holding strikes and 'sick outs' demanding adequate safety measures and higher pay. Furthermore, while government officials recommend stocking up on food supplies to weather the virus in isolation, lower-income seniors on fixed incomes and lower-income families with limited budgets cannot afford to allocate more to surplus food – they already struggle to feed themselves and their families. As a result of panic buying and stocking up on non-perishables, many Americans are arriving at grocery stores to find empty shelves where eggs, milk, bread, meat, and grains are typically stocked. Freezers that ordinarily display an abundance of prepackaged, highly processed, and frozen meals are bare. At the same time that so many are going hungry and losing their jobs, due to the inability to sell fresh produce (the majority of which is consumed at restaurants) and to the suspended operations at industrial meat processing plants, industrial farmers from Wisconsin, to Ohio, to Florida are dumping thousands of gallons of fresh milk, euthanizing millions of animals, smashing millions of eggs, and plowing and burying millions of pounds of vegetables back into the ground.

Statement of the problem

Staring into the empty shelves of a grocery store during a pandemic forces us to question not only where our food ultimately comes from, but how many individuals along the production and distribution chain are involved in the process of getting our food from farm to fork. Furthermore, we are reminded of how the wellbeing and health of these invisible actors are greatly connected to our own. Yet while the coronavirus pandemic has magnified a number of these issues, the global 'food system' in its the entirety—all of the processes, practices, resources, and infrastructure needed to grow, harvest, process, package, transport, market, consume, and dispose of food and food-related items—has long been in itself an increasingly dire social-environmental crisis.

While allowing for an abundance of inexpensive food and production yields in step with per capita population growth (Gowdy & Baveye, 2019), our globalized food system comes at a series of social and environmental costs. Our global food system currently drives a variety of environmental and climate changes (e.g., climate change, shortages of accessible freshwater supplies, declining biodiversity, deforestation, unsustainable land use practices) (Steffen et al., 2015; Ritchie & Roser, 2020; Rosenzweig et al., 2020; Mbow et al., 2019; Shannon et al., 2015), and at the same time, these changes are expected to significantly impact the ability to produce food in the coming decades (Mbow et al., 2019; Jia et al., 2019; Shannon et al., 2015). In addition, deficiencies in diet and food access as well as national and international food safety incidents increase prevalence of dietary disease and risks to human health (Afshin et al., 2019; Springmann et al., 2016; McDonald, 2010; Shannon et al., 2015). Furthermore, within our global food system, access and labor conditions are largely inequitable and unjust, with communities of color, people

of lower socio-economic status, and women facing disproportionate burdens of these inequalities (e.g., higher rates of food insecurity, unsafe work conditions and wage theft, higher rates of diet-related disease) (D'Odorico et al., 2019; Afshin et al., 2019). In short, the predominant ways in which we produce and distribute food contribute to social-ecological outcomes that are environmentally unsustainable, unhealthful, and inherently unjust (Shannon et al., 2015).

Climate change and greenhouse gas emissions. The global food system (i.e., the production, transport, packaging, storage, retail, consumption, loss, and waste of food) accounts for 25 to 30 percent of global greenhouse gas emissions (Mbow et al., 2019), according to the latest estimate by the Intergovernmental Panel on Climate Change (IPCC). Other calculations support this range, with Poore and Nemecek (2018) estimating emissions from the food sector as accounting for 26 percent of global emissions. Within the share of emissions from the food sector, livestock and fisheries account for 31 percent of emissions (due to on farm production emissions, such as methane emissions from cattle produced through enteric fermentation processes, manure and pasture management, and fuel consumption). Crop production emissions contribute 27 percent of food-related emissions; 21 percent of these emissions stem from crop production for direct human consumption while six percent can be attributed to crops for animal feed. Global land use devoted to agriculture accounts for 24 percent of all food related emissions, with 16 percent of these emissions related to land used for livestock production (e.g., conversion of forests, grasslands, or other carbon sinks into croplands or pasture) with the remaining eight percent of emissions relating to cropland for foods intended for direct human consumption. Finally, supply chains related to the food system account for the remaining 18 percent of food-

related emissions; of these, six percent are attributed to transport-related emissions, followed by five percent for packaging, four percent for processing, and three percent from retail.

Food waste from food production accounts for one-quarter of emissions (3.3 billion tonnes of CO2eq), where food is wasted either from supply chain losses or by consumers (Mbow et al., 2019). Emissions are expected to increase as global populations and demands for animal-based foods increase (Mbow et al., 2019; Poore & Nemecek, 2018).The IPCC estimates that without intervention in our food production and consumption practices, food system emissions are likely to increase by about 30 to 40 percent by 2050, due to increasing demand based on population and income growth and dietary change (i.e., greater consumption of animal based foods) (Mbow et al., 2019).

Water use and degradation. The food system accounts for 70 percent of global freshwater withdrawals (FAO, 2011). Furthermore, 78 percent of global freshwater and ocean eutrophication (i.e., pollution of water due to excess nutrients, such as nitrogen and phosphorus) are due to agricultural practices (Poore & Nemecek, 2018). Eutrophication causes algal blooms which deprive oxygen for aquatic life. A key contributor is return flows from agriculture production systems (crop and landscape fertilizers), which produce high concentrations of nitrate and phosphorous which runoff into waterways. This phenomenon is aggravated by wastewater treatment plant discharges from cities, which increase phosphorus and nitrogen loads. Impacts from eutrophication may soon exceed the environmental limits within which humanity can safely operate (Steffen et al. 2015; Lal 2004).

Land use. Our food production practices have vastly transformed the landscape of the world, with approximately half of all habitable land being used for agriculture (Ellis et al., 2010).

The majority of this land is devoted to the production of livestock (meat and dairy); if combining pastureland used for grazing livestock and cropland land used for growing animal feed, livestock accounts for 77 percent of global farmland (Poore & Nemecek, 2018). Furthermore, while livestock only accounts for 18 percent of the global calories and 37 percent of protein, despite requiring the large majority of available cropland for production (Poore & Nemecek, 2018). Land can be both a source of carbon emissions and a carbon sink, depending on management. However, expansion in agriculture coupled with unstainable land use management practices, have contributed to increasing net greenhouse gas emissions, loss of natural ecosystems which act as carbon sinks (e.g., forests, savannahs, natural grasslands, and wetlands), and continued declines in biodiversity (Jia et al., 2019)

Biodiversity loss. Expansion of agriculture and the resulting land transformations (e.g., deforestation) has transformed habitats and threatened biodiversity. Excluding human beings, 94 percent of mammal biomass is livestock, meaning that livestock out number wild mammals by 15-to-1 (Bar-On et al., 2018). Of the 28,000 species evaluated as threatened with extinction by the International Union for Conservation of Nature (IUCN) Red List, agriculture is listed as a primary threat for 24,000 of them (86 percent) (Ritchie & Rosener, 2020). Livestock farming, in particular, represents a major threat to global biodiversity and the healthy functioning of ecosystems (Allen & Hof, 2019).

Dietary disease and mortality. Afshin et al. (2019) found that across 195 countries, 11 million deaths and 225 million disability-adjusted life-years were attributable to dietary risk factors in the year 2017. The leading risk factors included high intake of sodium, low intake of whole grains, and low intake of fruit. Improvement of diet could potentially prevent one in five

deaths globally (Afshin et al., 2019). Globally, the prevalence of obesity is increasing; there are now more obese adults globally than underweight adults (Ng et al., 2014; Abarca-Gómez et al., 2017). In 2016, an estimate two billion adults are overweight, with 678 million suffering from obesity (Abarca-Gómez et al., 2017). For American adults, prevalence of obesity and extreme obesity have increased to 42.4 percent and 9.2 percent, respectively (Hales et al., 2020). Obesity and obesity-related conditions such as heart disease, stroke, Type II diabetes, and certain types of cancer are on the rise, costing lives and over 147 billion USD annually (Finkelstein et al., 2009; Strum & Hattori, 2013).

Environmental and social Justice. Individuals, particularly lower-income, people of color, and women, have unequal access to food; these inequalities in access undermine the ability for these individuals to play an active and full part in the ability to function within their community (Alamgir & Cairns, 2015; Elmes, 2018). Hunger results in long-term impacts on human wellbeing and development, attention and cognition, ethical decision-making, and even influences risk-taking behavior (Elmes, 2018, Bapuji, 2015). Furthermore, those with inadequate access to healthful foods are at higher risk of chronic, dietary disease (e.g., diabetes, cardiovascular disease, hypertension), stroke, cancer, and even death (Afshin et al., 2019); these health conditions limit the ability for individuals to participate fully in the economy (due to potential disability, chronic illness, or physical limitations) and may inhibit the capacity for living a full, happy life (Elmes, 2018). As such, inequitable access to healthy foods is not only unjust, but the consequences of hunger and unhealthy food consumption have deepened and strengthened economic inequality (Elmes, 2018).

Conceptual framework and rationale

Predominant research and policy approaches. Despite the highly complex social-ecological relationships nested within food systems, food-related policy has largely focused on increasing agricultural production and directing food aid and assistance for those unable to fully participate in the market. This first policy approach emphasizes increasing supply and focuses primarily on maximizing quantity of agricultural yields and calories; however, this approach continues to fail to account for the quality of food and the nutrient density of calories that are being produced, the social and environmental detriments borne of large-scale, monoculture food production, and the perpetual inability to address issues of hunger despite continuing to produce greater and greater supplies of food (Shannon et al., 2015; Rosin et al., 2013; Holt-Giménez, 2017). Furthermore, this approach does not account for the egregious volumes of food waste that occur along the food production and distribution chains (approximately one-third of all food produced for human consumption) (Mbow et al., 2019), nor does this approach address the rising prevalence of diet-related disease associated with poor dietary practices and inequitable food access (Afshin et al., 2019; Clapp & Cohen, 2009; Gustavsson et al., 2011). While benefitting monopolistic, corporate food producers and global trade organizations, this supply-based approach presents a series of negative social and ecological externalities (Shannon et al., 2015; Clapp & Cohen, 2009; Clapp, 2016) and needs to be revaluated (Ericksen, 2008a; Ericksen, 2008b; Rosin et al., 2013; Shannon et al., 2015). This second approach of increasing food aid has also been insufficient in addressing the social crises of lower-income and impoverished communities not having consistent and reliable access to nutrient-dense, culturally relevant, and healthful foods (National Research Council, 2013; Mahoney, 2015; Elmes, 2018). Furthermore,

these food assistance approaches place the emphasis of food access at the individual and household level, which directs policy and research attention at individual responsibility as opposed to systemic failure (Elmes, 2018; D'odorico et al., 2019).

Emerging research and policy approaches. In response to predominant approaches, scholars, practitioners, and food justice advocates are calling for systemic shifts in food policies, to effectively promote more inclusive, sustainable, and equitable food systems (Shannon et al., 2015; Guinn & Hamrick, 2015; Elmes, 2018). With global populations becoming more urbanized, cities are being considered a more appropriate scale for reconfiguring the food system, and city-led food initiatives are gaining traction (Ilieva, 2016). Beyond the potential for improving local outcomes, urban-led initiatives offer opportunities for experimentation and innovation, and ultimately, the reconfiguration of responses at higher level of governance (Broto, 2017).

Led by local food security activists and grassroots, food system innovators, local government leaders, legislators, urban planners, architects, political scientists, and others are increasingly bringing food into the urban policy agenda in cities across the Global North and testing possibilities for more sustainable food systems at the localized level (Ilieva, 2016). From Vancouver to Amsterdam and from London to Los Angeles, municipal leaders have been developing local food systems strategies in planning and policy documents; more than 90 of these urban food system innovations were released during 2001 to 2015 (Ilieva, 2016). These include stand-alone food system plans (e.g., London Food Strategy [2006], Proeftuin [Testing Ground] Amsterdam [2007], New York FoodWorks [2010], Seattle Food Action Plan [2010]), comprehensive urban plans that address food systems (e.g., The London Plan [2011], The Portland Plan [2012], the Toronto Official Plan [2015]), and thematic food sections within long-

term sustainable development plans (e.g., Baltimore Sustainability Plan 2015, Greenest City Vancouver 2020, PlaNYC 2030, Chicago GO TO 2040, Philadelphia 2035) (Ilieva, 2016). A further testament to the growing movement in urban food planning and policy within the last two decades, over the same time frame, the number of food policy councils in North American cities increased from less than a dozen to over 280 (Ilieva, 2016).

Despite more recent efforts to foster a food-related discourse in urban planning and policy (e.g., conceptual frameworks of urban food planning, community and regional food systems planning, and sustainable food planning), addressing food systems through formal urban planning and policy efforts are still relatively nascent and in a phase of evolution (Ilieva, 2016). At this developmental stage in urban food planning and policy, it is important to create a discourse that accounts for food in comprehensive ways that fully acknowledge the social, cultural, and environmental factors of food systems (e.g., social cohesion, physical and mental health, food literacy, and biodiversity) rather than limit the focus to supplying cities with food (Siegner et al., 2020; Ilieva, 2016). Furthermore, it is imperative to be innovative and open-minded in our thinking about food within urban and localized contexts (e.g., consider how growing food in urban spaces complements residential life) and with an equity lens (e.g., consider access for disadvantaged communities as well as gentrification concerns) (Ilieva, 2016; Siegner et al., 2020; Horst et al. 2017; McClintock et al., 2018; Sbicca, 2019).

Resilience paradigm. In helping to identify these opportunities, the resilience paradigm (which accounts for social and environmental components and opportunities for innovation and adaptation) has enormous potential as an analytical tool in identifying how to help a build food system that promotes greater food security and contributes to goals of environmental

sustainability (Vieira et al., 2018; Naylor, 2009; Prosperi et al., 2014, Tendall, 2015). Within the resilience framework, systems are evaluated in terms of vulnerability (i.e., how susceptible a social-ecological system is to harm due to environmental or social change; perturbation, shocks, or stress; and/or limited capacities to adapt to change), adaptive capacity (i.e., how capable a social ecological system is in anticipating, learning from, and managing changes; responding to perturbations, shocks or stress; and/or returning to a functional state), and transformation (i.e., how can a social-ecological system transform conditions/systems that limit adaptive capacity or increase vulnerability) (Berkes & Folke, 1998).

A shift toward more a more socially and ecologically resilient food system requires rethinking existing models of globalized food networks and reevaluating processes that created our current food system (Gunilla & Olsson, 2018; Toth et al., 2014). Yet while social-ecological resilience offers enormous potential as a tool in this process of reconfiguration, the paradigm has largely grown in insolation from the critical social science literature, especially in terms of addressing the social aspects of environmental change (Berkes & Ross, 2013; Boonstra, 2016). In particular, social-ecological resilience literature misses key considerations and evaluations of social diversity and disparities in power (Fabinyi et al., 2014). Instead, resilience of social components within social-ecological systems are commonly evaluated and discussed in terms of organized social units (e.g., agencies, committees, communities, institutions) rather than in terms of human agency and political and cultural relationships (Fabinyi et al., 2014).

Ecofeminism. While a variety of theoretical frameworks can fill this void (e.g., analyses found in anthropology or political ecology), ecofeminism captures the highly gendered components of food in addition to providing a lens in power, an emphasis on diversity, and a

connection to environmental and social justice. Throughout history, food production and distribution systems have been organized along gendered lines, with women predominantly continuing to carry the responsibility (both in terms of mental and manual labor) of food provision (Allen & Sachs, 2012). Yet while women perform the majority of food-related work, women control few of the resources within food systems and hold little power in managing the food industry and little influence in decision-making processes within food policy (Allen & Sachs, 2012). Furthermore, despite bearing the responsibility for ensuing that others are nourished, women and other marginalized groups are often are not able to adequately nourish themselves (Allen & Sachs, 2012). Ecofeminism helps us in better understanding these longstanding contradictions within the globalized food system, by providing both a lens of power for examining gendered components of social-ecological systems and by providing a complementary framework for conceiving of resilient food principles (e.g., biodiversity of plant-species, locally supported agriculture, and nonexploitative labor practices) (Gaard, 2017; Shiva, 2009).

Gaps in knowledge. Yet while recent scholarship helps to operationalize and/or define resilient urban food systems (Sonnino, 2014; Elmes, 2018; Vieria et al., 2018), no comprehensive analysis has yet evaluated how resilient food systems are conceptualized by innovative, active organizations working to improve food systems within urban contexts and according to locally-relevant policies and plans. The perspectives of these organizations seeking to address growing issues of inequality, food insecurity, sustainability, and health (e.g., food justice advocates, urban farms, food cooperatives) are important: these organizations emphasize social innovations within the food system, such as promoting economic transactions rooted in building and maintaining human relationships and values rather than price or personal monetary gain (Elmes,

2018). If we are to look to innovative, transformative opportunities, we should be incorporating the insights of those already working within urban food frameworks and toward changing current food system outcomes.

Furthermore, alternative food movements seeking to address the social and ecological harms of the globalized food system have been growing in localized contexts; however, efforts in scaling these movements up may be hampered by broader structural forces operating within the global food system. For this reason, studies examining the broader, globalized practices as well as local initiatives are important in determining a comprehensive picture of the food system (Clapp, 2016). Numerous scholars have expanded our understanding of the political and economic forces shaping the global food system and have helped to contextualize local food outcomes; however, comprehensive examinations considering social and environmental aspects of localized and urban efforts have been more limited (Clapp, 2016). Additionally, existing scholarship outlines the need for transforming food systems (Elmes, 2018; Rosin et al., 2013); however, there is limited research bounding these transformations within urban contexts and identifying potential opportunities for enacting these radical changes.

Research Objectives

To fill these gaps in knowledge, the purpose of this dissertation is to determine how key actors and innovative food organizations actively engaged within food systems are reconceptualizing food systems to promote social-ecological resilience in urban contexts and how these goals are currently being promoted through organization programs and addressed/implemented through policies and plans relevant to urban food outcomes and processes. Furthermore, to improve our understanding of the challenges in promoting food

system resilience within urban contexts, this dissertation seeks to identify impediments, both in terms of existing constraints and risks anticipated for the future. Finally, this dissertation identifies opportunities for transforming urban food systems through innovations and actions that address environmental sustainability, human health and wellbeing, and social and environmental justice.

Research Questions

In pursuit of these research objectives, this dissertation seeks to answer the following research questions:

1. How is 'resilience' currently conceptualized by key actors engaged in innovative food organizations and addressed through local food policies/ programs?
2. What are the current impediments and anticipated risks to promoting resilient food systems?
3. What are the opportunities for radically transforming urban food systems?

Research Approach and Methods

Because we do not currently have exemplars of resilient food systems within the urban context, a case study design was employed to explore these research questions. Los Angeles County was selected as a paradigmatic case study site, due to its characteristics reflective of broader phenomenon previously identified as potentially challenging and supporting transformation within food systems. Los Angeles County is emblematic of features posing tremendous opportunity for achieving social-ecological resilience through food and within urban contexts, such as strong local food economies and regional food production (Vieira et al., 2018), city-level governance promoting narratives of global change (Sonnino, 2014), and a strong and

active presence of alternative food movements (Scrinis, 2007). However, Los Angeles County also exemplifies characteristics posing tremendous challenges: cultural and ethnic diversity and a diversity of food needs (Guthman, 2008); extreme environmental challenges and climate change impacts (Bedsworth et al., 2018); extreme pressures in developing urban space and conflicting priorities for land use (Siegner at el., 2018), and issues of poverty, social and economic inequality, food access, and dietary-caused disease (Afshin et al., 2019; Siegner at el., 2018; D'Oderico et al., 2019; Elmes, 2018; Gotttlieb & Joshi, 2010).

Using adaptations of snowball sampling techniques, 23 innovative organizations that seek to promote more resilient food systems (e.g., food justice advocates, food recovery programs, innovative food producers) operating in Los Angeles County were selected for data collection and analysis. For each organization, textual information (e.g., program descriptions, internal reports, and website content) was collected; additionally, 12 open-ended interviews with associated organization directors were conducted. Finally, planning and policy documents that are relevant to organizations active in the Los Angeles County food system and that outline a vision for the future goals of Los Angeles City and County were selected for analysis.

Content analysis was used to analyze the textual content pulled from three all different data sources (organization website content, interview transcripts, and planning/policy documents). Data were analyzed through focused coding followed by open coding and then ultimately organized into categorical themes, using triangulation of data. These themes are presented in the empirical chapters of this dissertation (Chapters, 5, 6, and 7).

Summary of Findings and Contributions

The results of this dissertation indicate that resilient food systems promote community-level access to food that is sustainably-produced (e.g., without chemical fertilizers or pesticides, through water-saving and climate sensitive approaches, and/or locally), healthful (e.g., fruits and vegetables), equitable (e.g., geographically and economically available), and culturally relevant (i.e., appropriate to the traditional or cultural diets of community members).

Social impediments/risks to promoting resilient food systems mirror larger systemic risks facing other sectors. Increasing competition over urban land use threatens the viability of urban agriculture (e.g., urban farms, community gardens, and residential gardens) and limits potential for greater food access. Current practices encourage routine and extreme food waste in a variety of venues (e.g., wholesale markets, farmers' markets, grocery stores). Historic and current economic and social inequalities exacerbate inequitable access to food, as lower-income and historically marginalized neighborhoods lack geographic and/or economic access to healthy, culturally relevant, and sustainable foods. Perpetuation of misinformation (e.g., advertising or urban food myths) makes limiting food waste and providing nutrition education more difficult; furthermore, limited knowledge in food preparation and production add to challenges in encouraging healthier eating. Another impediment lies in constraining funding structures for urban food organizations; relying on grant funding limits flexibility to act innovatively and to address specific community needs, incentivizing projects less related to broader mission goals in order to retain staff, and/or encouraging reliance on volunteer work and unpaid labor to carry out programs. As another challenge to urban food system resilience, onerous, costly, and/or prohibitive regulations (e.g., organic certification process) diminish access to higher quality,

sustainability produced foods by placing additional burdens on producers. Additionally, smaller-scale farmers are struggling economically in a globalized food economy and in the face of environmental challenges. Finally, environmental factors limiting resilience are expected to worsen in conditions of climate change and primarily relate to environmental risks facing California (e.g., wildfires, drought).

Interviews, organizations, and locally-relevant policies and plans revealed three key themes for transforming our current food system and achieving more radical, resilient food systems. These strategies include activating the citizenry by expanding and improving civic mobilization and education and by empowering more vulnerable populations (e.g., youth, women, people of color); policymaking and institutionalizing change through multiple strategies (e.g., strategic policy framing), in multiple forms (e.g., formal and informal), and at various levels of governance (e.g., city and state); and embracing and supporting an integrated, diversified urban food system (e.g., supporting regenerative agriculture, reintegrating agriculture into all urban spaces, bridging small scale food production with community demand, and promoting environmental stewardship and regenerative agriculture).

Contributions of findings

Without current examples to draw from, the concept of a resilient food system is still largely theoretical, and research accounting for resilience comprehensively (i.e., in terms of environmental sustainability and social equity) is still relatively nascent (Viera et al., 2018). These findings provide a theoretical and comprehensive understanding of food system resilience grounded by the practices and perceptions of innovative, active food organizations in a Global City, thus refining these characteristics for future research and analysis. Furthermore, these

findings suggest that while local organizations can identify problems with food systems and opportunities for transformation, with limited resources (e.g., staff, funding) organizations are not equipped to address structural challenges (e.g., rising income inequality, global climate change) and many are struggling to meet the immediate food needs their communities. To promote greater food system resilience in urban contexts, municipalities must significantly invest in and prioritize food initiatives and work to integrate food systems into the urban fabric through municipal plans and policies and support for local initiatives through adequate funding, resources, and/or political support and with an equity lens. A just, sustainable food system requires structural change at higher levels of governance in addition to providing adequate resources and flexibility to locally led initiatives. However, the findings within this dissertation demonstrate that innovative, active organizations within cities can be instrumental in changing some of the impediments to resilience at the state level and be creative in addressing counterproductive policies at the federal level.

Chapter overview

The following section gives a description of the content contained in each subsequent dissertation chapter.

Chapter 1. Background and statement of the problem. This initial chapter provides a research context, by summarizing existing problems associated with food systems (e.g., environmental degradation, dietary disease, and inequitable access). In addition, this chapter summarizes the calls for making food systems more resilient and for examining food systems through an urban lens. Furthermore, this chapter summarizes gaps in our current understanding of food system resilience, provides a rationale for how this dissertation research addresses these

gaps, and presents the research questions posed in pursuit of these research objectives. In addition, this chapter discusses the research methods employed in this dissertation, presents a summary of findings, and offers a brief discussion of the implications of findings. Finally, this chapter provides an over of each dissertation chapter.

Chapter 2. Political economy of global food regimes. This second chapter provides a focused historical review of three predominant 'food regimes.' The first regime discussed begins with the industrialization of Europe (1870s – 1930s). The second regime characterizes a transition of food aid from the Global North to the South and the global spread of industrial agriculture (1950s – 1970s). Finally, the third regime marks a period with increases in globalized, neoliberal food-related trade policies, a shift in unprecedented market powers and profits of monopoly agri-food corporations, and an increase in global meat consumption (1980s to present).

Chapter 3. Conceptual and theoretical frames guiding this research. This second chapter provides a review of the literature pertaining to the conceptual and theoretical frameworks used to guide this dissertation research: urban resilience and ecofeminism. Each theoretical orientation is discussed in the context of urban food systems; additionally, theory limitations are presented along with a rationale for using both theories in complementarity. This chapter concludes with an explanation of how these frames are used in data collection and analysis.

Chapter 4. Case study selection and research methodology. This third chapter provides a rationale for selecting a case study design for pursuing the research questions posed in this dissertation. Site selection, sampling strategies, and data collection methods are discussed. Content analysis procedures are explained. This chapter concludes with an overview of how measures were taken to bolster the validity of findings as well as a presentation of the study

limitations.

Chapter 5. Empirical findings: defining resilience and identifying current policy/program approaches. This chapter discusses the findings addressing the first research question: How is 'resilience' currently conceptualized by key actors engaged in innovative food organizations and addressed through local food policies/ programs?

Chapter 6. Empirical findings: barriers to resilience. This chapter discusses the findings for the second research question: What are the current impediments and anticipated risks to promoting resilient food systems?

Chapter 7. Empirical findings: building resilience through radical food systems. This chapter presents the findings in response to the third research question: What are the opportunities for radically transforming urban food systems?

Chapter 8. Discussion and conclusion. This final chapter discusses the significance of our findings and suggestions for future research.

2. POLITICAL ECONOMY OF GLOBAL FOOD REGIMES

"It is a problem. That's another thing. That's another food system problem. I mean, it's probably done because a lot of people are like, "Well, why do grocery stores try to offload their eggs after three days?" Because it's a capitalist society, right? They want to make money. The people are having all these eggs, they need to sell them, they need to move their inventory. The same with any other product in the grocery store. Part of it is just that, it's a commercial thing. If they said, "Eggs can sit there for two weeks," then they wouldn't make as much money and et cetera." - Interviewee

The history of food production and distribution is highly varied, complex, and divergent and admittedly deserves more time and attention than provided within this section. There are numerous cultural, social, economic, environmental, traditional, and experiential histories of food that collectively give a more comprehensive and less Western perspective of how the global food system came to be (for example, see Pilcher, 2017). However, this following section serves to summarize three predominant 'food regimes' that characterize the historical, linear demarcations of the modernization of agriculture (i.e., the pivotal roles of food in shaping our global political-economy and in spurring key historical trajectories) (McMichael, 2009).

Outlining a historical food trajectory through food regimes serves several key analytical functions. First, characteristics of the capitalist food system (and capitalism) and associated neoliberal policies (e.g., emphasis of supply over quality, widespread use of pesticides/herbicides for proprietary genetically-modified seeds, inadequate labor and environmental protections, continued hunger due to inability to purchase food) are largely critiqued in scholarship examining the need for reform of the existing food system (Rosin et al., 2013). It is thus instructive to understand the genesis of the industrial, capitalist food production approaches and related development paradigms that predominate; these inform reactionary, alternative food movements and responses (which are explored within the urban context for this dissertation).

Furthermore, while it is true that globalized industrialized agriculture and technology have allowed for production of abundant, inexpensive food at high yields steady with per capita population growth (Gowdy & Baveye, 2019), these benefits are borne of various negative social and environmental externalities (e.g., climate change, malnutrition, soil loss) (McMichael, 2009; Patel, 2012) not captured within the market. By strategically organizing the history of food within regimes centered around capital, we can evaluate the practical and paradigmatic emergence of the agro-industrial food system model against the emerging alternative, agro-ecological practices (McMichael, 2009). Second, as Rosin et al. (2013) highlight, tracing the historical shifts and transformations within our food system lends credence to the notion that future transformations are possible. Food regimes mark periods of crisis, transformation, and transition (Friedmann, 1987; Friedmann & McMichael, 1989; McMichael, 2009), and as such, are helpful in providing context for this dissertation and the conceptual frames used in analysis (resilience and ecofeminism).

In summary, while lacking in a comprehensive accounting of the divergent forms of agriculture and cuisines historically and globally and in the context of colonization and globalization, the food regimes lens provides a focused review of the role of food in the accumulation of capital across space and time, in both stable and transitional periods, and of patterns of food circulation within the global economy (McMichael, 2009). As discussed below, the first regime (1870s – 1930s) begins with the industrialization of Europe; the second regime (1950s – 1970s) marks a flow of food aid from the Global North to the South and the global spread of industrial agriculture; and the third regime (1980s to present) represents a period of globalized

neoliberal food trade, unprecedented market powers and profits of monopoly agrifood corporations, and an increase in global meat consumption (McMichael, 2009).

Political Economy of the Current Food System

First global food regime (1870s—1930s). Even though globalization of food (through trade and conquest) had been happening well before this era—the voyage of Columbus in 1492 in search of a western passage to the Spice Islands initiated the fundamental transformation of global cuisine and endemic agrobiodiversity (Pilcher, 2017)—the commodification and marketization of food began to emerge before the Industrial Revolution in the British Isles (McMichael, 2009). During this time, common land that had been accessible to peasant communities for food cultivation, grazing, and gathering were increasingly being fenced off and set aside for large landowners, resulting in peasant riots and uprisings. Tensions ultimately heightened under the Enclosure Acts of the 18th and 19th centuries, which essentially abolished the open field system of agriculture (Sharman, 1989). Ownership of and rights over land (belonging to the commons, Lords, and villagers) were seized and then reallocated in order to increase the efficiency of farming, to increase the agricultural productivity of land, and ultimately, to increase profits (Sharman, 1989). Prior to the Acts, transportation options were limited, methods of farming were fairly uniform and accessible (i.e., highly specialized expertise or skills were not needed), and villages were largely self-sufficient (Sharman, 1989). However, advances in transportation (e.g., expansion of roads, improvements of carts and carriages, greater use and ease of river navigation), advances in agricultural specialization and knowledge (e.g., use of fertilizers), and growing populations within villages (with greater demand for agricultural

produce) created conditions and incentives for revolutionizing agriculture (Sharman, 1989). With transportation infrastructure expanding and a growing urban population to feed, the British government capitalized on an opportunity to seize the land and promote greater crop efficiency and productivity. While perhaps well intentioned (whether Parliament acted proactively to restructure property in order to feed growing populations or used social pressures to exploit the impoverished and consolidate wealth remains a point of debate) (Sharman, 1989; Bogart & Richardson, 2011), under the Acts, British parliament abolished the common land that had been accessible to peasants and fundamentally changed agricultural practices which had previously allowed small villages to be self-sufficient (Holt-Giménez, 2017).

This confluence of the reconfiguration of agricultural land, changes in transportation, and growing urban populations drove a variety of societal changes. Importantly, a reorganization of land and change in food production practices allowed for farms to become larger and more concentrated and adopt farming systems of the 'agricultural revolution' (e.g., large scale cultivation of turnips and clover in rotation with cereal crops, greater and more specialized animal husbandry and utilization of manure fertilizer) (Williamson, 2000). Furthermore, in addition to these changes in practices, technological changes marked the beginning of industrialized agriculture. Farmers began to use horse-drawn drills and reapers and would later use steam-driven threshers (Rasmussen, 1962); this dramatically reduced the number of people needed to work land (Steel, 2013). Furthermore, adoption of the use of bat guano, later followed by various industrial byproducts (e.g., lime-rich slag from steel production), allowed the manufacture of artificial fertilizers that could double yields (Rasmussen, 1962; Steel, 2013). Ultimately, a combination of dispossession of land and diminished labor needs due to industrial

agriculture, influenced a migration of displaced peasants to urban areas (ultimately providing an inexpensive and expendable labor force for the Industrial Revolution). Others stayed in the rural areas to work as laborers and tenant farmers for larger industrial farms (Holt-Giménez, 2017; Steel, 2013).

This consolidation of land ownership and concentration of power in agriculture began to influence food policy and trade, and as a result, the lives of urban residents. After dominating the market, larger producers were able to secure their profits by influencing the passage of the Corn Laws Act in 1815 (which placed a large tariff on imported cereal grains, such as wheat, oats, and barley). Under the Act, grains could be imported and warehoused at any time; however, imported grains could not be sold until the domestic market prices rose to a specified price/tariff schedule (Williamson, 1990). This kept local food prices high and favored large landowners. Factory owners opposed these tariffs, as they had to pay their workers based on the price of food; in response, emerging industrialists ensured to pay a worker enough to "buy his crust and no more" (Holt-Giménez, 2017). Ultimately, these low wages and high food costs reduced the disposable income of the British workers (Williamson, 1990). After widespread hunger in 1845 (which preceded the Great Hunger of the Irish Famine of 1846) the Corn Laws and tariffs on imported grains were removed, and food production began to become increasingly intertwined with international markets (McMichael, 2009).

Entering the first global food regime. As Western Europe industrialized, the region continued to rely on wheat imported from North America and Ukraine (Dobado-González et al., 2012) and food and raw materials imported from tropical colonies (McMichael, 2009). This shift in production practices had a profound impact on the food systems within the imperial empires

and their related colonies. First, imports from tropical colonies to Europe and grains and livestock imports from settler colonies to Britain (produced largely by slave labor) supported the industrialization of the European economy and workforce (McMichael, 2009). Instead of solely relying on local food production to support a growing population, British and Europeans could adopt diets incorporating imported foods from other regions (e.g., sugar and tea) (Pilcher, 2017; McMichael, 2009; Holt-Giménez, 2017). Second, colonists imposed their mono-culture food production on their colonies of occupation, which required the continued transformation of agricultural landscapes in Asia and the Americas and the labor of slaves (McMichael, 2009; Holt-Giménez, 2017; Steel, 2013; Pilcher, 2017). Doing so weakened and changed food systems and the balance of power in trade relations, by compromising ecological resources and agricultural landscapes (Pilcher, 2017; McMichael, 2009). A system of locally diversified food production (e.g., cultivating thousands of genetic varieties of tubers, maize, and rice) shifted to a reliance on a handful of genetic varieties for large-scale production and export (Holt-Giménez, 2017; Pilcher, 2017). In turn, this globalized agriculture regime began to transform the traditional, staple diets of cultures within colonial territories (Pilcher, 2017).

Nineteenth century Britain established a precedent in over-exploiting the fertile soils and the forced labor of the New World, through outsourcing its staple food production (McMichael, 2009). This precedent crystalized when nationalized agricultural sectors within settler colonies (i.e., United States of America, Canada, and Australia), "modeled twentieth-century 'development' as an articulated dynamic between agricultural and industrial sectors" (McMichael, 2009, p. 141). This pattern of urbanization and industrialization of agriculture became entrenched across the globe and created a situation where countries became dependent

on outsourcing agricultural activity to other regions (McMichael, 2009; Pilcher, 2017). Under this structure of mercantile capitalism, colonizers enforced tilted trade negotiations, subsidized exports, kept wages low for laborers, supported the labor of slaves, and prohibited colonies from industrializing (Pilcher, 2017; Holt-Giménez, 2017).

It is important to note that not all local and regional food system were controlled under this regime, and many people still grew and traded food as they had done historically (unless exporting global commodities, such as sugar, coffee, wheat, rice, and maize) (Pilcher, 2017; Holt-Giménez, 2017). However, this first global food regime was expansive and had successfully "consolidated a powerful set of institutions and rules that influenced food production, processing, and distribution on a world scale" (Holt-Giménez, 2017, p. 33), by establishing a pattern of regulations that privatized production of food (McMichael, 2009).

Second global food regime (1950s—1970s). Despite the establishment of a globalized food network, throughout the 19th century and early 20th century, a majority of people in the world were farmers using a diversity of methods in growing food (e.g., slash-and-burn agriculture, floating gardens, fertilizing through crop cover) and a diversity of farm labor arrangements (e.g., communal land management, family farms, sharecroppers) (Holt-Giménez, 2017). In the United States, agriculture was a stable but labor-intensive business (Dimitri et al., 2005). A majority of farming took place on small diversified farms in rural areas, where more than half of the United States population lived (Dimitri et al., 2005). (It is important to acknowledge many of these farms used the sharecropper labor of former slaves, especially in the South (Royce, 2010)). These farms employed nearly half of the workforce and produced an average of five different commodities (Dimitri et al., 2005). Farmers were able to sell food at 'parity prices' (i.e., fair exchange value)

that allowed them to cover their costs of production and earn a decent livelihood (USDA, 2011). The United States had not yet entered World War I, which began in 1914, and farmers saw their prices and profits rise as Europe relied on them for imported food, increasing demand sharply (Rasmussen, 1962). In 1917, Germans sank American merchant supply ships headed for Europe, and the United States entered the first world war. Despite this, high wartime grain prices and new Ford tractors led to an agricultural boom in the United States: high prices during the war encouraged even more production of food and the farm sector in the United States continued to grow due to increased speculation in agricultural land (USDA, 2011; Holt-Giménez, 2017).

However, after World War I ended in 1918, European farmers began producing their own food again, leading to an oversupply of agricultural products and a crash in international grain and cotton prices (Holt-Giménez, 2017). Slowed growth in demand coupled with overproduction created low prices, resulting in low per capita income for famers, and the end of the war marked a sudden end in overall farm prosperity (Rasmussen, 1962; USDA, 2011). A chronic agricultural depression persisted during the 1920s (Rasmussen, 1962). By 1923, farmers in the United States began to struggle financially. Investors abandoned agriculture as a capitalist venture, and American farmers found themselves over-extended on loans with food prices well below the costs of production. Concurrently, income inequality grew in the United States; corporations saw their profits increase by 62 percent, while workers' wages rose by 9 percent in comparison. When the Great Depression befell the United States in the year 1929, the income inequality gap increased, with the wealthiest 10 percent of Americans controlling 34 percent of the wealth (equivalent to that owned by the bottom 42 percent). By the year 1932, millions of Americans were out of work (approximately one in four) (Holt-Giménez, 2017).

Agricultural demand decreased due to the recession, as families cut their purchasing of meat, milk, and fresh produce in efforts to get by on savings or limited earnings. The decrease in demand lead to devasting impacts for farmers in America. Because food commodities are grown and harvested over a growing season (rather than being produced quickly in a factory) farmers were not able to adjust their output (as industrialists were) and suffered more than other sectors as a result (Poppendieck, 2014). For example, between 1929 and 1934, industrial production decreased by 42 percent in volume and in 15 percent in price while agricultural production decreased only by 15 percent in volume but by 40 percent in price (Poppendieck, 2014). The lack of consumer demand/ability to pay and an inability to curtail output resulted in food waste across the countryside, and with a 41 percent decrease in the parity prices (i.e., ratio of the costs to produce crops versus the money received for crops) some farmers found it more economical to burn corn as fuel and feed it to hogs than to sell it as produce (Poppendieck, 2014). Adding to the financial hurt, farmers took on debt in farm expansion and investment in machinery during the first world war; these debts were contracted and calculated at inflated wartime interest rates when food prices were higher (Poppendieck, 2014).

Environmental disaster compounded these economic stressors in 1930; a severe drought impacted much of the South and extended as far to the Northwest as Montana and as far to the Northeast as Pennsylvania, reducing up to 50 percent of agricultural yield in hardest hit regions (Poppendieck, 2014). Inability to get families through the winter, and thus the ability to plant new crops in the spring, meant that farmers were unable to pay down their debts the following year (Poppendieck, 2014). Furthermore, in 1931 a combination of extreme drought, overgrazed and over farmed grasslands, and severe winds resulted in 'The Dust Bowl' conditions of the Great

Plains of the Mid-West; these conditions diminished abilities to grow food, driving farming families off of their land and in search of work (McLeman at el., 2014). Over the years 1930 to 1935, an estimated one-sixth of all farms in the nation were subject to some kind of forced sale due to bankruptcy, mortgage foreclosure, or delinquent tax sales. Many farmers never recovered from debt even after property were seized, and some became tenement farmers on the lands they had once owned (Poppendieck, 2014).

As the economy worsened and jobs became harder to come by, many Americans cut back substantially on food. Many skipped meals and subsisted on one primary cultural staple, severely limiting consumption of fresh produce, meat, and/or dairy (Poppendieck, 2014). As time went on, Americans relied increasingly on charity organizations for food; however, these organizations were often haphazard volunteer agencies focusing on specific tasks and serving particular neighborhoods, religions, or ethnic groups (Poppendieck, 2014). Furthermore, because farmers had begun the practice of the single cash crop (e.g., tobacco in the South), many had diminished their subsistence farming over time and did not have food crops or livestock on their lands to sustain them when impoverished (Poppendieck, 2014).

It was becoming increasingly clear that large-scale government intervention was necessary to address the widespread hunger and unemployment in both rural and urban areas; however, the federal government persisted in giving positive economic outlooks (e.g., proclaiming that a strengthened nation is “just around the corner”) and delayed in their response (Poppendieck, 2014). Local governments and communities sponsored campaigns to encourage homeowners to create odd jobs for the unemployed, allocated garden plots so that those without work could grow their own food, and encouraged small entrepreneurial activities, such as selling

fruit (Poppendieck, 2014). However, local efforts and philanthropy were unable to address issues of widespread hunger; those without employment commonly salvaged for food in city dumpsters, collecting restaurant waste and leftovers. Those still employed frequently took food from their workplaces (e.g., restaurants, hospitals, prisons) to supplement their lower wages and to help feed their families (Poppendieck, 2014).

Despite the economic recession, farmers produced even greater volumes of food to try to compensate for their high, fixed production costs. This only worsened the situation, as increased supply continued to drive prices down further. In response, farmers began to desperately destroy their products in efforts to drive prices down and cut their losses (e.g., slaughtering sheep, dumping milk, plowing crops into the ground). At the same time, long lines of destitute, hungry Americans formed within the nations' cities, while perfectly edible grain rotted in silos. The situation of gross overproduction and waste of food when so many went hungry, earned the characterization of "breadlines knee-deep in wheat" (Poppendieck, 2014; Holt-Giménez, 2017).

In response to the Great Depression, President Franklin D. Roosevelt implemented a series of policies under the New Deal legislation (1933 – 1939). The Agricultural Adjustment Act (AAA) and the Commodity Credit Corporation (CCC) sought to return 'parity prices' and return the purchasing power of farmers to levels before World War I began. Through the AAA, problems of oversupply were managed through a variety of actions: securing voluntary agreements with producers to reduce acreage in basic crops and pay farmers to take land out of production; using direct payments for participation in acreage control programs; regulating marketing agreements (with processors, producers, and other organizations involved in agriculture commodity

production and distribution) that limited how much farmers could produce; eliminating unfair practices or charges by those involved in handling agriculture commodities; determining the necessity for and the rate of processing taxes on food distributors and processers; and using the proceeds from taxes to appropriate funds and pay for the costs of adjustment operations (Rasmussen et al., 1976; Friedmann, 1982; Holt-Giménez, 2017). The CCC made loans to farmers at rates calculated to create a specific ratio between farm prices and other commodities; when agricultural prices were below the intended ratio, the CCC accumulated surplus agricultural commodities (Friedmann, 1982). It is important to note that the AAA regulated production in terms of acreage; however, the policy failed to prevent the accumulation of stocks by the CCC. As a result, while acreage decreased by 13 percent by 1941, production had increased by 21 percent (Friedmann, 1982).

In addition to addressing agricultural supply, the New Deal legislation addressed food insecurity directly and indirectly in several other ways. The lack of food access at the time was clearly not an issue of supply or even high prices, but a problem of unemployment; in response, the legislation provided expansive job creation programs to get Americans back to work and put money back into the hands of American workers. At the same time, national food assistance programs were developed to alleviate food insecurity due to poverty as well as make use of excess supply. These agricultural policies established during the New Deal era set the institutional regulatory framework that moderated relationships between agriculture, government, food, and capitalism for the following 50 years (Holt-Giménez, 2017).

Beginning in 1935, under the Works Progress Administration (WPA) jobs programs of the New Deal, high rates of unemployment began to decline. Furthermore, after the United States

entered World War II in 1941, the demand for soldiers and weapons production essentially eliminated surplus labor overnight. Even women, traditionally confined to work in the home, began working in factories to help keep up industrial demand for supplies. A shortage of labor limited the agriculture sector within the United States from being able to meet seasonal demand. The sector needed hundreds of thousands of people to help cultivate and harvest food (Scruggs, 1960; Holt-Giménez, 2017). In response to a shortage of farm workers and after a prolonged negotiation with the Mexican government, the United States enacted the Mexican Farm Labor Program Agreement of 1942 to bring in a labor force from Mexico (Scruggs, 1960). (This program would ultimately become the Bracero Program. Within two decades of the Agreement, approximately 4.6 million Mexican workers helped to transform the American agriculture system.) Unfortunately, this new labor force was exploited; Mexican farm workers were paid menial wages and labor violations were rampant (Mize, 2006). Exacerbating this problem, contract requirements between workers and producers (as well as the precarity of a foreign employment status) kept migrant workers from being allowed to organize, change conditions of their employment, and hold producers accountable for unjust working conditions. This inexpensive and exploited labor coming from Mexican immigrants ultimately increased the value of the agricultural sector and agricultural land by billions of dollars (Holt-Giménez, 2017).

This second boon to the agricultural industry in the United States following World War II placed the United States agricultural sector in a powerful position within global markets and set the second global food regime in motion. For one, after World War II ended the large manufacturing facilities producing nitrates (for weapons) and toxic chemicals (for poison gas), were able to shift their production practices to developing fertilizers and pesticides (Gonzalez,

2004). Furthermore, with an expansion of manufacturing infrastructure due to the war, formerly heavy industries (e.g., those producing tanks and Jeeps) were able to quickly shift their production lines to instead develop tractors and combines. With a strong post-war economy, farmers easily procured loans to purchase industrial farm equipment (including chemical fertilizers and pesticides) and to acquire more and more land. Finally, inexpensive and abundant petroleum helped to propel the United States into the era of industrialized agriculture (Holt-Giménez, 2017). As production soared, food prices decreased, and surplus grew exponentially (Clapp, 2016). The United States government sent much of their surplus food to Europe as aid during the reconstruction era (Friedman, 1982). In addition, after the U.S. market became saturated and could no longer absorb the supply of fertilizers, farm machinery, and pesticides (Holt-Giménez, 2017), these products were sold to European farmers under the U.S. Marshall Plan for European reconstruction (Economic Cooperation Administration, 1951). However, trade with Europe did not offer a long-term solution to the problem of American surplus (Friedman, 1982). As European farmers began producing food at a larger scale, Europe no longer had a need for the additional food aid or industrialized agriculture products coming from the United States and began to produce surplus grain (Friedman, 1982; Economic Cooperation Administration, 1951; Holt-Giménez, 2017; Clapp, 2016).

Entering the second global food regime. This second regime directed flows of surplus food from the United States to its informal empire of postcolonial nations states. At the time, developing countries were essentially self-sufficient in supplying food, if not food exporters to other regions (Friedmann, 1982). However, economically and politically, food aid provided an opportunity for the United States to incorporate these developing nations into the free world

and instill development policies (Friedmann, 1982). In part, this second food regime developed in response to the Cold War and the fear of communism held by Western governments; however, from a market perspective, food aid provided an opportunity to export monoculture production practices and technologies to developing nations through the Green Revolution (McMichael, 2009). Modern agricultural production techniques and food aid were meant to keep uprisings (particularly those in support of communism) at bay as well as impart capitalism as an economic model. As described by Friedmann (1982), "Extension of capitalist relations to the former colonies was part of the general American strategy of constructing the free world as an arena for the open flow of goods and capital. The extension of commodity relations to the food supply became an intrinsic part of the project of capitalist industrialization and shaped its course" (p., 255-256).

By accepting food aid from the Global North, governments in the Global South were able to sell food at low prices in their national currency, providing revenues for needed public works projects and keeping uprisings at bay (Clapp, 2016; Holt-Giménez, 2017). A continuous food supply coming from Western countries kept the price of grain low and created conditions for powerful interest groups to expand the globalized food trade and enter markets of the Global South (Rosin et al., 2013; Friedman, 1982; Holt-Giménez, 2017). Food aid restructured trade quickly: the surplus grain being exported to developing countries dampened global grain prices, and with American policies supporting domestic production and subsidizing exports, the United States replaced Europe as the center for international trade (Friedman, 1982). Instead of the Global South supplying Northern countries with food, this relationship switched – former colonies now became dependent on the Global North for inexpensive food, reinforcing the notion

that these countries needed to be “developed” with agriculture playing a major role in that development (Friedman, 1982; Holt-Giménez, 2017; Clapp, 2016; McMichael, 2009).

The Green Revolution—a campaign to “feed the world” through the expansion of industrialized, high yield agriculture—was an integral part of this development of the Global South (McMichael, 2009) as well Cold War efforts to direct countries away from communism. As William Gaud, Administrator for the United States Agency for International Development, stated in 1968, “It is not a red revolution like that of the Soviets, nor it is a white revolution like that of Shah of Iran… I call it the Green Revolution” (Clapp, 2016, p. 36). Under the Green Revolution, farmers planted high yield, genetically modified (GMO) hybrid seeds developed in the United States in the 1960s by chemical companies. These companies were formerly manufacturing inexpensive, synthetic pesticides and fertilizers and eventually marketed GMO seeds and agrochemicals in tandem (Gonzales, 2004). These monoculture crops ultimately replaced thousands of varieties of wheat, maize, and rice, resulting in an extreme decrease in localized agrobiodiversity (Holt-Giménez, 2017; Gonzalez, 2004). Because seeds could not be harvested from the genetically modified, hybrid crops, farmers were required to purchase seeds after each harvest, keeping them indebted to and dependent on the capitalist, industrial model (Gonzalez, 2004). Furthermore, hybrid varieties required high levels of fertilizer, irrigation, and pesticides in order to produce greater yields, and these practices ultimately contributed to pollution problems and increases in greenhouse gas emissions (Rosin et al., 2013; Clapp, 2016; McMichael, 2009; Gonzalez, 2004).

This import of industrialized agriculture through the Green Revolution and excess food aid undermined capacity for local food production (Gonzalez, 2004). With large-scale

monoculture production and inexpensive food coming in from the United States, many smaller scale producers (those supplying majority of locally produced food) were unable to compete, leading to greater levels of poverty and food insecurity (Gonzalez, 2004). Because farmers had to purchase the seeds and other industrialized farming inputs (as opposed to planting seeds saved from prior harvests and using natural farming techniques), the Green Revolution favored middle and larger scale farms with capital to cover upfront costs (Gonzalez, 2004). The inability for smallholding farmers to participate in the Green Revolution resulted in a massive displacement (Gonzalez, 2004; Holt-Giménez, 2017; Shiva, 2016). Unable to compete against low grain prices, many small-scale, unsubsidized farmers in the Global South were forced out of business. Peasant farmers relocated to grow subsistence crops and created new territories for farming (e.g., fragile hillsides and tropical forests) through slash and burn agricultural techniques, adding to environmental degradation. Others fled to urban centers for work. During this period of mass migration, cities unable to keep with the infrastructure demand increasingly turned into large-scale slums (Holt-Giménez, 2017).

Exacerbating social inequality and environmental degradation, once the highly capitalized farms were saturated with products and inputs (e.g., hybrid seeds and chemical fertilizers), governments in the Global South lent money to existing peasant farmers to purchase these products (Schurman & Munro, 2013; Holt-Giménez, 2017). Industrial agriculture techniques were being used by a majority of farmers (small and large alike); these production practices of the Green Revolution led to the process of land degradation and the need for continual acquisition of new farmland in forested and ecologically sensitive areas (Holt-Giménez, 2017). Production of high yields on a mass scale yet again resulted in an oversupply of grains. While larger farmers

with greater capital became more economically successful and grew in size under these conditions (Gonzales, 2004), millions of smaller holders beholden to the Green Revolution model went bankrupt, abandoned farming altogether, and moved to urban areas (Holt-Giménez, 2017; Clapp, 2016; McMichael, 2009; Shiva, 2016).

Third global food regime (1980s—Present). The economic circumstances following the Vietnam War and the 1972 oil crisis acted as catalysts for the current food regime, by spurring economic development in the Global South through the adoption of Northern industrialized agriculture technology and practices. In 1972 Arab nations producing oil established a cartel which restricted the oil production and in turn raised oil prices. At the same time that U.S. currency printed by the Treasury to pay for the Vietnam War began to circulate through the international banking system, banks invested heavily in 'petrodollars' (i.e., a notional unit of currency earned by a country from the export of petroleum). With increased funding due to the petrodollar system (e.g., exchange of oil for U.S. dollars between countries that purchase oil and those that produce oil) and the need to pay interest on additional cash dollars flowing from the United States Treasury, private banks were eager to invest. Banks awarded generous loans with favorable terms to developing countries in the Global South. Developing nations in the Global South were encouraged by both the European and United States governments to take on large loans in their economic development plans and to invest in technology and expertise from the North. Capitalizing on these economic development loans and lucrative contracts, the international agricultural research centers (e.g., Consultative Group on International Agricultural Research) as well as consultants and experts from the United Nations Food and Agriculture Organization, the U.S. Agency for International Development, and private development

organizations helped to expand the use of Green Revolution technologies in the Global South and to flood the global market with food. The oversupply of food resulting in a steady decline in food prices (Holt-Giménez, 2017; Clapp, 2016).

In response to inflation caused by the Vietnam War, the U.S. Federal Reserve restricted the money supply in 1979. As cash currency became less available, interest rates increased dramatically (as high as 20 percent). These higher interest rates slowed down the economy, resulting in an economic recession. During recessionary conditions, consumers purchased fewer goods on global markets; at the same time, borrowers in developing countries that relied on a strong international market struggled to pay back their loans and higher interest rates (Holt-Giménez, 2017; Clapp, 2016).

***Entering the current global food regime*.** Beginning with Mexico in 1982, countries began defaulting on their loans—the Global South entered an economic crisis due to a collective inability to pay down foreign debt. With commercial banks refusing to extend credit lines further, the World Bank and the International Monetary Fund (IMF) loaned (public) money to indebted countries. This allowed developing countries to keep current with their payments to private banks in the Global North. However, these loans were conditional; by receiving monetary help from the World bank and IMF, developing countries were required to institute structural adjustment policies (SAPs) that forced countries in the South to open their economies to international markets. Through the use of SAPs, the IMF and World Bank successfully removed controls on international finance capital, privatized formerly state-controlled industries and services, and deregulated labor markets. As another condition of their loans, debtor countries in the Global South were pushed to dismantle their grain reserves and discontinue growing food.

Instead, countries in the Global South were to grow "non-traditional" export products that would earn greater economic returns in the global market and allow for more easily paying debts back to banks. While the intention was to balance prices and provide inexpensive food through globalized trade, these SAPs ultimately made the Global South dependent on the Global North for food. Additionally, Northern banks collected their debt and kept developing counties locked into endless payments. The establishment of the SAPs and the eternal indebtedness of countries within the Global South set forth the global agenda of imposing neoliberal economic policies, known as the "Washington Consensus" (Holt-Giménez, 2017; Clapp, 2016; Rosin et al., 2013).

In 1995, the World Trade Organization (WTO) was formed, officially adding agriculture and trade-related aspects of intellectual property rights (TRIPS) to the trade agenda. Adding TRIPS to formal trade agreements secured the global expansion of genetically modified corn and soybean varieties. American companies like Bayer and Monsanto needed these regulations to ensure that developing countries would not be able to reproduce their genetically modified organism (GMO) crops. In the 1980s and 1990s, the WTO successfully established SAPs into international treaties under Free Trade Agreements (FTSAs), which coincidentally cannot be rescinded. These SAPs were incorporated under the premise of reducing trade barriers and establishing non-discriminatory procedures for enforcing global trade regulations. However, ultimately these agreements protected markets and subsidies of the United States and Europe while simultaneously lowering the tariffs in the Global South (Holt-Giménez, 2017; Clap, 2016; Rosin et al., 2013).

The United States and other countries signed bilateral and regional FTAs enforced under the WTO (Clapp, 2016). Most notably, the United States joined the North American Free Trade

Agreement (NAFTA) in 1994 and the Central America-Dominican Republic-United States Free Trade Agreement (CAFTA-DR) in 2004. Farmers in the Global South have come out in opposition of these agreements, arguing that they sanction selling subsidized grains from the North at or below costs of production for grains in the Global South. In addition to farmers, others oppose the job losses associated with these agreement, the relatively lax labor regulations, and the lack of environmental regulations (Clapp, 2016). Similar concerns (and citizen outrage) over trade agreements have put political holds on the Trans-Pacific Partnerships (TPP) and the Trans-Atlantic Trade and Investment Partnership (TTIP); both of these agreements were negotiated largely under corporate secrecy (Holt-Giménez, 2017). Under this corporate food regime, the Global South went from exporting a billion dollars of food in the 1970s to importing 11 billion dollars in food by 2001 (Holt-Giménez, 2017).

The current corporate food regime is characterized by a "monopoly of market power and mega profits of agro-food corporations, globalized meat production, the emergence of agrofuels, and the devastating expansion of palm and soy plantations" (Holt-Giménez, 2017, p. 54). Nearly all of the worlds food systems are involved in the current, corporate food regime consisting of large monopoly companies like Monsanto, Sygneta, Bayer, ADM, Cargill, Yara, Coca-Cola. Tesco, Carrefour, Walmart, and Amazon (which recently acquired Whole Foods). To illustrate their economic power, Cargill reported $113,490 billion dollars in revenues in the year 2019 (Cargill, 2020). Furthermore, Cargill is among four firms (Cargill, Archer Daniels Midland Corporation, Bunge Limited, and Lois Dreyfus Compony) that control more than 70 percent of the global grain market (Mulik, 2019; Clapp, 2015; Murphy et al., 2012). Within the beef industry, three producers (Tyson Foods, Cargill Meats Solutions, and JBS-Swift) hold incredible power within the market,

from making determinations in traits that producers breed to influencing which products are featured in display cases (Lowe & Gereffi, 2008; Mulik, 2019). Of pork production in the United States, Smithfield Foods controls 27 percent (Lowe & Gereffi, 2008; Mulik, 2019). Furthermore, in addition to socio-economic factors (e.g., increased GDP), the consolidation and industrialization of meat production and processing by monopoly corporations, the ability to produce high yields of inexpensive, monoculture grain for feed (maize and soybean), and the industrialization and commodification of livestock (e.g., producing animal breeds for efficiency, raising livestock in confined animal feeding operations, using antibiotics to spur growth) has allowed the demand for global meat to increase dramatically (Weis, 2013). From the year 1961 to 2011, global meat consumption nearly doubled from an average of 23.2 kg per person per year to 42.2 kg per person per year; consumption of eggs doubled along the same timeframe (from 5 kg per person per year to 10 kg) (Sans & Combris, 2015; Weis, 2013).

In addition to their consolidation of markets, monopoly, agrifood corporations consolidate power by investing in food and food production technology, giving them additional power in acquisitions along the production chain (Clapp, 2016). As Clapp (2016) highlights to exemplify this process, both within and outside of food, Cargill's operations are integrated up and down the commodity chain. Cargill's operations span involvement in "…other grains and oilseeds, into flour, starches, sugar and other sweeteners, milling, vegetable oils and meals, fruits, and cocoa and chocolate…financial services, risk management and commodity derivatives trade…fertilizers, plant-based plastics, starches for pharmaceutical applications, oils for paints, foam adhesives and sealants, salt and de-icing fluids" (p. 110). Within the meat industry, Cargill is similarly integrated vertically, managing a series of inputs from seeds and fertilizer for animal

feed crops, to offering farmer consultations and services in contract negotiations, to producing/purchasing/selling/storing animal feed, to establishing livestock rearing contracts, to processing beef, to packaging and then shipping meats (Clapp, 2016).

In all, these corporations are powerful enough to influence governments as well as the multilateral organizations that create trade rules governing trade, labor, property, and technology. (Clapp, 2016; Holt-Giménez, 2017). Furthermore, these relationships between governments and powerful corporations are supported by public institutions, like the World banks, IMF, World Food Program, USAID, USDA, WTO, and private organizations like the Bill and Melinda Gates Foundations. The construction of the corporate food regime through neoliberal trade policies has resulted in a host of social and environmental impacts, deepened the consolidation of land, created a culture of capitalist-oriented farmers, and subjugated a class of laborers required to sell their physical power for survival (Holt-Giménez, 2017). With few players dominating the market and influencing trade, consumers are left with few choices in terms of their food sources and producers are left with few choices in terms of their ability to negotiate fair values for their products (Clapp, 2016).

3. CONCEPTUAL AND THEORETICAL FRAMES GUIDING THIS RESEARCH

"I mean, God, there's so much to say there, because food is so feminized historically, culturally, and when we think about food provisions at every level, from individual, household, community, we see the anchoring role that women have played historically and still today, although when we think about access to power and resources and ownership, it's largely men. When you look at food companies, they are run by men. So there's a huge gender disparity already. So from that standpoint, when you empower women, especially women entrepreneurs in food, I think that has incredible ripple effects." - Interviewee

To guide this research, two frameworks are employed: urban resilience and ecofeminist theory. This chapter provides an overview of each framework and discusses how using each orientation in tandem provides a complementary lens for examining the food system. First, this chapter begins with a brief summary of the historical context and meaning behind 'resilience' and social-ecological systems frameworks, followed by an application of these concepts to urban systems (i.e., 'urban resilience'). Second, this chapter provides an explanation for why the urban resilience framework is a useful analytical tool for examining our global food system, by reorienting our focus to the possibilities offered by supporting more localized production and distribution networks (e.g., urban food systems). Third, this chapter presents limitations in resilience frameworks in general and in application to studying the food system. Fourth, this chapter explains how incorporating critical ecofeminist theory complements the urban resilience framework and addresses limitations of resilience-thinking. Finally, this literature review explains how this dissertation contributes to filling the gaps in our current knowledge base and how these conceptual frames guide the research questions and data collection approaches.

Social-Ecological Resilience

Largely supplanting "sustainability" as a buzzword within policy and academic discourses, the concept of resilience has proliferated across a variety of fields from business and

administration, to public health, to urban planning (Leichenko, 2011; Meerow et al., 2016). The term 'resilience' characterizes a paradigm and new way of approaching social and environmental problems rather than embodying a testable body of theory (Anderies et al., 2013; Tendall et al., 2015). First defined by Holling (1973), an ecologist, 'resilience' initially referred to an ecosystem's ability to maintain its basic functional characteristics in the face of a disturbance. Holling (1996) later expanded this characterization, adding that ecosystems have multiple stable states and multiple states of flux, with resilience referring to a system's ability to bounce back to its previous state (i.e., ecological functionality) after facing a perturbation (i.e., a shock to the system). The initial ecological framing of resilience and the understanding of ecosystems as dynamic, complex, and adaptive led to the development of the concept of social-ecological systems (Meerow & Newell, 2019). Established as analytical tool by Berkes and Folke (1998) for improving natural resource management and for generating insight in how to interpret, respond to, and manage complex, adaptive systems, the social-ecological systems framework provided a lens for viewing human and natural systems as interconnected (Colding & Barthel, 2019). This conceptualization of resilience challenged the underlying and predominant assumptions behind natural resource management at the time (e.g., assumption of equilibrium, stability and predictability) (Holling, 1973; Wilkinson, 2012) and emphasized the importance of more adaptive modes of governance and management that examined interactions across scales (Colding & Barthel, 2019; Wilkinson, 2012). By adding elements of the social-ecological frameworks to existing concepts of resilience, Holling's initial definition of resilience grew to integrate the "social" elements of systems by conceptualizing nature-society as an intertwined, coevolving system (Meerow & Newell, 2019).

As a result of this expansion, social-ecological systems are evaluated in terms of vulnerability (i.e., how susceptible a social-ecological system is to harm due to environmental or social change; perturbation, shocks, or stress; and/or limited capacities to adapt to change), adaptive capacity (i.e., how capable a social ecological system is in anticipating, learning from, and managing changes; responding to perturbations, shocks or stress; and/or returning to a functional state), and transformation (i.e., how can a social-ecological system transform conditions/systems that limit adaptive capacity or increase vulnerability) (Berkes & Folke, 1998). As an example, assuming climate change is a shock or perturbation to our global social-ecological system, we can be vulnerable to future conditions (e.g., continue as business as usual), we can bolster adaptive capacity (e.g., reduce greenhouse gas emissions and anticipate/enact social and physical adaptations), or we can transform to a new system if the current one limits our ability to thrive (e.g., transition off of fossil fuels). Essentially, these features of resilience characterize the level of shocks a social-ecological system can endure without losing its key functions or changing states (e.g., ability to maintain services and prevent flooding in abnormal storm events), the system's capability to self-organize (e.g., ability to quickly develop localized disaster response), and the system's capacity for adaptation and learning (e.g., ability to change practices and infrastructure after experiencing a disaster event) (Folke et al., 2002; Meerow & Newell, 2019). Perhaps put more simply, a resilient system is characterized by diversity, connectedness, and potential for change (Wilson, 2013) and the dynamic capacity to achieve desired states in the face of disturbances (Tendall et al., 2015).

In terms of conceptualizing resilience and transition in a positively connotated or normative sense, drawing from (Wilson, 2012), Sage (2014) characterizes the concept of

resilience as a “desired state to which communities aspire, representing the capacity to absorb disturbance while undergoing changes to retain essentially the same functionality, structure and identity” (p. 255), while transition refers to “a gradual, continuous, even evolutionary process of societal change” (p. 255). Referencing, Barry (2012) and Jackson (2011), Sage (2014) discusses the opportunities in holding these two concepts simultaneously, stating, “Taken together, both terms serve as guiding principles by which to navigate a course through anticipated disruption towards a state of improved quality of life, one less cluttered by material accumulations though offering the prospect of greater human flourishing” (p. 255)

Urban Resilience. In reaction to the limited responses and apparent failures of conventional multi-level governance structures in responding to the grand challenges our society faces and the dire need for different behavioral responses (Pretty, 2013; Sage, 2014; Elmore, 2018), practitioners, grassroots organizers, scholars, and municipal leaders are beginning to turn toward the possibilities for more localized efforts that put principals of sustainability into practice at the community-level (Sage, 2014). Cities are increasingly seen as a place of focus for these localized actions. Cities are seen as sites for social change and innovation, particularly in response to structural and global social and environmental problems (Broto, 2017). For example, more and more cities are enacting localized responses to climate change due to the lack of leadership at other levels of governance (Sage, 2014) and due to the increasing pressure from constituents to respond to sustainability and equity concerns (Sonnino, 2014; Elmes, 2018).

As the world continues to become urbanized and cities encounter greater uncertainties and challenges, ‘urban resilience’ has been an increasingly favored framework for use by scholars and practitioners alike (Meerow et al., 2016; Leichenko, 2011). For one, social-ecological

resilience defines urban systems as dynamically changing in non-linear ways: a lens considered useful when operating within uncertainties that climate change portends (Meerow et al., 2016; Rodin, 2014; Tyler & Moench, 2012). Furthermore, cities are often theorized as being highly complex and adaptive systems (Meerow et al., 2016; Batty, 2008; Godschalk, 2003), and the resilience framework highlights organizing and changing systems in ways that bolster abilities to respond to uncertainties and prepare for anticipated changes (Caldarice et al., 2018). Looking beyond adaptation and disaster response, resilience offers a systems-based framework for integrating various urban dimensions (individual, societal, economic, environmental, political, and infrastructural) and generating co-benefits by coordinating across sectors (Caldarice et al., 2018). Furthermore, urban resilience frameworks are being used to organize strategies for developing innovative, transformational shifts in how cities are designed, planned, managed, and lived in (Caldarice et al., 2018).

Applying social-ecological resilience to the urban context, 'urban resilience' is used across a wide range of fields and disciplines (e.g., business, social science, engineering, environmental science). The definitions for 'urban resilience' are essentially the same as those for social-ecological resilience only bounded within the urban context; however, because urban resilience is used so broadly, there are a multitude of definitions/interpretations and different approaches in operationalization (Kleien et al., 2003). In order to promote greater consistency within urban research and policy, to encourage collaboration among and between researchers and stakeholders, and to allow practitioners and researchers alike to operationalize and apply resilience in urban settings, Meerow et al. (2016) developed a comprehensive definition through an extensive review of urban resilience scholarship: "resilience refers to the ability of an urban

system-and all its constituent social-ecological and socio-technical networks across temporal and spatial scales-to maintain or rapidly return to desired functions in the face of a disturbance, to adapt to change, and to quickly transform systems that limit current or future adaptive capacity" (Meerow et al., 2016, p. 39).

Applying resilience to the food system

A shift toward more a more socially and ecologically resilient food system requires rethinking existing models of globalized food networks and reevaluating processes that created our current food system (Gunilla & Olsson, 2018; Toth et al., 2014). Because of the dynamic and complex social-environmental networks within food systems, resilience thinking has enormous potential as an analytical tool in identifying how to help a build food system that promotes greater food security and contributes to goals of environmental sustainability (Gunilla & Olsson, 2018; Naylor, 2009; Prosperi et al., 2014, Tendall, 2015). The food system is highly complex with a series of inter-related social and environmental components; examining food through the lens of the resilience paradigm presents an opportunity to account for these complexities comprehensively and in the context of capacity building and transformation (Gunilla & Olsson, 2018; Tendall et al., 2015; Ericksen, 2008a; Ericksen, 2008b; Jacobi et al., 2018). Furthermore, the resilience framework provides an opportunity to examine food within the urban context, taking social and environmental components and opportunities for innovation and adaptation into account (Vieira et la., 2018).

Food systems as social-ecological systems. Our globalized, corporate food system is a complex network of food production, packaging, processing, distribution, retail, consumption, and disposal practices (Ericksen, 2008a; Ericksen, 2008b; Tendall et al., 2015). Our globalized food

system is social-ecological, in that it consists of biophysical and social factors that are linked through feedback mechanisms (Berkes et al., 2008; Ericksen, 2008a; Tendall et al., 2015). Furthermore, our global food system consists of a series of social, economic, political, institutional, and environmental processes, occurring at different temporal, spatial, and physical scales in differing contexts (Ericksen, 2008a; Tendall et al., 2015; Meerow et al., 2016). The activities occurring within bio-geophysical, social, economic, and political environments drive how the food system functions and operates, and the dynamic ways in which these activities (e.g., food production and distribution practices) relate and operate have implications for a variety of social and environmental outcomes (e.g., increases in greenhouse gas emissions and incidents of dietary disease) as well as levels of food security and access (Gunilla & Olsson, 2018; Tendall et al., 2015).

Vulnerability to shocks. In addition to being a highly complex, interconnected social-ecological system, our global food system is highly vulnerable to politics, climate change, natural disasters, economic crises, and other risks (Toth et al., 2016; Ericksen, 2008b). The historical transition from a subset of localized food systems (where food production practices were connected to and reliant on local resources and local knowledges) to a global corporate food system (where production practices are industrial, mechanized, and resource-intensive) reconfigured our food relationships dramatically and increased vulnerability (e.g., reduced biodiversity of crops, lower wages for workers) (Gunilla & Olsson, 2018; Toth, 2016). Furthermore, Jacobi et al. (2018) found that while agro-industrial models of the predominant, corporate food system have characteristics indicative of high adaptive capacity potential (e.g., knowledge of threats and opportunities), this model increases localized vulnerability (e.g.,

decrease local food security) and diminishes adaptive capacity for agroecological systems (e.g., reducing local capacity to buffer shocks by reducing crop and breed diversity and ecological self-regulation). Furthermore, while the corporate food regime model promotes economic efficiency, these changes have largely been at the expense of significant negative social and environmental costs (which add to globalized and localized vulnerability). Such negative impacts—affecting food availability, food accessibility, food utilization, and food system stability—are projected to be exacerbated by global climate change, ultimately deepening these vulnerabilities (Toth, 2016; Mbow et al., 2019; Jia et al., 2019). Furthermore, these detriments will be felt in both the short and long term, as climate change portends greater frequency and greater intensity in weather events as well as changes in temperature and precipitation patterns (Mbow et al., 2019; Jia et al., 2019; Toth, 2016).

Relating to adaptive capacity, this reconfiguration to a globalized food system limits the capability to identify risks within supply chains and weakens the ability to proactively respond to systemic shocks within food streams (Toth, 2016). Furthermore, vulnerabilities are experienced on dramatic scales; because nations are increasingly dependent on this highly globalized, interdependent system, a shock can send ripple effects throughout the entire globe (Toth et al., 2016; Gunilla & Olsson, 2018). In addition, the global food system fosters vulnerability by reinforcing and relying on systemic inequalities (e.g., exploitation of labor and low wages) and oppression of people and nature (e.g., environmentally and socially destructive practices, dismissal of local knowledge and expertise) (Shiva, 2009; Jacobi et al., 2018).

Application of urban resilience framework. Social mobilization and grassroots organizing pertaining to food (e.g., advocating for more ethical food production or more equitable food

access) have placed an importance on the re-localization of food production (Sage, 2014; Holt-Giménez & Shattuck, 2011). While still largely theoretical, these views are supported within academic scholarship spheres as well. Centering food at more appropriate scales of production, processing, distribution and consumption may result in more self-contained regional economies (Gunilla & Olsson, 2018; Ilieva, 2017; Toth, 2015) that operate in multifunctional synergies, reconnecting producer to consumer, rejoining people to place, reinforcing ecological stewardship, and activating civic mobilization (Sage, 2014). Furthermore, maintaining urban and urban-periphery agriculture is a critical issue for urban planners in addressing food access: cities can provide infrastructure that supports local food distribution within short food supply chains (Hodgson et al., 2011; Thomas, 2010; Toth, 2015).

Bringing agricultural systems into urban contexts can enhance biodiversity and provide a variety of social and environmental benefits to cities (e.g., increasing food security, improving air quality, managing stormwater) (Toth, 2015). Urban agriculture provides green spaces (which can improve the health of urban ecosystems), and sustainable agriculture practices within urban regions can help to recover and revalorize local soils, landscapes, water catchment systems, and plants and animal ecologies (Sage, 2014). Biodiversity supported by urban agriculture can improve the functionality and quantity of ecosystem services provided within the urban sphere (Lin et al., 2015; La Rosa et al., 2014; Toth, 2015). In addition, having the availability of local food resources ensures greater resilience when global food supply lines become threatened (Barthel & Isendahl, 2015; Toth, 2015).

Limitations of resilience framework. Despite greater use of resilience in sustainable management planning and the potential for offering researchers important insights when

studying complex social-ecological systems (Meerow et al., 2016; Pickett et al., 2013), resilience is often critiqued for being too ambiguous and difficult to operationalize and measure (Meerow et al., 2016; Matyas & Pelling, 2014; Vale, 2014). Furthermore, urban and social-ecological resilience is largely atheoretical and fails to adequately account for power dynamics and structural oppression (Fabinyi et al., 2014; Boonstra, 2016). In particular, social-ecological resilience literature presents a weaker theorization of the "social" component of social-ecological systems, by neglecting key considerations of the complexity of social actors (e.g., assuming people's interests, expectations, and/or experiences are the same) and by limiting evaluations of social diversity and disparities in power (e.g., social stratifications along lines of gender, ethnicity, age, socio-economic status) (Fabinyi et al., 2014). Instead, resilience of social components within social-ecological systems are commonly evaluated and discussed in terms of organized social units (e.g., agencies, committees, communities, institutions) rather than in terms of human agency and political and cultural relationships (Fabinyi et al., 2014).

Borne from the field of ecology and engineering, resilience theory has largely grown in insolation from the critical social science literature, especially in terms of addressing the social aspects of environmental change (Berkes & Ross, 2013; Fabinyi et al., 2014). In particular, as a framework resilience has failed to incorporate theories emphasizing social stratification, power relationships, and cultural dynamics; furthermore, resilience fails to account for oppressive ways in which the status quo is maintained (Berkes & Ross, 2013; Fabinyi et al., 2014). A key focus of resilience theory—transformational change—can only occur through a shift in power dynamics (i.e., collective action, skillful organizing, and focused exertion of influence); by failing to examine power dynamics, we fail to identify effective strategies for transformative changes in our

consumption and production systems (Fuchs et al., 2014). Furthermore, an evaluation of power is important, as diversity and social difference have implications for how differing actors or groups can and should build adaptive capacity and make social-ecological systems more resilient (e.g., incorporating and valuing traditional knowledge, community beliefs, and/or shared values or experiences) (Fabinyi et al., 2020).

In addition to helping to highlight opportunities for transformational change, accounting for power dynamics within social-ecological systems is practically necessary for political and legal reasons (e.g., the need for identifying responsibility for outcomes within social-ecological interactions) and for moral and ethical reasons (e.g., the need for assessing sustainability performance and social arrangements in relation to social justice and equity) (Boonstra, 2016). Furthermore, under accounting for power relations and the factors and forces that shape vulnerability to begin with (both environmental and social), ultimately leaves intact the inequitable variability (in terms of achieving resilience) within different communities (Weichselgartner & Kelman, 2015). To this end, Meerow and Newell (2019) argue that the following must be considered in order to strengthen urban resilience theory as a policy and analytical tool: which stakeholders are included in the process of conceptualizing and enacting resilience strategies (e.g., will community members, businesses, advocates, and/or neighborhood organizations be included); which social-ecological problems will be prioritized and how will these be addressed through urban policies or interventions (e.g., will food access or nutrition education be prioritized, and will these be pursued through expansion of public food assistance or through community garden programs); which problems will be prioritized—short or long term—and will interventions promote persistence or transformation (e.g., will peri-urban

farmers be given assistance in managing drought conditions through drip irrigation or be given assistance to transition to growing drought-tolerant crops); how will local-scale resilience be impacted by global-scale processes, and how can local transformations lead global transformations (e.g., will peri-urban farmers compete at farmers markets with global market prices at grocery stores, and will urban popularity with vegan/vegetarian diets influence demand for global meat production); and is resilience being studied or incorporated to promote adaptive capacity generally, to respond to crises after the fact, or to encourage transformative practices (e.g., are researchers looking to improve the local food system, to restore a local food system after a natural disaster or economic crisis, or to radically change how food is produced and consumed). However, while incorporating these considerations forces scholars and urban practitioners to reflect on issues of equity in urban resilience research and policy processes, the additional considerations in themselves still lack a critical social science lens assessing power and oppression.

Furthermore, even within limited resilience scholarship examining long-term transformative change toward more sustainable societies through a lens of power, the emphasis has been on examining power relationships within regimes (dominant institutions and practices) rather than niches (places of innovative practices) (Avelino, 2017). As a result, researchers tend to privilege the power of regimes over the power of niches, which essentially privileges stability over change (Avelino,2017). For example, resilience research tends emphasize ways to promote conditions that produce stability; however, issues of justice are concerned with social movements demanding change, and periods of transitions may warrant instability. Avelino (2017) argues that to account for power in ways that creates forward momentum in sustainable

practices, we need to focus on horizontal power structures (i.e., focus on how actors engage with resources, structures, and systems in different ways) in addition to examining vertical structures of power (i.e., interactions between actors, structures, and systems). Focusing on niches (e.g., innovative organizations and actions within cities) and incorporating a lens of power creates opportunities for examining possibilities for transformational change in social-ecological systems.

Ecofeminism

Ecofeminism, arose in the late 1970s and the early 1980s as a framework to merge environmental goals (i.e., ending the harm and degradation of the ecological, more-than-human world) and feminist goals (i.e., ending the subordination, inferiorization, and oppression of women and other marginalized groups) (Mallory, 2013). As key ecofeminist scholar Val Plumwood (2002) characterized this convergence of issues, "When four tectonic plates of liberation theory—those concerned with the oppressions of gender, race, class and nature—finally come together, the resulting tremors could shake the conceptual structures of oppression to their foundations" (p. 1). Ecofeminism incorporates a broad critique and use of power that seeks to explain "the conceptual links between different categories of domination and links the domination of humans to the domination of nature (Plumwood, 2002, p. 4). While gender is a focus within ecofeminist scholarship, the lens of examining oppression is much broader; for example, ecofeminist scholar Vandana Shiva (1989) argues that not only women's labor is dominated in existing capitalist power structures (e.g., caring for children, nourishing families), but the labor of non-western, non-white people as well (e.g., migrant farm laborers). Ecofeminist theory holds that that "in order to ensure the survival and flourishing of all life systems on the

planet, the patriarchally identified values of domination, exploitation, and control that condition western attitudes toward nature must be replaced with the more life-sustaining feminist values of nurturance, care, and reciprocity" (Mallory, 2013, p. 176). The framework offers a lens for analyzing ways in which all forms of oppression complexly interact and help to maintain and in turn produce other forms of oppression (Plumwood, 2002). Ecofeminist scholarship emphasizes transspecies diversity and an articulation of an inclusive, ecological, economical, and participatory democracy (Gaard, 2017).

Ecofeminism offers a complementary theoretical framework to urban resilience. First, the food system has historically and continues to be organized as highly gendered, with women more actively engaging in food production and distribution systems with their personal labor on a global level, in both rural and urban settings (Allen & Sachs, 2012). Women predominantly carry the responsibility of food provision, both in terms of mental labor (e.g., knowing how to grow food, knowing how to cook and prepare food, budgeting how much food will cost, identifying which ingredients are needed and which ingredients are healthy, creating grocery lists, planning meals), and manual labor (e.g., serving food at restaurants, working as cashiers in food industries, growing food in community gardens, picking produce and harvesting food on large scale farms, tending to livestock, traveling to markets and purchasing food, preparing food for multiple meals, feeding children and elderly, washing dishes and cleaning kitchens, packing lunches, volunteering at food pantries) (Allen & Sachs, 2012). Yet while women perform the majority of food-related work, women control few of the resources within food systems and hold little power in managing the food industry and little influence in decision-making processes within food policy (Allen & Sachs, 2012). Furthermore, despite bearing the responsibility for ensuring that others are

nourished, women and other marginalized groups are often are not able to adequately nourish themselves; for example, women will sacrifice their own nutrition food if family members are in need and resources are scarce (Allen & Sachs, 2012).

While not explicitly using the language of 'urban resilience,' scholars have been bringing ecofeminist literature into conversation with research connecting environmental and physical aspects of urban life and within localized contexts. For example, in an effort to guide future research examining urban environmental health disparities impacting women (e.g., food access), Chircop (2008) incorporated an ecofeminist framework to provide a theoretical lens for systematically viewing socio-economic status, gender, physical urban environments, and oppression. Mallory (2013b) used ecofeminism to interrogate why local, urban food movements have difficulty including a diversity of ethnicities and social economic status (even when thriving in racially integrated urban systems) and why women (a majority of purchasers, farmers, and preparers in the local food system) remain largely invisible within local food movements. As another example, Portman (2014) argues that ecofeminist analytical tools can be used to advance our understanding of localized food networks; furthermore, ecofeminism can be used to advance food movements as a form of inclusive, political resistance that emphasizes the need for citizens to mobilize and demand accountability of the food system at state, national, and corporate levels.

Bringing ecofeminist views into urban resilience frameworks provides several points of complementarity as well as helps to fill some of the gaps that the urban resilience lens does not adequately address. Ecofeminism mirrors several components of the urban resilience framework: critical ecofeminism utilizes social-ecological framing, offers a trajectory for transformational change, and outlines paths for resilience centered in localized actions.

Additionally, bringing in ecofeminist views addresses the inadequacies of the resilience paradigm by using a lens of power: examinations of the current functionality of social-ecological systems and the need for transformative processes are grounded in exposing and evaluating the interrelated oppressions of marginalized groups and the exploitation of the nonhuman natural world (Hunnicutt, 2019). In particular, ecofeminism places a focus on how the global capitalist model (of which our food system is emblematic of) is built on the domination of nature and the domination of othered groups (Hunnicutt, 2019). Furthermore, emphasizing transitions, ecofeminist scholars argue that the circumstances of our current world state require significant systemic transformations (Gaard, 2017). Finally, ecofeminism offers additional insights into the conceptualization of food system resilience that emphasize and highlight diversity, cultural knowledge and tradition, and co-beneficial, community-contextual relationships with the environment (Plumwood, 2002; Gaard, 2017; Shiva, 1989). These considerations address gaps that resilience theory neglects (such as human agency and cultural relationships) and provide greater insights into potential for building context-specific adaptive capacity and resilience (Mbow et al., 2019). Furthermore, by accounting for social diversity and power differentials within social structures, ecofeminism can offer insights in understanding the current food system and in outlining goals of equitable transformations (Portman, 2018). Based on traditional and current practices in women-centered agriculture, ecofeminists argue that a resilient food system supports diversity of plant-species; natural production practices; local, feminine knowledges; decentralized, locally supported agriculture; plant-based eating; and nonexploitative labor practices (Gaard, 2017; Shiva, 2009).

Social-ecological framing. Despite coming from an entirely different disciplinary trajectory in arriving at the concept of social-ecological systems, by situating human beings in ecological terms and nonhuman animals in ethical terms, ecofeminism asserts that social and natural systems are interconnected and cannot be examined or understood in isolation from each other (Gaard, 2017; Plumwood, 2002). Furthermore, critical ecofeminist scholars examine these interconnections through a lens of justice, arguing that social justice cannot occur without environmental justice and vice versa (Hunnicut, 2019; Gaard, 2017). Emphasizing the need to consider justice within resilience scholarship, if certain social groups are excluded, then the system may resilient for dominant (or oppressive) institutions, organizations, actors, but not for marginalized community members; vulnerability of certain groups ultimately makes systems more vulnerable and less just (Sage, 2014).

Transformational change. Importantly, critical ecofeminist perspectives add to the discourse of transformative processes—conversations that are not fully developed or explored in resilience scholarship (Wilson, 2013). As a core tenet, critical ecofeminism explores opportunities for transformative processes that move toward an egalitarian and non-oppressive world rather than continuing along the same path in perpetuity (Plumwood, 2002; Gaard, 2017). Within this transformation discourse and these goals for egalitarianism, there is a push for rethinking current neoliberal economics (which perpetuates exploitative and oppressive practices) (Gaard, 2017; Shiva, 2016; Shiva, 2009) and grounding social transformations in localized movements and economies (Perkins, 2019)

Ecofeminism largely rejects the dominant economic status quo (i.e., neoliberal, patriarchal, colonialist, and corporate control of social and environmental systems), viewing

capitalism as a driver in our social-ecological crises (Gaard, 2017; Shiva, 2009). Ecofeminist analyses argue that the market economy devalues and exploits natural resources (e.g., oil, gas, land, water) and gendered, care labor (i.e., non-market work, such as caring for elderly, educating children, cooking and procuring food) as if both were infinitely available and expendable (Bauhardt, 2014). Illustrating the connection between these exploitative practices, negative environmental externalities (i.e., uncompensated detriments resulting from market-based production and consumption practices) and resulting degradation in natural systems place additional burdens on women on top of their existing, undervalued work (e.g., women walking greater distances to collect water as a result of increased desertification) (Bauhardt, 2014).

Across the board, ecofeminists argue for the need to make a democratic and equity-enhancing transition to a less resource-intensive and more sustainable economy and society, either through reform within neoclassical economic traditions or radical transitions to new systems (Bauhardt, 2014). However, there are a diversity of views in achieving such social-ecological transitions. For example, approaches explore a range of considerations including bioregional autonomy (e.g., promoting ecological independence through reliance on local, renewable resources rather than globalized trade), common land rights (e.g., establishing national land trusts to ensure shared, equitable opportunities for growing food), and people's sovereignty over resources (e.g., allowing the right to produce and harvest food without reliance on or pressure from external markets or need for purchasing proprietary seeds) (Salleh, 2017; Portman, 2018). Other approaches draw from indigenous and ecological models where "waste" is no longer a concept—instead, sustainability is enacted and promoted through repurposing, composting, and reusing former "waste" as new materials and in ways that benefit an ecological

community (Gaard, 2017). Most applicable to urban resilience, others argue that the local context is considered an important starting point for driving just, sustainable economic transitions at greater scales (Perkins, 2019; Portman, 2018). While ecofeminism offers insights into potential transformations, ecofeminist scholars emphasize that solutions should be co-produced by legitimate means through equitably accessible, bottom-up, participatory, and democratic processes, rather than implemented by top-down actors (Gaard, 2015).

Ecofeminist views on resilient agriculture systems. Ecofeminists frame agriculture based on "diversity, decentralization, and improving small farm productivity through ecological methods" as "women-centered, nature-friendly agriculture" (Shiva, 2009, p. 24). In women-centered agriculture knowledge is shared, and plants are considered to be kin rather than property; furthermore, conceptions of sustainability are based on biodiversity, and regenerative practices and processes. Furthermore, feminist agriculture emphases working with nature as agricultural inputs to make agricultural outputs more robust. While monoculture, industrialized agriculture works against natural processes (e.g., eradicating weeds through herbicides), feminist agriculture work with natural processes (e.g., using grasses as nitrogen fixers) (Shiva, 2009).

Application of ecofeminism in an urban resilience framework. An ecofeminist lens is a useful addition in helping to identify ways to build urban resiliency, as a core concept of resilience is organizing systems in ways that can withstand and respond to different shocks or perturbations. Ecofeminism argues that a more resilient food system is decentralized (e.g., acknowledging and supporting local expertise and labor), diverse (e.g., incorporating a variety of genetic variations of plants and food production practices), and just and equitable (e.g., promoting shared knowledge and fair labor practices) (Shiva, 2009). Diversity of crop varieties is

increasingly important in the context of climate change; increased variability in precipitation patterns and increases in temperature portend a decrease in crop yields due to a variety of expected problems (e.g., poor soil and water retention, increased incidence of disease and pests) (Mbow et al., 2019; Jia et al., 2019). Having a robust diversity of plant species increases the likelihood that certain species will be able to thrive under changing conditions (Mbow et al., 2019).

Important in the context of conceptualizing food systems within increasingly dense urban spaces, historically and globally, women have been successful in cultivating diverse plant species within limited spaces, using regenerative agriculture practices, and maximizing nutrient density in processing techniques. For example, in Nigerian home gardens, women plant an average of 18 to 57 plant species, fertilizing soil with household waste (Shiva, 2009; Atkins & Bolwer, 2016). In Sub-Saharan Africa, women cultivate as many as 120 different plant species; in Guatemala, home gardens of less than 0.1 acres have more than ten tree and crop species (Shiva, 2009). A single African home garden might contain more than 60 species of food producing trees, and researchers found home gardens in Thailand with more than 230 plant species (Shiva, 2009; Shiva, 2016). In addition to promoting greater biodiversity of plant species, women-run farms produce more food and nutrition than industrial, chemical farms (Shiva, 2009; Shiva, 2016). Furthermore, women-supported agriculture has been shown to produce greater volumes of food and greater nutrient density, all the while conserving resources (Shiva, 2009; Shiva, 2016). While more labor intensive, methods for food processing have also emphasized conservation and nutrition. For example, hand-pouring rice or milling rice with a foot-operated mortar and pestle

preserves more protein, minerals, and fiber in the rice, as opposed to using mechanical hullers (Shiva, 2009).

Ecofeminist lens in addressing power dynamics of the food system. An ecofeminist lens is needed when considering the current corporate food regime and the structural forces of a globalized food system, as these may inhibit or restrict cities from building food system resilience. Corporate globalization of the food system, driven by capitalist and patriarchal transformations, shifted control of the food chain from women to monopolistic, global corporations. By commodifying and making proprietary natural processes (i.e., seed generation and plant cultivation), the corporate food regime has disempowered women's expertise and labor in the food system as well as privileged a less sustainable, less nourishing, and less diverse system of food production (Shiva, 2009).

Corporatization of the food system has made food a commodity, rather than as a source of nourishment. Because a corporate, capitalist food regime privileges economic returns over all else (e.g., nutrient density and access), food crops will be utilized to their greatest economic potential rather than their greatest societal benefit. For example, if grains are more economically valuable feeding livestock in confined animal feeding operations than feeding people, grains will be sold as livestock feed. If crops produce a higher profit being sold as biofuels than as food, crops will be sold as biofuels. Second, the transformation of the Green Revolution in using hybrid, GMO seeds (which need to be purchased) turns the seed from a renewable resource (i.e., a regenerative product to be harvested at the end of each growing season) into a nonrenewable, proprietary commodity (i.e., something that must be purchased again at the end of each growing season). This reliance on nonrenewable, GMO and hybrid seeds erases the cultural and historical

legacy of women in the food system as well as their expertise as the world's original food producers and promoters of agricultural diversity in food production. As ecofeminist scholar Vandana Shiva stated, "…the worldwide destruction of the feminine knowledge of agriculture evolved over four to five thousand years, but a handful of white male scientists in less than two decades have not merely violated women as experts; but since their expertise in agriculture has been related to modeling agriculture on nature's methods of renewablility, its destruction has also gone hand in hand with the ecological destruction of nature's processes and the economic destruction of the poorer people in rural areas" (Shiva, 2009, p. 18). To avoid the continued suffering of human beings and the collapse of ecosystems, scholars need to incorporate an honest accounting of how elite power structures in a patriarchal, capitalist system have been instrumental in driving ecological destruction at the expense of women, children, people of color, and nonhuman animals and the natural world (Plumwood, 2002; Gaard, 2017). Incorporating an ecofeminist critique in examinations of the food system (and in the conceptualization of urban food systems) allows for an examination of power: who has been disempowered and empowered from current food system structures and how can these power dynamics shift to enable transformative processes.

Gaps in knowledge

Predominant approaches to address the problems associated with the global food system, both in policy and research, have tended to focus on increasing food supply (Rosin et al., 2013). Scholars have largely been critical of these approaches for failing to consider the entirety of the food system (e.g., take account of environmental and social impacts) and for perpetuating and expanding the corporate food system status quo, by focusing on supply and food yields

without being critical of the quality of food being produced, the environmental harms of industrialized agriculture, the exploitative labor practices being employed, and the perpetual inequities in food access despite the per capita supply of food remaining relatively constant (Rosin et al., 2013; Holt-Giménez, 2017; Shannon et al., 2015). As mounting evidence continues to show how our current food systems are inequitable and unsustainable (D'oderico et al., 2019; Shannon et al., 2015; Candel & Pereira, 2017; Springman et al., 2016; Afshin et al., 2019; Mbow et al., 2019; Jia et al., 2019), scholars have been attempting to account for the limitations of supply-side approaches to the food system research, by using a comprehensive framework and positing what characteristics a 'resilient' food system might require and at what level of governance and scale (Viera et al., 2018; Sonnino, 2014)

Because these interactions are complex and interrelated, the food system as a whole needs to be considered when designing and implementing policy and management decisions (Tendall et al., 2015; Gunilla & Olsson, 2018); however, a majority of efforts have focused primarily on issues of supply (Rosin et al., 2013), while neglecting other components of the food system (Tendall et al., 2015; Shannon et al., 2015). Within studies examining food systems through the lens of resilience, a majority focus on resilience of agricultural production and distribution: the ability for small farms to adapt to change and buffer shocks (Darnhofer et al., 2016), the potential for enhancing adaptive capacity through farmers' markets (Milestad et al., 2010); the opportunities for improving agroecosystem resilience in dairy production (Van Apeldoorn et al., 2011); the evaluation of adaptability in natural resource management of upland alpine pastures (Soane et al., 2012); the potential for gardening in building local social-ecological capacity against disturbances in urban food supplies (Barthel, Parker, & Ernstson, 2013); the

diversity of food production practices, alternative and industrial, in building adaptive capacity and improving urban food security (James & Friel, 2015); and the use of ecologically-based agricultural systems in increasing adaptive capacity (Koohafkan et al. 2012). Other food resilience scholarship examines impacts to household food security in the context of community disaster response and/or economic shocks (Clay et al., 2018; Links et al., 2018; Ansah et al., 2019). Efforts have also examined resilience with a focus on improving urban short- and long-term food security by improving capacity to identify vulnerabilities, through collaboration between municipalities and universities (Biehl et al., 2018). In addition to more applied works, researchers have sought to operationalize food system resilience at global or in general terms (Seekell et al., 2017; Tendall et al., 2015; Worstell & Green, 2017) and at urban levels (Vieira et al., 2018) through synthesis studies. However, while helpful in continuing to the develop the relatively nascent field of (urban) food system resilience, these works focus primarily on resilience from the standpoint of improving a social-ecological food system's ability to *respond* to and *adapt* to shocks (e.g., improving functionality of food networks, building social capacity), rather than transformational change.

Without current examples to draw from, the concept of a resilient food system is still largely theoretical, and research accounting for resilience comprehensively (i.e., in terms of environmental sustainability and social equity) is still evolving (Viera et al., 2018). At the writing of the dissertation there does not appear to be the following: i) a conceptualization of food system resilience as articulated by innovative and active urban food organizations and within locally-relevant policies, ii) an identification of vulnerability or risks by a multitude of perspectives (e.g., urban agriculture, economic development, food justice) of those working within urban food

spaces, and ii) a framework outlining opportunities for transformation to a different food system regime, stemming from urban innovations.

Use of frameworks. This case study research, using urban resilience frameworks with the addition of ecofeminist theoretical perspectives in both the data collection and analysis, helps to identify opportunities and impediments in re-localizing food networks at the urban level. In constructing interview guides, questions were framed in ways that prompted interviewees to consider issues of vulnerability of the food system, adaptative capacity, transformation, and justice and equity within the urban context. For example, to prompt considerations of vulnerability, interviewees were asked to discuss their perceptions of social and environmental risks to the food system, with emphasis on how these risks impact (or are likely to impact) food systems in the urban, local context. In terms of adaptive capacity, interviewees were asked to explain how specific plans or policies may have bolstered abilities for certain communities or certain actors to be better able to respond to changes in social and environmental conditions (e.g., improving the ability for the local agricultural community to respond to climate change or drought). To prompt discussion of potentially innovative or transformational strategies, interviewees were asked to reflect on what would be most helpful in improving or changing existing policies/plans and/or the existing food system. To complement resilience, interviewees were asked questions that drove at issues of power and justice. For example, interviewees were asked to discuss how community members were engaged in the process of developing policies/plans (e.g., were there policy advocates or champions, were there oppositional groups, were there barriers to participate) and how the outcomes of policies/plans impact community members differently (e.g., are certain groups harder to serve than others). Furthermore, while

resilience is the primary frame used to organize the data, both of these frameworks were used in the content analyses in a complementary way. For example, issues that speak to ecofeminism and power (e.g., cultural knowledge or cuisine) were analyzed through the frame of resilience (e.g., how do diverse diets and rich cultural knowledge bolster adaptive capacity). Contributions of each frame are explained and discussed within the summaries of each empirical chapter.

4. CASE STUDY SELECTION AND RESEARCH METHODOLOGY

This chapter provides a rationale for using a case study design followed by an explanation of the case study site selection (i.e., Los Angeles County, California) as a paradigmatic case. Following this discussion is an overview of the methods employed (sampling strategies, data collection procedures, and data analysis). Finally, this chapter concludes with a discussion of the ethical considerations of the selected research methods, the implications for the validity of the research findings, and the study limitations.

Rationale for case study design

Food system issues are increasingly being conceived of within an urban dimension (Sonnino, 2016; Siegnor et al., 2018; Siegner et al, 2020) and at a more localized level (Matacena, 2016; Vieira et al., 2018). Furthermore, as climate change exacerbates social and environmental problems and places additional challenges on local governments to respond to sustainability and equity concerns, food system policy approaches are increasingly being set at the local level by innovative organizations and municipal actors and with greater concerns for environmental sustainability and resilience (Sonnino, 2014; Elmes, 2018). While a body of research has examined global and national aspects of the food system (e.g., evaluating trade policies and federal subsidies), research examining the impediments to achieving social-ecological resilience within *urban* food systems is more limited. To examine these issues in-dept, this dissertation implements a qualitative, case study design.

Exploring complex phenomena. Differing from other methods (e.g., experimental or survey design), a case study is an empirical inquiry that investigates a contemporary phenomenon in depth and within real-world context (Yin, 2014). Implementing a case study

design can be an effective methodical approach when studying highly complex social phenomena. By focusing on a specific case, researchers are afforded opportunities for greater exploration of social organizations and processes in real-world contexts (but within a manageable research scope) and for investigations of contemporary events or processes in situations where the researcher has little control over conditions (Yin, 2014). Furthermore, a case study design allows for investigating phenomena where variables are less established in related scholarship. The case study design offers an opportunity for researchers to fill these gaps in knowledge by taking time to identify and then define variables in greater depth, thus refining them for future research and analysis (Yin, 2014).

Because we are interested in developing or understanding key components of building social-ecological resilience with urban food systems, this dissertation uses a paradigmatic case study design. This paradigmatic case method, selecting a site that speaks to likely representative examples that may reflect or mirror general characteristics of a phenomenon, allows for an investigation and an identification of key elements of a phenomenon (Mills et al., 2010; Flyvbjerg, 2006). Using a paradigmatic case is meant to provides insights into broader assumptive and normative understandings of an issue, through contextually specific meanings which render a broader phenomenon understandable through exemplars. In a paradigmatic case study, a selected case is exemplary of a wider set or class of cases (Mills et al., 2010; Flyvbjerg, 2006).

Because the concept of a resilient food system is still largely theoretical, especially within the urban context (Viera et al., 2018), a paradigmatic case allows for opportunities to identify, refine, and define largely theoretical variables (i.e., criteria for resilient food systems, threats/impediments to resilient food systems, and opportunities for food system

transformation). Implementing a paradigmatic case study design allows for an in-depth analysis of how food system resiliency is articulated and conceived by innovative, organizations working in urban food contexts and within locally relevant policy and planning documents. Furthermore, a paradigmatic case study design provides an opportunity to explore and refine possibilities for building food system transformations within a global city, with the goal of guiding future research.

Examining real-world, urban contexts. Case study designs are particularly helpful in situations where boundaries between phenomena and context may not be entirely clear (Yin, 2014). In other words, the context becomes an important aspect of defining the phenomena in question (Yin, 2014). A paradigmatic case allows for a phenomenon to be revealed through the 'showing' that happens when exemplary characteristics are removed and placed alongside the context (Mills et al., 2010; Flyvbjerg, 2006). In other words, we can understand the phenomena more fully because it is contextualized by the selected case characteristics. In the case of this dissertation research, the urban context of Los Angeles County becomes an important contextual factor shaping how food system resilience is described by actors, organizations, policies, and plans. Because this dissertation explores the innovative potential for urban centers to address, define, and respond to complex social-ecological problems—a key component of urban resilience theory—incorporating these urban contextual features is central to the primary lines of inquiry.

Triangulating data and converging theoretical orientations. Another distinctive feature of a case study design is the reliance on multiple sources of data, with data converging in a triangulated fashion to allow for constructing themes across data sets. As discussed later in this

methods chapter, several forms of data (e.g., interview transcripts, policies/plans, and organization content) are collected and then analyzed through triangulation in order to develop a series of prominent, cross-cutting findings. Additionally, case study inquiries benefit from incorporating prior theoretical contributions to guide the data collection and analyses (Yin, 2014). As discussed throughout this dissertation, the research questions, data selection, and data analysis incorporate guidance from urban resilience and ecofeminist theory.

Site Selection

In order for a focused case to provide insight into a broader phenomenon, the site location must be representative of the 'typical' set of values or characteristics tied to that phenomenon, as expected given our prior understanding of those phenomenological parameters (Mills et al., 2010; Yin, 2014). Los Angeles County presents an excellent investigative opportunity as a paradigmatic case study site, due to its characteristics reflective of broader phenomenon previously identified as potentially challenging and supporting transformation within food systems and due to its characteristics that are reflective of broader phenomena previously identified as relevant in social-ecological resilience literature. Los Angeles County is emblematic of characteristics indicating tremendous opportunities for building social-ecological resilience through food and within urban contexts: strong local food economies and regional food production (Vieira et al., 2018), city-level governance promoting narratives of global change (Sonnino, 2014), and strong and active presence of alternative food movements (Scrinis, 2007). However, Los Angeles County also exemplifies characteristics posing tremendous challenges: cultural and ethnic diversity and a diversity of food needs (Gottlieb & Joshi, 2010; Guthman, 2008); extreme environmental challenges and climate change impacts (Mbow et al., 2019);

extreme pressures in developing urban space and conflicting priorities for land use (Siegner et al., 2018), and issues of poverty, social and economic inequality, food access, and dietary-caused disease (Afshin et al., 2019; Siegner at el., 2018; D'Oderico et al., 2019; Elmes, 2018). Using Los Angeles County as a case study helps to reveal how social-ecological resilience within the urban context presents in extremes of both opportunities and challenges. The County of Los Angeles (rather than the City of Los Angeles) was selected to include the various municipalities within the greater Los Angeles Metro Area and the agricultural producers on the urban periphery.

Agricultural activity. Los Angeles County, California (the latter is the most productive agricultural state in the Unites States of America), is situated within a state that leads in terms of cash farm receipts and accounts for over 13 percent of the nation's total agricultural value (California Department of Food & Agriculture, 2020). In 2018, California farms and ranches earned nearly 50 billion USD in cash receipts for their agricultural output (California Department of Food & Agriculture, 2020).

Furthermore, California produces a diversity of agricultural commodities, contributing over 400 types of agricultural products. The top producing agricultural commodities in 2018 included dairy and milk products (6.37 billion USD), grapes (6.25 billion USD), almonds (5.47 billion USD), cattle and calves (3.19 billion USD), pistachios (2.62 billion USD), strawberries (2.32 billion USD), lettuce (1.81 billion USD), floriculture (1.22 billion USD), tomatoes (1.20 billion USD), and oranges (1.12 billion USD) (California Department of Food & Agriculture, 2019). As seen in Table 1 below, California leads the nation in producing a diverse variety of food crops and livestock commodities. (California also leads in production of several seed and oil crops as well, such as alfalfa and jojoba.)

Table 1. Food Crops and Livestock Commodities in Which California Leads the Nation in Production (2018)

Almonds*	Limes
Apricots	Mandarins & Mandarin Hybrid**
Artichokes*	Melons (Cantaloupe & Honeydew* Varieties)
Asparagus	Milk and Cream
Avocados	Nectarines
Beans (Dry Lima Variety)	Olives*
Broccoli	Onions, Dry
Brussels Sprouts	Onions, Green
Cabbage	Parsley
Carrots	Peaches (Clingstone* & Freestone Varieties)
Cauliflower	Peppers (Chili & Bell Varieties)
Celery	Persimmons
Corn (Sweet Variety)	Pigeons and Squabs
Daikon	Pistachios*
Dates*	Plums (Fresh & Dried Varieties)
Eggplant	Plots
Escarole/Endive	Pomegranates
Figs*	Rice (Sweet Varieties)*
Garlic*	Spinach
Grapes (Raisins,* Table, & Wine)	Strawberries
Herbs	Tomatoes
Kale	Vegetables (Greenhouse & Asian Varieties)
Kiwifruit*	Vegetables, Asian
Kumquats	Walnuts*
Lemons	Watercress
Lettuce (Head, Leaf, & Romaine)	

** Denotes that California is the sole producer of 99 percent or more of this commodity*
*** Denotes that hybrid varieties include tangelos, tangerines, and tangors*
Data Source: California Department of Food and Agriculture (2019)

In addition to being located in a rich agricultural state, Los Angeles County itself directly contributes to a robust agricultural economy. In 2017, agricultural production in Los Angeles County amounted to 135,795,470 USD in commodity sales (Los Angeles County, 2017). The top producing commodities were nursery products ($83,387,000), flowers and foliage ($8,000,000), fruit and nut crops ($3,000,000), vegetable crops ($17,300,000), field crops ($14,000,000),

livestock products ($10,000,000), apiary products and bee keeping ($103,500), and forest products ($4,970) (Los Angeles County, 2017).

Political will for progressive social and environmental policies/plans. Political leadership for Los Angeles County and the City of Los Angeles have recently published ambitious plans to promote social and environmental sustainability, with the OurCounty Los Angeles Countywide Sustainability Plan (2019) and Los Angeles's Green New Deal Sustainability pLAn (2019), respectively. Through the plans themselves and through media coverage of their roll outs, political leadership at the county and city level are conveying to the public their interest in bold, innovative visions for addressing climate change and promoting goals of sustainability. For example, Los Angeles County Supervisor Sheila Kuel characterizes the OurCounty Plan as one of the biggest, most ambitious, and most progressive plans in the nation (Miura, 2019). Similarly, City of Los Angeles Mayor Eric Garcetti calls the Green New Deal Sustainability pLAn an ambitious, global model for confronting the climate crisis (City of Los Angeles, 2019). Furthermore, the establishment of the Los Angeles Food Policy Council in 2010 (building from the Los Angeles Food Policy Task Force in 2009) by Los Angeles Mayor Antonio Villaraigosa, indicates a history of local leaders putting forth an agenda to address food policy.

Cultural and ethnic diversity. Considering the importance of cultural and ethnic connections to food identified in the scholarship discussing food justice (Gottlieb & Joshi, 2010), selecting a site within a context that represents diverse ethnicities, races, and cultures is also important in conceptualizing food system resilience. As seen in Tables 2 and 3 below, Los Angeles County is highly diverse with an estimated 48.4 percent of Los Angeles County residents identifying as Hispanic or Latino, 14.5 percent identifying as Asian, and 8.2 percent identifying as

Black or African American. For comparison, with the State of California 60.1 percent of residents identity as White, 38.9 percent as Hispanic or Latino, 14.3 percent as Asian American, and 5.8 percent as Black or African American (U.S. Census Bureau, 2018).

Table 2. Race and ethnicity in Los Angeles County.

Race	Estimate	Percent
White	5,232,835	51.8
Black or African American	828,981	8.2
American Indian and Alaska Native	68,211	0.7
Cherokee tribal grouping	2,811	0.0
Chippewa tribal grouping	338	0.0
Navajo tribal grouping	2,058	0.0
Sioux tribal grouping	664	0.0
Asian	1,460,508	14.5
Asian Indian	92,117	0.9
Chinese	454,797	4.5
Filipino	342,944	3.4
Japanese	99,624	1.0
Korean	215,238	2.1
Vietnamese	96,003	0.9
Other Asian	159,785	1.6
Native Hawaiian and Other Pacific Islander	27,691	0.3
Native Hawaiian	5,396	0.1
Guamanian or Chamorro	3,385	0.0
Samoan	11,322	0.1
Other Pacific Islander	7,588	0.1
Some other race	2,101,084	20.8
Two or more races	386,412	3.8
White and Black or African American	52,141	0.5
White and American Indian and Alaska Native	47,761	0.5
White and Asian	102,395	1.0
Black or African American and American Indian and Alaska Native	11,750	0.1
Total population	**10,105,722**	**100%**

Data source: American Community Survey 5- Year Estimates (2013 – 2017)

Table 3. Hispanic or Latino Ethnicity in Los Angeles County.

Hispanic or Latino and Race	Estimate	Percent
Hispanic or Latino (of any race)	4,893,579	48.4
Mexican	3,728,143	36.9
Puerto Rican	46,760	0.5
Cuban	39,793	0.4
Other Hispanic or Latino	1,078,883	10.7
Not Hispanic or Latino	5,212,143	51.6
White alone	2,676,982	26.5
Black or African American alone	799,579	7.9
American Indian and Alaska Native alone	19,915	0.2
Asian alone	1,442,577	14.3
Native Hawaiian and Other Pacific Islander alone	24,950	0.2
Some other race alone	28,960	0.3
Two or more races	219,180	2.2
Two races including Some other race	13,676	0.1
Two races excluding Some other race, and Three or more races	205,504	2.0
Total population	**10,105,722**	**100%**

Data source: American Community Survey 5- Year Estimates (2013 – 2017)

In addition to diversity of race and ethnicity, Los Angeles County residents are linguistically diverse as well. Including all residents, an estimated 56.6 percent speak a language other than English, with 24.5 percent speaking English less than "very well." Furthermore, speaking to a diversity of cultures, over a third of Los Angeles County residents (34.4 percent) are born outside of the United States, with an estimated 3,478,879 foreign born residents living in the County. Of these foreign-born residents, 91.7 percent speak another language other than English, and 59.4 percent speak English less than "very well" (U.S. Census Bureau, 2018). For context, in the State of California, 44.1 percent speak a language other than English with 18.1 percent speaking English less than "very well"; an estimated 26.9 percent are born outside of the United States (U.S. Census Bureau, 2018).

Environmental and disaster-related risks. According to the Fourth Climate Change Assessment for the State of California, there is very high confidence that temperatures will

continue to warm, with annual average daily maximum temperatures projected to increase 2.5 to 2.7 degrees Fahrenheit over 2006 to 2039 and by 2.4 to 5.8 degrees Fahrenheit over 2040 to 2069. With implications for water quantity and quality and land use, the State expects to experience rising sea levels (very high confidence), declining snow pack (very high confidence), greater intensity of heavy precipitation events (medium-high confidence), increased frequency of drought (medium-high confidence), and increased acreage burned by wildfires (medium-high confidence) (Bedsworth et al., 2018). Furthermore, the Assessment points to high vulnerability for the agricultural sector due to the projections of water shortages and the unsustainable over reliance on groundwater withdrawals during droughts (Bedsworth et al, 2018).

According to the Fourth Climate Change Assessment of the Los Angeles Region (i.e., Ventura, Los Angeles, and Orange Counties along with urbanized portions of San Bernardino and Riverside Counties), the Los Angeles region will see continued warming, with average maximum temperatures projected to increase by 4 to 5 degrees Fahrenheit by the mid-century and by 5 to 8 degrees by the late century. Extreme temperatures are also expected to increase, with the hottest days of the year being up to 10 degrees warmer and the number of extremely hot days increasing (Hall et al., 2018). In addition, while average precipitation is not expected to change dramatically, dry and wet precipitation extremes are expected to increase. By the late 21st century, extreme precipitation events are expected to increase across the Los Angeles region, with certain locations experiencing 25 to 30 percent increases in precipitation on the wettest day of the year (Hall et al., 2018). The region is expected to see approximately one to two feet of sea level rise by the mid-century, with the most extreme projections estimating a rise of 8 to 10 feet of rise by the end of the century (Hall et al., 2018). Finally, projections indicate that wildfires will

increase in Southern California, but the wildfire impacts to the Los Angeles area are uncertain (Hall et al., 2018).

Poverty and food access. An estimated 17 percent of Los Angeles County residents live below the federal poverty line (i.e., an estimated 1.6 million people out of 9.96 million, for whom poverty status is determined). This is higher than the national average at 13.1 percent (U.S. Census Bureau, 2018). Poverty effects fewer residents as age increases, with an estimated 24.0 percent of residents under 18 years of age, 17.4 percent of residents 18 to 34 years of age, 13.7 percent of 35 to 64 years of age, and 13.4 percent of residents 65 and older living in poverty, respectively (U.S. Census Bureau, 2018). Furthermore, nearly a third (29.2 percent) of Los Angeles County households are estimated to be experiencing food insecurity with 11.3 percent estimated to be experiencing very low food security. Of these food insecure households, the majority (67.4 percent) are Latino or Hispanic (Los Angeles County of Public Health, 2017).

High rates of diet-related illness and disease. In Los Angeles County, an estimated 27.7 percent of adults ages 18 years and older are obese and 33.9 percent are considered overweight (Los Angeles County Health Survey, 2018). By race/ethnicity, a higher percentage of Los Angeles County adults of Latino/a ethnicity are estimated to be overweight (35.8 percent), followed by white (34.2 percent), African American (32.5 percent), and Asian (29.5 percent). Furthermore, an estimated 27 percent of adults identifying as Latino/a ethnicity are obese, followed by 32.5 percent, 21.9 percent, and 9.5 percent of adults identifying as African American, white, and Asian, respectively (Los Angeles County Health Survey, 2018). Within Los Angeles County, 11.3 percent of adults are estimated to have been diagnosed with diabetes, and 25 percent are estimated to

have been diagnosed with hypertension, and 26.8 percent are estimated to have been diagnosed with high cholesterol (Los Angeles County Health Survey, 2018).

Sampling Strategies

Organizations. A total of 23 organizations were selected for this study: API Forward Movement; Co+opportunity; Community Services Unlimited; COMPRA Foods; Environmental Media Association; Farm LA; Food Finders; Food Forward; Grow Good; Hunger Action LA; LA Green Grounds; LA Urban Farms; Local Roots Farms; Los Angeles County Farm Bureau; Los Angeles Food Policy Council; Root Down LA; Safe Place for Youth; SEE LA; So LA Food Cooperative; Social Justice Learning Institute; The Farm Project; The Growing Experience; and UC Cooperative Extension Urban Agriculture. In order to include the most actively engaged organizational actors within the Los Angeles food system while also including a comprehensive, representative sample of the types of organizations involved, three primary approaches were taken to select organizations.

Primary selection approach. This first selection approach sought to identify organizations actively engaged with other food-related organizations within the Los Angeles food system network. This decision worked from the premise that organizations in continued collaboration with each other are actively engaged in the Los Angeles food system and aware of challenges facing a variety of Los Angeles communities and community partners, and thus, are better positioned to envision transformational change. Support of these assumptions draw from Gray's (1989) work describing organization collaboration as an important factor in complex problem solving and as a "process through which parties who see different aspects of a problem can constructively explore their differences and search for solutions that go beyond their own limited

visions of what is possible" (p. 5). In further support of this logic, Guo & Acar (2005) define nonprofit or organizational collaboration as organizations working together to address problems through shared efforts, resources, and decision-making; their research suggests that organizations with more formal collaborative relationships tend to be older, have larger budgets, and have greater reliance on government funding (but rely on fewer funding streams). Thus by selecting organizations with greater collaboration, there is the potential for selecting organizations that have broader perspectives on challenges facing the Los Angeles food system, that are more established (in terms of tenure and finance) than other organizations, and that are well-versed in and well connected to government funding structures and associated policies.

Before beginning the process of identifying key collaborators, an initial universe or list of potential organizations was established using an adaptation of 'snowball sampling' or 'chain sampling' procedures. Snowball sampling methods—employed commonly in qualitative research where a non-probability, purposeful sample (i.e., when a sample population is non-randomly selected for target characteristics by the researcher) is desired—involves building a list of participants from one initial contact (Naderifar et al., 2017). The initial contact gives the researcher additional contacts, these additional contacts provide their own additional contacts, and the process continues in a chain-like manner until reaching data saturation (Naderifar et al., 2017).

Using the Los Angeles Food Policy Council as an initial contact, due to its comprehensive vision for food system resiliency and its history in Los Angeles food policy, all organizations listed as collaborators in multiple documents on the Los Angeles Food Policy Council website were

identified as potential organizations to include in this study. Subsequently, the websites for each of these previously identified organizations were reviewed for listed collaborators. If an organization appeared as a listed collaborator on several other organization websites, it was included in this study. For example, the Social Justice Learning Institute was listed as a collaborator by the Los Angeles Food Policy Council as well as by several other organizations selected in the initial list (e.g., API Forward Movement, Food Forward). The adaptation of snowball sampling was reinforced by traditional snowball sampling methods; organizations were considered for inclusion if mentioned as being important collaborators or actors within the food system, by program directors interviewed for this project. (However, for the most part, interviewees mentioned organizations already included in the final list.)

***Secondary selection approach*.** In addition to including well-established, collaborative organizations active in the Los Angeles food system, a second selection process focused on identifying organizations incorporating social innovations by emphasizing economic transactions rooted in building and maintaining human relationships and values rather than price or personal monetary gain (Elmes, 2018). Within the food system, these types of innovative organizations would include organizations addressing growing issues of inequality, food insecurity, sustainability, and health (e.g., urban and community gardens, farmers' markets, Community Supported Agriculture, food waste salvage programs, and food cooperatives) (Elmes, 2018). Thus, in order to capture other organizations not listed as collaborators by the Los Angeles Food Policy Council and subsequent organizations, but represent innovative approaches to addressing the Los Angeles food system, an extensive review of recent news media (e.g., Los Angeles Times), urban planning and policy magazines and blogs (e.g., CityLab) and search engines (e.g., Google)

was conducted. For the review, database search terms included some variation of the following terms: Los Angeles, food, sustainable, urban, agriculture, organization, farm, innovative. Any potential organization was reviewed and assessed for appropriateness based on their scale and scope of operation and whether their mission and values met criteria for social innovation in the food system. Through this process, several for-profit and cooperative organizations not previously identified in the initial search were added to the final list (e.g., Co+opportunity, Local Roots Farm, LA Urban Farms, SoLA food cooperative). In addition, this secondary search reinforced the salience of the previously selected organizations; a majority of these organizations also came up frequently in news media, blogs, and general search engine reviews.

Tertiary selection approach. Finally, to account for organizations integral in helping to develop key policies and plans in the City and County of Los Angeles, a third review included looking through plans/policies for listed collaborators. A majority of organizations listed as being important in helping to shape planning and policy documents through their input, expertise, collaboration, and involvement or highlighted in policies and plans for their contributions to improving the Los Angeles food system were already selected in the primary or secondary reviews. However, two organizations were not found in initial searches, but were listed in the Los Angeles Green New Deal Sustainability pLAn 2019 within the food systems chapter. To ensure that all key organizations were accounted for, these two organizations (Environmental Media Association and Safe Place for Youth) were added to the list.

Interviews. Interviewees were selected due to their involvement with the 23 previously identified organizations. From each, the organization director was initially selected to participate

in an interview. However, in a few circumstances, due to having less familiarity with food-specific programs in their organization or due to a lack of availability to participate, the director of the organization suggested speaking with a program director instead. In these cases, a program director (rather than an organization director) were interviewed in their stead. Through this process, 23 individuals were selected to be interviewed for this project.

Polices/Plans. In order to account for plans and policies that impact organizations active in the Los Angeles food system and that outline a vision for the future goals of Los Angeles City and County, plans and polices were selected in two primary ways. First, in all cases, if a plan, policy, or ordinance was mentioned by an interviewee or listed by an organization on their website or within an internal report, the associated policy document was selected for analysis. (As a result, California state-level and federal-level policies were included, as they were considered relevant to actors/organizations engaged in the local Los Angeles food system.) Second, all Los Angeles City and County level general plans, climate plans, resiliency plans, and/or sustainability plans were included for analysis.

Data Collection

Organizations. All website content was copied and pulled for analysis. Content included text from all webpages (e.g., mission statements and program descriptions), all internal reports and documents provided by websites (e.g., program evaluations), all associated blogs (e.g., recipes), all linked material to news media (e.g., media coverage from a local newspaper), and all linked or uploaded media content (e.g., YouTube videos). All textual content was saved in PDF documents and coded with a unique identifier linking the data to the associated organization.

For video media content, links to videos were saved for future reference and related audio was transcribed and saved in Microsoft Word documents. Because some of the websites provided blog posts going back several years, blog-related text was only pulled if posted after the year 2017. The amount of data for each organization varied; however, the majority of organizations provided significant amounts of text and related documents, allowing for a rich, detailed dataset for analysis.

Interviews. To recruit interview participants, all identified organization directors were contacted via email or over the phone to request their participation. (Some organizations did not have emails listed; in these cases, they were contacted by phone and left a voicemail message with a description of the research project and contact information for following up.) In the case where an organization director did not have a direct email or phone number listed, an email was sent to the general contact information provided, with a request that the message be forwarded to the director. In the case that the organization director identified a program director as being more appropriate to speak to the issues of interest, future recruitment correspondence continued with program directors directly. In all cases, potential interviewees were initially informed of the research goals (in general terms) and then asked to participate either over the phone or in person and at a time and/or location of their preference.

After an initial contact, each organization received multiple follow-ups to invite them to participate. In total, individuals from 12 of the 23 organizations agreed to participate in the study. In four cases, a representative of the organization initially agreed to participate in the interview, but then either stopped responding to emails or referred interview requests to public relations

administrative staff, where requests were not ultimately granted or not resolved. In one case, the organization director declined to participate, due to lack of time and resources. In the remaining cases, no representative from the organization ever responded to interview requests.

For the 12 organization or program directors able to participate, interviews took place over the phone (8 cases) or in person (4 cases). A majority of interviewees elected to talk over the phone, in order to accommodate their schedules. Interviewees were told that no quotations would be attributed to them directly and that data would be analyzed in aggregate terms. All interviews were recorded using a cellular phone; voice recordings were then transcribed and saved in a Microsoft Word document with a unique code identifier to protect anonymity. Interviews were open-ended, allowing participants to elaborate on points and emphasize criteria or information perceived as important or relevant. Questions were directed using an interview guide written to invoke responses that drove at conceptualizations of food system resilience, that helped identify barriers to resilience, and that prompted discussion of potential transformations in the food system. (See Appendix A for the interview guide.) Interviews lasted approximately 60 to 120 minutes in duration and took place over the November 2018 through December 2019 timeframe.

Polices/Plans. All documents associated with plans and policies (e.g., bills, local ordinances, zoning regulations, general plans), were collected and saved for analysis. In situations where a policy was associated with a website (e.g., Champions for Change, CalFresh), text from all webpages (e.g., program descriptions), any associated documents posted on website (e.g., brochures for SNAP Ed), and all linked or uploaded media content (e.g., YouTube videos) was

copied and pulled for analysis. All textual content was saved in PDF documents and coded with a unique identifier linking the data to the associated policy or plan. For video media content, links to videos were saved for future reference and related audio was transcribed and saved in Microsoft Word documents.

Analysis

Content analysis was used to analyze the textual content pulled from three different data sources (organization website content, interview transcripts, and policy and plan documents). These data are summarized in Table 4 below. Content analysis is a common research method used to analyze text data (Hsieh & Shannon, 2005). This method focuses on the characteristics of the text (e.g., framing of certain issues, choice of words or phrases used for communication) with attention to the content or contextual meaning of the text (e.g., Budd et al., 1967; Lindkvist, 1981; McTavish & Pirro, 1990; Tesch, 1990; Hsieh & Shannon, 2005). Through content analysis, language in textual format (e.g., interview transcripts, policy documents) is examined for the purpose of categorizing large volumes of text into a smaller number of categories that convey similar meanings (Weber, 1990; Hseieh & Shannon, 2005). The categorical themes can represent either explicit means of communication or inferred or implied meanings, with the goal to "provide knowledge and understanding of the phenomena under study" (Downe-Wamboldt, 1992, p. 314). As a result of the content analysis process, the content of the text is interpreted subjectively through a systematic classification process of coding text and identifying themes or patterns across datasets (Hseieh & Shannon, 2005). As discussed below, the content analysis process included the initial tasks of focused coding followed by open coding and then ultimately developing categorical themes using triangulation of data.

Table 4. Textual data collected by source.

Data Source Type	Textual Data Collected and Analyzed
Organizations	• Webpages (e.g., mission statements and program descriptions) • Internal reports and documents (e.g., program evaluations) • Associated blogs (e.g., recipes) • Linked material to news media (e.g., media coverage from a local newspaper) • Linked or uploaded media content (e.g., YouTube videos)
Open-ended interviews	• Transcripts
Policies/Plans	• Plan and policy documents (e.g., bills, local ordinance, zoning regulations, general plans • Text from associated websites (e.g., Champions for Change, CalFresh) • Text from all webpages (e.g., program descriptions) • Associated documents posted on websites (e.g., brochures for SNAP Ed) • Linked or uploaded media content (e.g., YouTube videos)

Open coding. In the initial coding process, a short phrase or group of words were attributed to a portion of text to assign a "summative, salient, essence-capturing, and/or evocative attribute" (Saldaña, 2015, p. 3) to selected data. All interview transcripts and a selection of organization content were coded using these initial open coding techniques. Through this open coding process, each sentence or clearly distinguishable section of text were assigned a series of words that characterized the text's core meaning. This open coding process continued until a clear pattern of codes began to emerge, which ultimately allowed for the focused coding process (as discussed below).

Focused coding. After assigning all the interview data and a selection of the organization data unique codes using open coding techniques, repetitious codes used frequently throughout

the process were organized into a focused coding scheme. For example, repetitious codes pertaining to food access (e.g., food deserts, barriers to accessing vegetables, food insecurity) were organized under the focused code of "food access." After developing focused codes from the interview transcripts and a portion of the organization content, the remaining data were analyzed using this focused coding scheme. Text were assigned a code or codes based on the coding scheme established from the open coding process. This focused coding process helps to identify patterns within the text and is a technique used commonly when dealing with large data sets with a high repetition of codes (Saldaña, 2015). In addition to using focused coding, in vivo notes were added to ensure that subtly in the text were not lost in the focused coding process. For example, if text pertained to challenges of accessing vegetables, this text would be coded under "food access"; however, a note would accompany the text summarizing that access pertained to vegetables or produce.

Categorizing themes. After all textual data were coded through open or focused coded processes, resulting codes were organized into categorical themes. Through this process of consolidating and classifying codes in a systematic order, we can identify patterns across the data and develop insights into the meanings behind the identified categories (Saldaña, 2015). Furthermore, using methods of triangulation of sources, by creating categories using all three data sets (interview transcripts, organization content, and policies/plans), allows for developing and establishing consistency across data sets and for bolstering credibility of textual information (Patton, 2014). The categorical themes presented through these coding and synthetizing

processes are presented, with supporting textual evidence, in the findings chapters of this dissertation (Chapters 5, 6, and 7).

Ethical Considerations

Because the majority of data collected and analyzed for this dissertation drew from publicly available information (i.e., posted website content and plans/policies), ethical considerations weighed most heavily in the collection, analysis, and presentation of interview data. Before interviews were conducted, approval for working with human subjects was granted through the Human Research protections staff at the University of California's Institutional Review Board. Each interviewee was asked permission before recording interviews and assured that interview responses would be kept anonymous and confidential. In cases where quotations are used as supporting evidence in the findings chapters, identifying information is removed to ensure that quotations cannot be traced back to a particular source. Additionally, the names of the directors and program directors that participated in interviews is not provided in this dissertation, in order to maintain anonymity and protect the identity of interview participants. After submittal of this dissertation, interview data will be managed in accordance with Institutional Review Board procedures.

Validity

What makes research findings valid in qualitative research is highly contested by scholars within and outside of the broader field of qualitative research (Creswell & Miller, 2000). However, while various opinions are offered, validity in qualitative research generally speaks to the appropriateness of (i) the research methods in answering research questions, (ii) the research design for carrying out the selected methodology, and (ii) the results and conclusions for case

site selection and associated context (Leung, 2015). Researchers must be able to provide a reasonable rationale for their choice of methodology and for ensuring that the phenomena under study is placed within the appropriate social, temporal, or cultural context (Leung, 2015). In addition, the sampling methods should be appropriate for the selected research paradigm and methodological orientation (Leung, 2015). Finally, for data collection and analysis, researchers should be able to bolster and justify the validity of their findings; qualitative researchers commonly use triangulation as a means to establish validity of findings (Creswell & Miller, 2000). Qualitative data triangulation refers to the use of multiple forms of data in developing comprehensive understanding of the phenomena under study (Patton, 2014).

To ensure the validity of the findings in this dissertation, a focused case study design was implemented to provide broader insights into the characteristics of resilient food systems. Furthermore, the site location of Los Angeles is representative of the 'typical' set of values or characteristics tied to that phenomenon (e.g., robust agriculture, prevalence of food insecurity and social diversity) and is representative of the contemporary, social context. By using a case study examination and employing several strategies for purposeful sampling methods, organizations selected likely represent perspectives of actors that are engaged in the Los Angeles food system and are emphasizing social innovations and social and environmental justice; furthermore, the policies and plans selected for analysis are relevant to these organizations in their daily operations and to promotion of urban social-ecological sustainability and resilience. Furthermore, to bolster validity of the findings for this dissertation, multiple forms of data (organization content, policies/plans, and interview transcripts) were collected and analyzed using triangulation, with core findings and categorical themes representing all three data sets.

The corroboration of findings across multiple forms of data promotes validity of findings, because categorical themes were developed through a process of examining and coding multiple forms of evidence collectively, rather than drawing from a single form of data analysis (e.g., relying solely on interview transcripts) (Creswell & Miller, 2000).

Limitations of findings

One limitation to this research is the relatively low response rate for interviews, with just over 50 percent of selected organizations participating for interviews. While it is a limitation that only 12 of 23 organizations participated in an interview, these twelve individuals represented some of the organizations identified as being among the most active in Los Angeles (i.e., identified in at least two of the three of the previously discussed organization selection strategies). Furthermore, the interviewees represented a variety of perspectives of actors engaged in the food system (e.g., food justice advocates, food entrepreneurs and producers, and food policy and planning advocates). Furthermore, interviewees commonly referred to their organization's websites for additional information or in support of their answers to interview questions. While interviews allowed a much richer and more nuanced perspective than organization website content alone, that interviewees commonly referred to their websites for supplemental information during interviews, suggests that key perspectives from non-participating organizations were adequately represented through a review of website content. Furthermore, even with only 12 interviews, data were beginning to reach saturation (i.e., participants were essentially reinforcing the same themes in their answers, with relatively little novel information being discussed outside of unique program or organization characteristics). That being said, a majority of the organizations that did not participate appeared to be somewhat

less active in the Los Angeles food network; it is possible that directors of these organizations might be facing different problems than more established or embedded organizations, and thus have different perspectives for transforming food systems. However, the organizations' content (regardless of interview participation and food system sector) reinforced strikingly similar themes, challenges, and opportunities; it would be surprising if program directors who did not participate held dramatically different views than those who did. Because most of these organizations were short staffed and limited in time and monetary resources, it is incredibly fortuitous that half of selected participants were able to volunteer their time to participate.

Another limitation could stem from the strategic choice to study the perspectives, insights, and presented content of active, salient, and/or innovative organizations in the Los Angeles food system, instead of public officials (e.g., city planners). Part of this decision centers on the need for transformational change over incrementalism and reinforcement of the status quo and food system scholarship that suggests that the experts paving the way for these changes are actively working in their communities, actively collaborating with each other, and emphasizing human relationships and value over economic gains (Elmes, 2018). Furthermore, this dissertation research is informed in part by ecofeminism, which emphasizes the need for a compassionate lens in understanding the impacts of the current food system and a deep commitment to justice (Gaard, 2017). These orientations are likely more pervasive in organizations where staff work with marginalized communities directly. While the inclusion of the perspective of public officials could have added to our understanding of challenges in creating resilient food systems (and could be pursued for future research), these perspectives were not central to research questions and the theoretical arguments that underpin them. Furthermore, many of the local plans and policies

that centered on improving food systems and expanding food access were developed through the continued efforts of the organizations included in this study.

5. EMPIRICAL FINDINGS: DEFINING RESILIENCE AND IDENTIFYING CURRENT POLICY/PROGRAM APPROACHES

"In a perfect world, we would like to be at zero waste. Our goal would be to put ourselves out of business, because nobody's going hungry anymore, it's not an issue." - Interviewee

Prior scholarship has sought to define and operationalize potential or ideal characteristics of more socio-ecologically resilient food systems within urban spaces. Metcalf and Widener (2011) describe a sustainable urban ecosystem as ideally being able to "equitable satisfy the human right to healthy, local, fresh, and culturally appropriate food" (p. 1). Reviews of scholarship and urban food policies tend to reinforce this framing. In a review of 53 articles focusing on components of sustainable and resilient food systems, Vieira et al. (2018) found that scholarship characterizing ideal urban food systems most commonly discuss the need for promoting access to healthy food and improved nutrition. Additionally, discussions of healthful foods are commonly framed in the context of reducing insufficiencies in nutrition (with goals of preventing dietary disease) and in adequately addressing the needs of lower income communities (Vieira et al., 2018). Similarly, after a review of 15 urban food policies established in large cities in the United States, Canada, and Europe, Sonnino (2014) found that municipalities focused on increasing access to food; furthermore, these food policies emphasized equitable access (i.e., affordable and available to all residents) to food that is healthful (e.g., fresh, nutritious, healthy) and culturally diverse. An emphasis on access reinforces previously established definitions for food security, which exists in conditions where there is "access by all people at all times to enough food for an active, healthy life" (Bickel et al., 2000, p. 6).

In addition to issues of access, Sonnino (2014) found that while public health objectives were a large focus for municipal food-related plans, many cities also tied food policies and plans to sustainability objectives, by emphasizing the co-beneficial potential of developing food systems that serve health and environmental goals simultaneously (e.g., protecting water resources and developing soil health). Additionally, Sonnino (2014) found that some municipalities were articulating goals of making food systems more localized in nature, in order to promote environmental benefits (e.g., reduced greenhouse gas emissions and environmental impacts of transporting food great distances). Work by Vieira et al. (2018) reinforces this emphasis, finding that localization of food systems is a common feature of more ideal urban food systems within literature discussing food resilience and sustainability. Furthermore, while environmental components of resilience most commonly pertain to reducing food waste, producing food sustainably and in ways that minimize biodiversity loss are described as ideal (Vieira et al., 2018).

Findings

Analysis of the case study data reveals two primary ways of conceiving of a resilient food system: 1) those promoting equitable, community-level access to food that is sustainability produced and distributed (e.g., without chemical fertilizers or pesticides, locally), healthful (e.g., nutrient dense fruits and vegetables), and culturally relevant (i.e., appropriate to the traditional or cultural diets of community members); and 2) that these characteristics become more difficult to achieve and less prioritized as access becomes increasingly constrained (i.e., economically and geographically). Organizations, policies/plans, and programs use a variety of policy tools and approaches (e.g., market-based instruments, voluntary approaches, and education and

information). Goals of resilience are promoted primarily by increasing access to sustainable, healthy, and culturally relevant food through information (e.g., nutrition education); economic opportunities (e.g., public food procurement programs, job-training); public assistance and food benefits programs (e.g., making CalFresh accessible); community/home gardens and urban agriculture (e.g., establishing gardens at schools); gleaning and food recovery programs (e.g., salvaging and then donating produce); and changing urban food environments (e.g., helping gas stations carry produce).

Defining Resilience

Equitable, Community-level Access. From all the methods used in this study (i.e., interviews, policy/planning documents, and organization documents/information), there was an emphasis of healthy food being equitably accessible to community members and available within the community. For example, the Los Angeles County General Plan argued that "…access to food systems is critical for healthy, livable, and equitable communities" and set goals for encouraging "farmers markets, community gardens, and proximity to other local food sources that provide access to healthful and nutritious foods." The City of Los Angeles reinforced this goal in their Urban Agriculture Incentive Zone (UAIZ) program[1], which highlighted the need for land use that "promotes urban agriculture and increases access to healthy food." Similarly, the Los Angeles County UAIZ[2] statute was "…designed to increase access to healthy food by providing an incentive

[1] The Los Angeles Urban Agricultural Incentive Zone program was adopted by the Los Angeles City Council on June 14, 2017. The program, which follows the State of California model adopted in 2013 (Assembly Bill No. 551), allows landowners to enter into a voluntary contract with the City of Los Angeles to lease vacant properties for agricultural purposes in exchange for property tax reductions.

[2] The Los Angeles County Urban Agricultural Incentive Zone (UAIZ) program was adopted on April 12, 2016 by the Los Angeles County Board of Supervisors.

for property owners of eligible vacant or unimproved properties within the urban areas of Los Angeles County to utilize these properties for small-scale agricultural uses." The Los Angeles' Green New Deal Suitability pLAn (Green New Deal) reinforced the importance of access to healthy food as a primary tenet of its vision statement: "L.A.'s Green New Deal is an expanded vision for our pLAn—securing clean air and water and a stable climate, improving community resilience, expanding access to healthy food and open space, and promoting justice for all—and for the future we have to build on behalf of our children and grandchildren." The Green New Deal further emphasized this point of access, stating the goal to "increase food access opportunities through grocery stores, farmer's markets, urban farms, and food reuse in underserved areas" The Green New Deal went on to emphasize access to all communities, stating

> Access to healthy food is absolutely essential to every family's well-being, happiness, and ability to prosper. Yet it is also a distant reality for far too many communities – a disparity that will only deepen in the face of a changing climate. We cannot build a sustainable city without a secure food supply, and we have to act now to ensure every Angeleno, regardless of means or zip code, can feed their families.

As another example of access as a central issue, the Los Angeles County Sustainability Plan (OurCounty Plan) lists their 10th primary goals as achieving, "a sustainable and just food system that enhances access to afford-able, local, and healthy food." The OurCounty Plan describes this goal further stating that "The County of Los Angeles will leverage its capital assets, public services, and regulatory authority to improve access to healthy food within County boundaries while optimizing its purchasing power and business services to make food production more sustainable."

All interviewees echoed these goals of increasing access to food, even though each had different approaches for meeting this challenge. (These differing approaches are discussed at

length in Chapter 5.) As an example, one interviewee working in urban agriculture noted, "…our whole mission is to grow food to give away, so we're trying to make a little dent in hunger and access to healthy food and understanding healthy food." Another interviewee stated, "I think the primary goal is to increase the ability of people who are low-income to access the highest quality food and the food grown more in line with sustainable methods as anyone else has." Food-organization website content, reports, and media reinforced access to food as being a top priority and goal. For example, Grow Good describes their goals in the following way: "…all communities deserve access to good food, grown in a way that respects people and the planet. We work to create a local food system free from hunger, rooted in equity and access, supportive of farmers and food workers, and guided by principles of environmental stewardship and regeneration." As another example, LA Urban Farms (an urban farming technology provider) describes their vision as helping to spread, "...revolutionary and sustainable aeroponic technology throughout communities so that we can all have access to fresh and healthy food grown close to home."

Equitable access was essentially framed in two related but distinct ways: geographically accessible (e.g., within walking distance) and economically accessible (e.g., affordable). Both components were articulated as necessary in order to address the needs of two key community groups currently not being served by the current food system structure: those able to afford high quality food (e.g., locally-sourced, organic produce), but lacking proximal locations for purchasing this food (e.g., neighborhood cooperative or organic grocer) and those unable to afford high quality produce (regardless of whether or not such produce is available locally). As an example, in a video provided by Community Services Unlimited (a food justice organization) a young woman comments on these economic and geographic issues of access stating "...everyone needs

healthy food, but some people can't access it, or can't afford it, or both, so we started growing our own food to help our communities." When discussed in geographic terms, access was largely framed as serving people at the community level; that is, ensuring healthy food is available within or in close proximity to neighborhoods. When elaborated upon by interviewees, community level access was framed as providing opportunities for purchasing or acquiring food within a mile of walking distance, in order to accommodate those without access to personal vehicles and to keep community members from having to take long trips on public transit. In terms of economic access, interviewees, plans/policies, and organizations described accessible food as being "affordable"; however, terms of affordability were typically not defined further.

Access to healthful food and positive health outcomes. Data from interview transcripts, organization websites, and planning/policy documents generally described "healthful" or "healthy" food as "fruits and vegetables." When offering additional characterization of "healthy" food, organizations, interviewees, and planning/policy documents tended to describe healthy food in the following ways: 'good food', nutritious or nutrient dense, locally-sourced, high quality, preventative of chronic disease, fresh, organic or produced without the use of chemical or synthetic fertilizers or pesticides, and/or recommended by public health literature. Most commonly, interviewees described greater access to fruits and vegetables as promoting availability of healthy food, due to their health benefits. For example, one interviewee stated, "If you have more access to fruits and vegetables, you're more likely to eat more. And that has all kinds of different health benefits." Another interviewee emphasized greater consumption of fruits, vegetables, and grains, and less consumption of meat and dairy as being health, stating

> So, I think we can do with a lot less meat than people are accustomed to eating. That's not to say that I'm saying no one should eat meat or that people don't need it, but again,

> we can do with a lot less than people are typically eating. So, I guess in a nutshell, and probably less dairy too. I think we're way over-focused on eating meat and eating dairy as compared to actual nutritional requirements.

In reference to their Market Match policy, Hunger Action LA discusses consumption of produce as being healthy and preventative of disease stating, “We all need to eat more fruits and vegetables to be healthier and protect ourselves from diabetes, cancer, and obesity.” In addition to promoting consumption of fruits and vegetables, ‘good food’ was a term used by interviewees and organizations to encapsulate food that is nutritious and produced in ways that promote environmental stewardship and equitable outcomes for food producers. For example, the Los Angeles Food Policy Council describes ‘good food’ in their Good Food for All Agenda as being “healthy, sustainable, affordable, and fair.” In their discussion of the Good Food Movement, the Los Angeles Food Policy Council also extends ‘good food’ as considering animal welfare and ethical concerns such as workers rights. Using the framework of ‘good food,’ healthy food is conceptualized as food that is not only healthy for individuals, but healthy for environment and healthy for the workers that produce food. As one interviewee argued,

> And it's really important that all those three things [nutrition, respect for people, and respect for the plant] are held together when we talk about good food, because healthy food that is not healthy for the environment, or healthy food that is not healthy for human beings who've helped make it possible isn't really healthy. So that's the conceptualization that we hold when we talk about good food. But, that said, I'm not a nutritionist, but I have a lot of respect for the science and the evolving science that goes into thinking about what's good for our bodies and what's not good for our bodies.

As another example, the SoLA food cooperative took on this more comprehensive approach to healthy food stating the following on their organization website: “The SoLA Food Co-op will focus on products that benefit the health and well being of its members, the community, and the world.

This means that the focus will be on organic, non-GMO (genetically modified) food that is sourced locally."

In addition to more holistic conceptualizations, interviewees, organizations, and plans/policies commonly described healthy food as being nutrient dense or nutritious. For example, one interviewee stated, "…it's important for them [community members] to have nutrient dense, nutrient rich foods that are going to be more viable for the sustaining of life in their bodies." Furthermore, many organizations, interviewees, and plans/policies emphasized the importance of food being locally sourced or locally grown. For example, Community Services Unlimited describes the importance of local food production in promoting healthy food on their website stating, "Produce begins to lose its nutrients as soon as it is picked. We work hard to harvest our produce on the day we make your bags and to buy from local farmers the day they harvest their produce." Lettuce Grow describes the ideal of "fresh" food developed without pesticides or other additives on their website stating, "Just fresh food - no additives, questionable ingredients, or icky chemicals!" Similarly, The Growing Experience echoes the importance of fresh, sustainably produced food on their website stating, "Our farm-fresh produce is grown using sustainable methods without the use of harmful chemical fertilizers, pesticides, or herbicides." As another example, Root Down LA called for eating healthy, locally grown food and described the Standard American Diet as lacking in nutrient density arguing that, "veggies and fruits that used to come fresh from a farm to our table, now travel halfway around the world and are being treated with chemicals, additives, and colors to make up for missing flavor and extend their shelf-life." When asked what foods were healthy, interviewees also turned to characterizations of healthy food provided by nutritionists, public health officials, and/or

nutrition guidelines and curricula provided by state, county, and federal programs. For example, as one interviewee noted,

> I mean, what is healthy food. I think as an organization, we work really closely with the public health field. And we support and adopt and adapt whatever is the best current thinking on nutrition science coming out of public health. And it changes, and it's updated, and I think that's always important to note.

Another interviewee discussed healthy food as being defined by regulatory agencies, clarifying that, "In our program, so a lot of it [what is healthy food] is determined by the department of Public Health… Healthy eating for them aligns with the Dietary Guidelines of America." A few interviewees were more cautious to categorize particular foods as healthy, but rather focused on access to more options. For example, one interviewee stated, "We're really in the business of creating more options around health, as opposed to being really prescriptive."

In addition to highlighting the needs for food to be locally available, affordable, and healthy, access to healthy food is often discussed as expanding access to better health outcomes and/or healthy lifestyles. For example, the Los Angeles County Climate Action Plan asserted that "…actions to support local food systems will supplement healthy lifestyles throughout the community by improving access to nutritious and locally grown foods." Additionally, the LA County General Plan described access to and consumption of healthy food as promoting "public health and efforts to reduce obesity." The Los Angeles County General Plan also connects access to food to public health outcomes stating the need to design communities that "…provide reasonable access to food systems" arguing that "these factors have a measurable effect on public well-being." Expanding on these goals for access to healthful food to include emotional wellbeing and sustainability, the Los Angeles Green New Deal also asserts that, "Access to healthy food is absolutely essential to every family's well-being, happiness, and ability to prosper."

Sustainable production and distribution. In addition to ensuring that healthful food–and thus positive health outcomes—is accessible at the community-level, the desire to produce food in a sustainable manner emerged across all the datasets. In many cases definitions for, or specific practices within, sustainability were not clearly articulated; however, "sustainable" agriculture was described as an ideal. For example, one interviewee described the mission of the organization as being "to make food healthy, affordable, sustainable, and fair." The Los Angeles Food Policy Council described their vision as being guided by "principles of environmental stewardship and regeneration." In cases where sustainability was not defined, it could be inferred from supplemental materials that goals of sustainability referred to practicing environmental stewardship, ensuring reliable supplies of healthful food in urban centers, promoting general 'sustainability goals' (such as reducing GHG emissions), and/or promoting equitable and healthy working conditions for farm workers and food purveyors. However, most commonly goals for sustainability related to improving environmental conditions through farming practices and/or using ecologically beneficial methods of production.

In other cases where definitions for sustainability were expounded upon, planning and policy documents, organizations, and interviewees gave specific examples for how to sustainably produce fruits and vegetables or practice agriculture through sustainable methods. These typically included using water-saving techniques, incorporating regenerative agriculture practices (e.g., incorporating vermaculture, composting, and/or carbon sequestration techniques), refraining from using synthetic or chemical fertilizers or pesticides, building healthy soil (through planting nitrogen fixers, utilizing vermiculture, applying compost, and using mulch), and/or using innovative urban agriculture practices (e.g., hydroponics or vertical farming). For

example, the LA County General Plan details a policy to support “agricultural practices that minimize and reduce soil loss, minimize pesticide use, and prevent water runoff from leaching pesticide and fertilizer into groundwater and affecting water, soil, and air quality.” Within the same plan, LA County promotes policy goals that account for “innovative agricultural practices that conserve resources and promote sustainability, such as drip irrigation, hydroponics, organic farming, and the use of compost.” The Green New Deal echoes these goals for sustainable agriculture, noting the plan to “develop a healthy soil strategy for the city to support urban agriculture, address carbon sequestration, and increase water capture.”

Organizations also discuss their sustainable agriculture practices. For example, GrowGood describes their practices as, “no-till, regenerative.” Local Roots, an urban vertical farming organization, describes their water saving techniques and unique irrigation system as using “99% less water than outdoor agriculture.” One interviewee described practices for regenerative agricultural practices, stating “That's how we feed our garden [through planting nitrogen fixers, applying mulch and compost, attracting pollinators, and enriching soil with worm compost]. We are completely organic. We don't use any chemical fertilizers and of course, no pesticides, and we don't really need to.” Another interviewee mentions using natural farming practices stating,

> We are really just completely au naturel. We don't use any fertilizers, any chemicals. What we do use occasionally is 50/50 Dr. Bronner's Neem Oil and under the super soaker, when we get the occasional aphid. And that's just a more prolific way to get rid of that kind of infestation. But we don't use anything. We get our mulch from the city donations, and occasionally we've got private donations mulch. Yeah. And our soil is impacted [positively], it's just great, and we add organic matter to keep it rich.

In addition to utilizing certain agricultural practices, the location where food was grown was also considered as contributing to notions of sustainability. For example, the Los Angeles County Climate Action Plan discusses how locally grown foods can provide co-benefits associated

with greenhouse gas mitigation, stating “co-benefits associated with locally grown foods include reduced vehicle miles traveled, as well as displaced carbon-intensive food production practices (if the food is grown organically).” The Los Angeles Green New Deal also mentions the importance of producing food locally for environmental outcomes, stating the need for “building up our local food supply so that fruits and vegetables travel fewer miles to get to our plates, and keeping food from going to landfills through edible food recovery and food scrap composting will decrease the carbon footprint of our food system.”

Organizations also promote the benefits of local food production and distribution; for example, Community Services Unlimited discusses the benefits of local agriculture (as being superior, in terms of nutrition and environmental impacts, to certified organic produce traveling great distances) writing the following on their website:

> Some organic produce is grown many miles away and shipped or trucked from long distances. So even though it is not sprayed, it is still picked before it is ripe and maybe even frozen. Furthermore, the transporting process leaves a significant carbon footprint. Local produce is picked when it is at its peak, so it has more taste and more nutrition, it travels much shorter distances and the environmental impact is significantly reduced. The best combination for your health and for the planet is local and organic/beyond organic.

One interviewee took a more cautious approach to discussing the benefits of local production stating, “I think you can make arguments around ecological resiliency… about the fuel used to transport goods from farmers markets versus goods from California to anywhere else in the United States. But I don’t know if any of that is true.” While another emphasized the importance of keeping food local to keep food from spoiling, to limit burdens on volunteers, and to limit the carbon footprint of food distribution:

> Our model is to keep it within the same community as much as possible. It's not traveling, one, the carbon footprint is small, but also because we don't want it to go bad. The closer

> the better. Also, if the person ... If it's a volunteer picking it up, they don't want to travel from Long Beach all the way down to Laguna to deliver food or whatever.

Culturally relevant. Interviewees and food organizations emphasized the need for access to fruits and vegetables that are culturally relevant and/or to make healthy eating accessible to communities with different dietary and culinary traditions. As one interviewee noted, "...but I think, ideally for us we would want to see more access to locally grown, sustainably grown, culturally relevant produce." On their website, Grow Good reinforces the notion of cultural relevancy stating, "We often talk about food security—whether or not a person has access to enough nutritious, culturally appropriate food to live a healthy life." When discussed further by interviewees, food-related organizations (particularly those with a food justice lens) do not want to impose colonialist considerations of what "healthy" diets should look like on disadvantaged, marginalized community members. They argue that "healthy" food, while defined and updated by nutritional science and public health prescriptions, can be interpreted and promoted differently by different dietary traditions and culinary preparations. For example, when pressed to define "healthy food" one interviewee stated,

> Well, healthy food is culturally appropriate. Like you should be able to get food that you want to eat, not food that's like, "I don't know what to do with this. I don't like this. This isn't something that I grew up with." You should be able to get plenty of fruits and vegetables because those are such a huge part of what makes food healthy or not. And you should be able to get like staples, again, culturally appropriate staples, like rice and bread and whatever that means to you.

Reinforcing this idea, but more explicitly mentioning the importance of promoting healthy food in ways which do not further marginalize people of color, another interviewee said:

> I mean, what is healthy food? I think as an organization, we work really closely with the public health field… And I mean, yeah, I think culturally there's a lot to reconcile, because there's a lot of shame and I would even say racism associated with conceptualizations of

> both healthy food and healthy bodies. And we try to stay out of that, you know what I mean? We really do.

In addition to being careful to frame healthy food in ways which are mindful of different cultural diets, interviewees and food organizations view inclusion of culture and language in promotion of food access as bolstering opportunities to improve equitable access to healthy food (e.g., attending a nutrition education class or a farmers market). Instead of potentially alienating community members by introducing unfamiliar foods in unfamiliar languages, interviewees frame accounting for cultural relevancy as making healthy food more accessible. For example, in the context of providing nutrition education courses, one interviewee stated:

> For our organization, historically, we've also emphasized the importance of culturally relevant healthy eating. So we're not in the business of asking people to change their diets to something that they're not familiar with, but to make healthy adjustments to like traditional recipes or just changing up, like for example instead of getting regular soy sauce, get some low sodium soy sauce. Like that kind of change.

Other interviewees stressed that access to native languages and foods reflecting traditional diets not only increased the likelihood that community members would decrease food waste (by knowing how to prepare familiar foods rather than waste unfamiliar foods), but also make spaces perceived as being less welcoming to diverse patrons (e.g., farmers' markets, gardening workshops) as fostering community. In particular, interviewees noted the role of language in creating these spaces and in making healthy, cultural food accessible. For example, one interviewee stressed the importance of accessibility of language stating,

> Like we're the ones that are offering these workshops… in the languages that they generally aren't offered in. It is part of our mission to be serving these communities specifically and in language service is what is most needed, across whatever service you're talking about, like the language is really important. So it's not just about, cultural relevance in terms of like food products is also in terms of language.

Another interviewee mentioned the importance of making culturally relevant produce accessible at farmers' markets stating,

> ...by hiring bi-lingual staff to operate those markets and by keeping the vendors in those markets culturally relevant to those communities, keeps markets in this space of not being a major agent of gentrification, which a lot of farmers markets can be…

Difficulties and constraints in providing food access

Plans/policies, organizations, and interviewees generally agreed on the components of resilient urban food systems as access to food that is healthy (e.g., fresh, nutrient-dense, sustainably produced fruits and vegetables), culturally relevant, and sustainably produced and distributed. However, as access to these characteristics became increasingly constrained, their importance and prioritization changes, as access to food – basic calories for sustaining life – becomes prioritized instead. For example, if you are diabetic and relying on food banks for food support, the emphasis lies on getting calories to sustain your life, rather than getting access to organic, nutrient-dense, culturally relevant produce or even access to foods that could possibly reverse your disease. If you live in a community with limited grocery stores and an abundance of liquor stores and fast food restaurants, the first priority is to improve access to fruits and vegetables, irrespective of the cultural relevancy or production methods. In other words, organizations with limited capacity (i.e., funding, resources, staff) try to provide the basic access first (e.g., conventionally produced fruits and vegetables, enough calories for survival), even if it means diverging from the holistic conceptualizations of urban food systems resilience as defined in the previous section.

Framing this issue as the "hierarchy of food needs", one interviewee described this process eloquently with the following argument:

> How do we define what healthy food is. Well, nutrient dense is the first thing. But going back to the hierarchy of food needs, where people are in the hierarchy becomes really important too… Healthy food means something different to someone who doesn't have regular access to food. Not healthy food, does not have regular access to food, right? Creating regular access to food is the first priority more than it being a certain level of health or it being organic. I believe that the hierarchy is really important, as an identifier for what healthy food is for people. If I can have access to the food regularly that I need, then I can move up to the next tier of the hierarchy, which is being more particular about the types of food that I have, right? Then getting to the point of having novelty foods regularly because I have regular access to food so much that I have the ability to choose what types of foods I'm going to eat and what foods I'm not going to eat, you know what I mean?

Another interviewee framed this issue in similar terms discussing the need to serve the basic needs of lower-income individuals at the base of the hierarchy or pyramid:

> And although we can't face, we can't completely help them out of the system that is gentrification displacement, we do try to alleviate some of it where there are still options for folks in the base, in I guess low income brackets. Or I heard this term over the weekend, that I thought was pretty cool, but "the base of the pyramid." The people who need it most.

This issue of trying to best serve the basic needs of communities (i.e., the most people as possible given limited resources and great need), can result in programs being cut, even if they support the ideals of resilient, urban food systems. For example, one interviewee discussed the difficulty in sustaining Community Supported Agriculture (CSA) models in economically disadvantaged communities.

While the CSA model provides community members with locally produced, sustainable, healthy, culturally relevant produce, the model – which requires membership fees—is not accessible to community members having difficulty in acquiring basic calories for survival. Instead of continuing to put resources into a CSA program that is providing specialized fruits and vegetables for a smaller segment of the community, an organization may have to focus on providing more basic access to fruits and vegetables to a greater number of community members

first, with the expectation that models promoting better quality produce will eventually become more successful as more individuals move up on the hierarchy of food needs. One interviewee explained this particular challenge stating,

> The thing is though, the [Community Supported Agriculture] program was severely underfunded and under resourced, I should say, and it did not have enough subscribers in order to pay for itself. Come to find out, when you start to look at it, CSAs are not successful in communities like this one. You look at the broader scope of it all, a CSA that is marketed towards a place like Compton or a place like Watts or a place like Inglewood and so on and so forth, are not as successful. Why do you think farm fresh for you, when you look at the delivery areas, what are the delivery areas? They don't got nothing to do with Compton, Watts, or...you know what I'm saying? Because the business model of these types of things, when you look at the hierarchy of the food needs, the folks who are in these communities are on the lower tiers of the hierarchy of food needs. So you have to help to elevate those people to get to the next points for it to even be a viable product for them, so we have to actually scale back on our CSA and to work with other partners to get those folks who are interested in CSAs to work with our partners in order to do that, while we put our emphasis on other parts of the food system that make more sense for where our folks are on the hierarchy of food needs.

As a final example, one interviewee discussed the challenge of serving people on the very bottom of the pyramid: people getting donated food at food banks for sustenance. Food banks rely heavily on donations and cannot necessarily serve needs beyond supplying calories. For example, for patrons with dietary restrictions due to dietary or other diseases, food donation organizations may be unable to fully meet their needs and are limited in their ability to provide food that contributes to conceptualizations of resilient food systems. As one interviewee framed the issue,

> I don't feel like it [that some populations are harder to serve]. I feel like if you're hungry and you're looking for food, the only problem I think or the only issue that I know of… is occasionally we'll have somebody call us specifically and say, "Do you serve people that are on special diets? I'm diabetic and I can only eat this. I'm limited to low sodium. I'm limited to this." We don't have donors that are like, "We only do low sodium food." So, whether a pantry or a food bank chooses to do meals that way, that's up to them. We don't go out and find those people specifically, and we're not giving it to individuals. We can only direct them to different pantries. So, that's the only thing I've come across, is people that are on special diets. Sometimes it's seniors and they can't get out and get a lot of food. They've said, "Meals On Wheels will come, but they don't have food that

> meets my dietary needs. So, where do I go?" So, I think there's limitations as far as that goes. That's the area that I've seen or know of the most, or if you're a ... Sometimes someone will be a cancer patient and they'll be like, "I just had chemo done. I can't eat certain types of foods that will react or make me nauseous," or whatever. So, unfortunately, I don't know anywhere that's designed that way. I would think that any meal services that are out there are probably kind of pricey that do that.

Current policy/program approaches

Information. Regardless of their status (i.e., for-profit, nonprofit, government institution) organizations seek to increase food access by informing community members or clientele about the problems with the current food system (e.g., inequitable access for lower-income communities, decreased nutritional density in food) as well as by providing informational resources for addressing or overcoming these problems (e.g., offering technological solutions to improve urban agriculture, such as vertical towers or warehouses, listing locations of food banks, or explaining the benefits of buying produce at farmers' markets). Organizations often present this information through workshops and classes, written content on organization websites, internal reports, short educational videos, newsletters and fliers, online links to other organizations or resources, and/or through community outreach. In addition to providing information passively (e.g., providing healthy recipes on organization websites), a majority of organizations actively engage community members through free or low-cost workshops or training opportunities (e.g., nutrition, health, and gardening classes). As an example, LA Green Grounds provides workshops and education opportunities to learn organic gardening practices and food preparation (using produce harvested from their teaching garden). As another example, the Los Angeles Farm Bureau provides general information on their website about agriculture in Los Angeles County (water quality and quantity issues, county-level crop reports) as well as participates in AGdayLA (an educational opportunity for Los Angeles area children to learn more

about where their food and fiber come from, the relationship between food and health, and natural resources management and sustainability).

Policies and plans also provide information describing issues with the current food system (e.g., inaccessible access, high rates of dietary disease). As an example, AB 1616 (California Homemade Food Act) describes current inequities in the current food system stating "For decades, low-income and rural communities have faced limited opportunities to purchase healthy foods. Often, without cars or convenient public transportation options, low-income residents in these areas must rely for much of their shopping on expensive, fatty, processed foods sold at convenience and corner stores." Similarly, AB 2561 (which enables homeowners to grow food in their backyards and requires landlords to allow tenants to grow food in private areas, given that certain conditions are met) describes existing problems with the food system environmentally (e.g., risks of water shortages, soil degradation, and pollution), economically (e.g., rising costs of fuel to transport food and importing food from other regions outside of California, thus diminishing local economic opportunities), and in terms of health (e.g., rising rates of obesity and obesity-related diseases). In addition to providing information regarding the current problems facing the California food system, policies and plans also offer possible solutions. For example, AB 2561 presents opportunities for addressing these issues through a shift in practice and policy, by discussing the potential for improving food access (particularly for low-income individuals) and by using resources directed at lawns for urban agriculture instead:

> Lawncare is resource intensive, at no nutritional gain. Lawns are the largest irrigated crop in the United States. In the urban areas in the United States, 30 to 60 percent of residential water is used for watering lawns. In arid and semiarid regions, this figure can reach up to 75 percent. Annually, 67 million pounds (33,500 tons) of synthetic pesticides are used on lawns in the United States. Furthermore, lawnmowers use 580 million gallons of gasoline yearly. These resources could be allocated to more productive activities,

including growing food, thus increasing access to healthy options for low-income individuals.

Aside from passively providing information, policies and plans also state goals to promote information through public information campaigns and public engagement. For example, in the Los Angeles Green New Deal, the City states goals to "amplify community education campaigns on the benefits of healthy soils, biodiversity, and regenerative agriculture."

Economic opportunities*.* As discussed in greater depth in Chapter 6, organizations and interviewees discussed economic barriers to accessing sustainable, healthful, and culturally relevant food. In order to address this barrier, organizations, interviewees, and policies/plans presented a variety of approaches to closing this economic gap in food access: expanding local food entrepreneur opportunities (e.g., legalizing sidewalk vending), providing job training and workforce development opportunities (e.g., training program participants in urban farming and food preparation), and advocating for paying food sector employees a living wage (e.g., establishing government food procurement programs that award contracts to women and minority-owned business and/or suppliers/distributors with union contracts or Fair Trade certifications).

Expanding local food entrepreneur opportunities. For one, organizations and plans/policies sought to bolster and expand opportunities for economic participation in local food economies. Local economic development opportunities (such as supporting urban agriculture, farmers markets, cottage food production or street vending) were frequently cited as ways to improve access to both community members (consumers) and producers, by promoting economic development while also expanding the availability of local food products. In particular, organizations, polices, and plans sought to expand food entrepreneur opportunities

for lower income and historically marginalized communities. For example, the Healthy Neighborhood Market Network program, led by the Los Angles Food Policy Council, seeks to promote economic development in lower income communities while also expanding food access. The program has worked with 1,300 smaller corner stores in Los Angeles thus far. Store participants increase their supplies of healthier food options and produce and receive support with produce management, pricing, marketing, layout and design, and customer service. The program is intended to increase revenues for store owners while expanding produce options for nearby residents. In addition to organizations, plans and policies also express goals to increase access to food through increased economic opportunities for small business owners and entrepreneurs. For example, AB 1616, a bill legalizing cottage food operation in California, states the following,

> There is a growing movement in California to support community-based food production, sometimes referred to as "cottage food," "artisanal food," "slow food," "locally based food," or "urban agriculture" movements. These movements seek to connect food to local communities, small businesses, and environmental sustainability… Increased opportunities for entrepreneur development through microenterprises can help to supplement household incomes, prevent poverty and hunger, and strengthen local economies.

As another example, one of the rationale's provided in SB 946 to legalize sidewalk vending was that "Sidewalk vending provides important entrepreneurship and economic development opportunities to low-income and immigrant communities."

Providing job training and workforce development opportunities. As another example of expanding economic opportunities, several organizations have job training and workforce development opportunities for program participants, to help them find employment, make higher wages, and/or move off of food assistance. As an example, Grow Good's Transitional

Employment Program helps Bell Shelter clients gain job skills and independence through paid positions working on the Grow Good 1.5-acre urban farm. Furthermore, their culinary program (focusing on farm-to-table food preparation) provides eight weeks of kitchen job skills, followed by a two-week externship and help with job placement. Neelam Sharma, Executive Director of Community Services Unlimited, reinforced the importance of job training in her acceptance speech for the 2016 Phenomenal Woman Award stating,

> …one more thing because I mean you could spend all day talking about all of the positive impacts that [Community Supported Agriculture] CSU has on the community. But I think another really critical element is jobs and job training that they provide for residents. So it's not just food access, it's they're really empowering the residents to really take ownership of where their food comes from. Like giving them jobs.

Safe Place for Youth also provides programs promoting food access through workforce development programs. For example, their website describes their opportunities for youth to gain experience in the food sector stating,

> The SPY Community Garden Internship is an engaging and educational setting for youth to develop job skills that can be carried into related professions in the food industry. Through discussions, garden walks, and hands-on work hours, interns witness a full growing season and learn how to care for plants in many different contexts. Over the last 2 years, youth interns have continued on to jobs in landscaping, produce management in grocery stores, restaurants, and more.

A focus on job training through food aims to increase access in a multitude of ways: educating community members and participants in growing and harvesting food, providing access to locally grown food through engagement in urban agriculture, and providing opportunities for community members to enter the workforce with skills in the food sector, in order to purchase food through their earnings.

Paying food sector employees a living wage. Additionally, several interviewees, plans/policies, and organizations called for paying food service workers a living age, citing that a

majority of food sector employees are food insecure and require public assistance for meeting their food needs. Thus, by promoting a living wage through policy advocacy and food procurement contracts that favor fair worker compensation, organizations are also working to promote greater food access. For example, organizations like the Los Angeles Food Policy Council did this by advancing public food procurement programs (i.e., the Good Food Purchasing Program) that favor awarding contracts with large municipal buyers (e.g., the Los Angeles Unified School Districts) to food suppliers that pay workers living wages among other criteria. As another example, both food cooperatives included in this study (SoLA and Co+oportunity) emphasize that cooperatives spend a greater percentage of their revenues on wages, as compared to conventional grocery stores; additionally, SoLA mentions the commitment to source food from companies that follow fair trade and fair labor practices and to source the majority of products locally.

Public assistance and food benefits programs. Many organizations are working to promote access to food by making existing public assistance and food benefits programs (e.g., CalFresh, SNAP, WIC) available to communities that currently qualify as well as advocating for expanding access. For example, organizations use community outreach to encourage eligible families to sign up for public food assistance and engage in political advocacy to expand the reach of existing services. As one interviewee stated, a primary goal is "Making sure that people have ready access to things like CalFresh, WIC and other kinds of emergency food resources and resources for food insecure people." Organizations also work to promote access by pushing for legislation to require that all farmers' markets in California accept EBT and other assistance. For example, one interviewee described the work by the Los Angeles Food Policy Council in

expanding access to electronic benefit transfers (EBT), which is a current method for distributing supplemental nutrition assistance program (SNAP) benefits: “And then the LA Food Policy Council has played a great role in creating a collaborative information-sharing space with the urban ag working group, the recently defined Farmers for All working group… they really pushed the initiative to the City of Los Angeles that all of the LA farmer markets within the city would accept EBT.” On the Los Angeles Food Policy website, the organization points to this success in expanding food assistance accessibility at farmers’ markets as well as their Healthy Neighborhood Market Program (which provides coupons for purchasing fresh produce at participating locations):

> In 2016, LAFPC’s [Los Angeles Food Policy Council] Farmers Markets For All Working Group won a historic policy to require all farmers’ markets to accept CalFresh/EBT, moving the needle from 30% to 100% of farmers’ markets now accessible to low-income families. Through the Healthy Neighborhood Market Network program, we successfully piloted “veggie vouchers” at healthy corner stores, offering coupons purchase fresh produce at participating stores. Over one hundred low-income families collectively redeemed more than $38,000 worth of veggie vouchers in 2017.

The Los Angeles Food Policy Council also advocates for food assistance access, through their Summer Lunch Program for youth, stating the following on their website: “Currently the Summer Lunch Program provides over 220,000 free lunches each summer to children in low-income communities, yet close to 400,000 eligible LA County children miss out on these free and nutritious lunches each year. By raising awareness of the program, the Los Angeles Food Policy Council aims to support LA County with its goal to eliminate food insecurity among children by 2020.” As another example, organizations like Hunger Action LA work to stretch existing CalFresh dollars further by supporting Market Match; funded by the California Department of Agriculture, private donations, and nonprofit organizations, this program doubles food assistance dollars for food benefits recipients, if spent on produce at farmers markets. Hunger Action LA describes the

program on their website stating, “In the Market Match program, people who receive CalFresh (food stamps) will receive $10 in vouchers weekly or monthly (while supplies last) at participating farmers’ markets. Vouchers can only be used on fruits, vegetables and some nuts from certified growers.” In addition to providing additional food assistance dollars, expanding access by increasing locations that accept food assistance vouchers, and advocating for increased access politically, organizations also provide tips for stretching food assistance dollars, through Champions for Change and SNAP-Ed programs; through these curricula, organizations provide strategies for families to maximize their grocery budgets (e.g., buying certain foods in bulk).

Community/home gardens and urban agriculture. Another way these organizations and plans/policies promote access to fresh, affordable, sustainably produced food, is to support the proliferation of urban agriculture, community gardens, school gardens, and home gardens. As one interviewee stated, “so, our program in Los Angeles has sort of a special focus on food and helping underserved communities become more food self-sufficient, helping with school gardens, helping with community gardens.” The rationale is that expanding urban agriculture provides greater opportunity to access sustainably produced, healthy, and culturally relevant produce, by creating greater abundance of locally produced food within urban centers; in turn with expanding the number of urban farmers’ markets, communities have greater access to purchasing food produced locally that is (ideally) representative of their dietary preferences and identities. Furthermore, by providing access to growing food for personal consumption at home or community gardens (in addition to giving people the education and tools to grow and harvest fresh food), households have opportunities to access fresh, sustainably produced produce

(outside of the formal economy). For example, one interviewee explained the benefits of access to gardens saying the following:

> One of the better ways to try to work towards that goal [of increased access to local, sustainable, culturally relevant produce] is actually by that we've seen is helping people start their own community or home garden. So food growing has been, when it's something that we just keep learning more and more towards, because it's still just too expensive or too hard for people to access produce. And so food growing has really been like the best way to try to tackle that.

By creating opportunities for people to grow their own food, organizations are trying to provide subsistence options for communities struggling to afford healthy, sustainable, and culturally relevant produce in traditional grocery stores or having difficulty accessing fresh produce within their communities.

Plans and policies also discuss their goals of increasing access through urban agriculture. For example, the Los Angeles County Sustainability Plan (OurPlan) establishes a goal to "support the use of public and private land for urban and peri-urban agriculture, such as community gardens, by measures such as identifying available public parcels, streamlining permitting and leasing processes, and incentivizing the conversion of vacant property to agricultural use." While much less specific in terms of actionable strategies to expand urban agriculture, community gardens, and home gardens than the OurPlan, the LA County General plan adds to these goals for increasing access through additional spaces for urban agriculture, stating their policy to "encourage farmers markets, community gardens, and proximity to other local food sources that provide access to healthful and nutritious foods" and to "support countywide community garden and urban farming programs." Similarly, the City of Los Angeles also promotes goals to "increase the number of urban agriculture sites in L.A. by at least 25% by 2025; and 50% by 2035" in their Green New Deal.

Gleaning/food recovery programs. Organizations also provide their own forms of public assistance through food donation programs that make produce available to families stating financial need and within lower-income communities. One interviewee described the importance of linking would-be-wasted food with families in need of produce, stating, "There has to be something done about that perfectly good produce to get into the hands of people because at the same time we're still dealing with food insecurity in alarming rates, right? Because I feel like with the amount of produce that is being wasted right now, there are thousands of families that can be impacted in a positive way as far as access is concerned and consumption is concerned." Much of the food donated is collected through gleaning efforts or food donations. Gleaning and food recovery occurs in multiple ways; excess produce is collected from community gardens, from farmers' markets, from wholesale markets, from residential fruit trees, and from restaurants and individuals. Food is recovered and distributed by nonprofit organizations that harvest or collect the recovered food and then distribute it directly to their communities, to their distribution centers, or to identified community partners and nonprofit organizations. As an example, Food Forward and the Social Justice Learning Institute providing a monthly food assistance "pop-up" in the Inglewood community. Food Forward describes the process on their website, stating

> Here's how it works: Early in the morning, Food Forward's Wholesale Recovery Program staff collects surplus fruits and vegetables from wholesale produce vendors in downtown Los Angeles. Then, a truckload of produce is dropped off at the distribution site in Inglewood, including around 8 different types of fruits and vegetables. Food Forward and SJLI [Social Justice Learning Institute] volunteers work side-by-side to sort, clean, and assemble overflowing bags of produce. More than 10,000 pounds of apples, bell peppers, tomatoes, mangoes, plums, peaches – and more! – are distributed, benefitting hundreds of individuals, families, and students in the Inglewood community. This whole process is done in the same day, in just a few hours.

Similarly, Food Finders recovers food from a variety of entities and then makes food accessible at their food pantry or at partner distribution centers (e.g., nonprofit organizations, community centers, churches). Food Finders describes their food recovery process on their website writing,

> Our Food Rescue Program works by linking donated food from hundreds of local grocery stores, bakeries, restaurants, produce marts and more to agencies that feed people in need. Our staff drivers and huge network of volunteers make this happen hourly, point to point, bypassing a warehouse stop to re-sort or re-pack. We distribute an average of 22,000 meals worth of perishable food daily, food that may have been thrown out. This in turns means we are reducing greenhouse gases from landfills, along with conserving the water, land, labor and transportation that go into growing and distributing food. Most importantly, we ensure thousands of people don't go to bed hungry.

Policies and plans also discuss goals for recovering food and getting it to people in need. For example, the Los Angeles Green New Deal states their vision for a city "where edible food destined for landfills is recovered to feed hungry people." To achieve this, the City has plans to develop vendor guidelines that emphasize minimizing food waste and enabling food rescue of edible surplus, with goals to recover and distribute at least 30 percent of discarded edible food.

Changing urban food retail environments. Equipping retail environments with fresh produce is another way that organizations work to improve access to food access, particularly in lower-income communities or in communities with inadequate grocery store infrastructure. Organizations work to improve the community food environment by helping existing stores (e.g., liquor stores, convenience stores, minimarts) to stock and sell produce. Organizations do this by providing technical support to convenience stores (e.g., helping with marketing and pricing) as well as acquiring produce (e.g., at wholesale markets) and then delivering that produce at participating stores for resale. In addition, organizations will help with the physical transformation of stores as well, redesigning storefronts and displays and/or reorganizing inventory. As an example, the Healthy Neighborhood Market Network program through the Los

Angeles Food Policy Council seeks to provide training and technical assistance to small business owners with the goals of helping them improve their businesses, attract new customers and cater to local community members, provide healthy food items and products, and become a part of a community network. In addition to providing technical support for store owners, the program physically transforms the urban environment by redesigning store facades and building exteriors and rearranging and remodeling grocery display and refrigeration sections. Similarly, the Community Markets Purchasing Real and Affordable (COMPRA) Foods program, affiliated with the Leadership for Urban Renewal Network (LURN) and the Los Angeles Food Policy Council, seeks to organize the purchasing power of small stores in lower-income neighborhoods in order to secure better quality and lower cost products from wholesale markets through the leveraging of collective purchases. In addition to organizing collective purchasing power, COMPRA Foods delivers produce to participants weekly as well as provides technical supports and helps store owners market produce and reorganize produce displays. Cooperative grocery stores also seek to change the urban retail environments of lower income or historically marginalized communities, by providing a commercial space for purchasing high quality produce. For example, the SoLA Food Co-op website lists "providing South Los Angeles, and neighboring communities, access to fresh, economical, organic and gourmet foods" within the mission statement. (The SoLA food cooperative is still working to secure a physical retail location in South Los Angeles.)

Chapter summary

To summarize, within a resilient food system, foods are equitably accessible at the community level, sustainability produced and distributed (e.g., produced locally without chemical fertilizers or pesticides, using regenerative agriculture practices), healthful (such as

nutrient dense fruits and vegetables), and appropriate to the traditional or cultural diets of community members. These characteristics are more difficult to achieve and less prioritized as access becomes increasingly constrained economically and geographically. Organizations, policies/plans, and programs incorporate a variety of policy tools and approaches (e.g., market-based instruments, voluntary approaches, and education and information) to target efforts in increasing and improving access to sustainable, healthy, and culturally relevant food. These efforts include providing information (e.g., nutrition education); economic opportunities (e.g., public food procurement programs, job-training); public assistance and food benefits programs (e.g., making CalFresh accessible); community/home gardens and urban agriculture (e.g., establishing gardens at schools); gleaning and food recovery programs (e.g., salvaging and then donating produce); and changing urban food environments (e.g., helping gas stations carry produce).

As seen in Table 5 below, the resilience and ecofeminist frameworks help to identify ways in which characteristics identified as being indicative of urban food system resilience in turn build social-ecological resilience and justice. Each of these characteristics are explained in detail below, using these frameworks to highlight implications for social-ecological resilience and issues of equity.

Community-level. Framing resilience within the community-level context emphasizes social networks/relationships and localized responses. As discussed by Wilson (2013), strong community ties are important for promoting community-level resilience and building adaptive capacity. Furthermore, focusing at the community level emphasizes more localized opportunities for learning and innovation and for incorporating stakeholder engagement (Wilson, 2013). A

focus on the community-level implies a diversity and devolution of power structures (e.g., multiple communities within an urban or regional context) (Sachs, 1992) and an emphasis on localized knowledges, experiences, and values (e.g., value of local expertise and labor) (Shiva, 2009).

Equitable access. Equitable access implies an equal ability for community members, despite an individual's or group's position and power within social structures, to control, maintain, and/or gain benefits (Ribot & Peluso, 2003). Applying access theory (Ribot & Peluso, 2003), equitable access at the community level means community members have the opportunity to control benefits within the urban context. If benefits here refer not only to food, but to grocery stores, information and nutritional information, land, farmers' markets, health, transportation, and other assets of the food system, equitable access gives community members the capacity to control their food environment (e.g., plant food in the parkways) and hold other users accountable for their access (e.g., influence whether public land is used for growing food or parking cars). Furthermore, community members have access to the maintenance of benefits, by requiring that resources or powers be expended to keep a particular set of benefits open and accessible (Ribot & Peluso, 2003). In the context of food, this implies community oversight over how resources (e.g., grant funding, information, schools, taxes, policies) are used to ensure that benefits (e.g., community gardens, food community-cooperatives, healthful food options in built environment) are made equitably accessible for community members. Furthermore, from a critical ecofeminist perspective, equitable access frames food as a *right* to all members of society—regardless of status, gender, race, or identify—rather than a benefit. This framing takes on a more radical approach to locally-focused food initiatives (e.g., food sovereignty), which focus

power within communities to determine their food futures and advocates for a transformation of the predominant corporate, agri-food system (Gottlieb & Joshi, 2010; Sage, 2014; Holt-Giménez & Shattuck, 2011; Portman, 2018).

It is important to note that while urban actors and organizations can envision, define, and outline a more ideal and equitable food system, securing urban food system resilience becomes more difficult to achieve and less prioritized as access becomes increasingly constrained economically and geographically. These additional constraints in economically depressed communities, compounded by lower access environments, make abilities to acquire higher quality, sustainably produced (e.g., organic), and/or culturally relevant foods increasingly complicated and difficult (Gottlieb & Joshi, 2010). Individuals with lower incomes (who are the most likely to live in neighborhoods with an abundance of energy-dense, nutrient-poor foods and a lack of affordable, nutritious foods), face various constraints that make accessing healthier food even more difficult (i.e., difficulties finding sufficient time, energy, transportation, and financial resources to seek out healthier food options) (Walker et al., 2010; Maguire. 2017; Cubbin & Winkleby, 2007).

Importantly, limited access to higher quality foods limits adaptive capacity for community members (e.g., inadequate nutrition leads to dietary-related disease) and organizations (e.g., inability to fully address basic food needs keeps organizations from be able to focus on pushing for more 'resilient' food options). For example, before working to provide the highest quality produce, organizations first work to provide grocery stores in the first place or to help existing stores carry conventional produce or to help community members in need get basic calories necessary for survival. Elmes (2018) reinforced this pyramid of food needs concept highlighted

by interviewees, arguing that “those at the top of the economic pyramid can afford to live in communities with ready access to supermarkets; have the means with which to purchase more expensive, healthy foods such as fresh fruits and vegetables; and have more time and knowledge with which to prepare these foods” (p. 1017). When organizations and individuals are trapped literally or figuratively within the bottom tier of the hierarchy of food needs (i.e., those most basic for human survival), they are trapped in a highly vulnerable position with limited ability to build adaptive capacity or to transform existing systems.

Importantly, Elmes (2018) also asserts that inequitable access to food limits the ability for members to fully participate in society. Without access to nutritious foods, people have greater difficulty in acquiring a good education, maintaining good health, working productively, and building social relationships (Elmes, 2018). As economic inequality in the United States grows, so does the segment of the population that is food insecure; food insecurity (and the resulting impacts for individuals to participate fully in their communities) in turn reinforces inequality. These points highlight that inequitable access to food-related benefits in turn limit access to other societal benefits as well, which not only results in unjust outcomes, but limit the adaptive capacity of the entire urban system and adds to issues of vulnerability.

Sustainable production. Articulating that food be sustainably produced (e.g., locally, with water saving techniques, without the use of chemical or synthetic fertilizers/pesticides, through regenerative agriculture) increases social-ecological resilience by reducing vulnerability. Minimizing the impacts to the environment (e.g., greenhouse gas emissions, water and land contamination, water waste, unsustainable land use) puts less strain on the environmental systems within the urban context, the peri-urban context, and the regional context; furthermore,

qualifying that food should be produced through sustainable practices signals a value for (and perhaps social movement behind) addressing vulnerability of ecological systems at the global level as well. Importantly, the characterizations of sustainable production promote adaptive capacity by emphasizing how sustainable production of food (e.g., regenerative agriculture) improves the urban, peri-urban, and, or regional environment (e.g., building and improving soil, improving water retention) and establishes co-beneficial, social-ecological relationships (e.g., providing habitat for pollinators).

Healthful. Identifying that community members must have equitable access to food that is healthy reduces vulnerability within a social-ecological system by reducing the prevalence of chronic, dietary disease (e.g., diabetes, cardio-vascular disease, hypertension) and the associated economic costs (e.g., out of pocket healthcare costs, public healthcare benefits). Furthermore, a healthier population increases adaptive capacity, because healthier individuals have greater opportunities to live more full, active, happy lives (Elmes, 2018) which has social and economic benefits (e.g., greater employment). Furthermore, a healthier population is less vulnerable to disease (as highlighted by the COVID-19 pandemic). In addition, highlighting healthy food as necessary to build social-ecological resilience reinforces food as nourishment (which values quality and nutrient-density as well as quantity), genetic-diversity of plants (which bolsters adaptive capacity within agriculture), and plant-based eating (which decreases environmental and health impacts of animal-based foods).

Culturally relevant. Finally, ensuring that foods are culturally relevant ensures diversified food varieties (which bolsters adaptive capacity by diversifying food crops) and promotes social-cohesion and community connection (which bolsters adaptive capacity by connecting people

through shared food cultures and cuisines). Furthermore, greater availability of culturally relevant food may reduce food waste, by connecting people with food they are familiar with eating and preparing (which reduces the environmental impacts of food waste, such as greenhouse gas emissions, and thus reduces vulnerability).

Table 5. Conceptualizing Resilience by Theoretical Frames

Characteristics	**Resilience**	**Ecofeminism**
Community-level	• Emphasizes social networks/relationships and localized responses	• Structural diversity/ devolution of power structures • Local expertise and labor
Equitable access	• Ability to acquire, control, and maintain benefits/resources/food	• Just and equitable access to food • Food as a right
Sustainably produced	• Reduced environmental impacts • Improved environmental outcomes	• Benefit environment/ ecosystems • Regenerative agriculture • De-centralized agriculture
Healthful	• Reduced incidence of dietary disease • Less of an economic and social cost • Healthier citizens	• Food as nourishment • Plant-based foods • Genetically diverse, nutrient-dense foods
Culturally relevant	• Diversified food varieties • Social-cohesion and community connection • Reduces food waste	• Diversity of cultural food knowledges, traditions • Diversity of agrobiodiversity

6. EMPIRICAL FINDINGS: BARRIERS TO RESILIENCE

I feel like you're asking me, what disasters do I see coming? I'm not looking, I ain't checking for no disasters. I'm checking in the world. You know what I'm saying? I'm checking to get this shit in check. I'm not checking for any disasters. I mean, people are just going to have to stand up. We've been sitting here saying, "well, gee, we don't have a grocery store." You know? I was like, "okay, well let's get us one, we can do this. Let's make one." What are we waiting for them to come down here and give us the same treatment they give everybody else for?" – Interviewee

Prior research has illuminated various barriers to building more socio-ecologically resilient food systems, both in broader structural terms and in localized, urban contexts. More systemic impediments and threats identified in the literature that manifest more acutely within localized food systems include inequitable access and inequality; these ultimately reinforce and exacerbate disparate food access (e.g., limited grocery stores or healthy food options) (Gottlieb & Joshi, 2010; Walker et al., 2010). For food-related organizations active in addressing food access issues in urban areas, identified constraints to promoting social-ecological resilience include over-reliance on volunteers and economic challenges (Siegner et al., 2020; LeBlanc et al., 2013) as well as difficulties in acquiring land for growing (or selling) healthful food options (Ghose & Pettygrove, 2014; Siegnor et al., 2018).

A variety of forces contribute to lower food access within lower income and/or communities of color, many of which reinforce the observations of food organizations and interviewees included in this dissertation. Many of these forces stem from legacies of economic and racial segregation and changing demographics (known as “white flight” to the suburbs) that resulted in a dramatic closure of inner-city grocery stores (Walker et al., 2010). At the same time, grocery stores have continued to expand in size from an average of 6,000 square feet in the 1920s and 1930s to as large as 60,000 to 80,000 square feet by the 1960s (Gottlieb & Joshi, 2010). Larger grocery store chains tend to concentrate on the outskirts of inner cities and in areas where land

is less expensive and more accessible by automobile travel; this allows larger chains to provide more affluent clientele in the suburbs with parking, larger commercial spaces, and better-quality food (Gottlieb & Joshi, 2010; Walker et al., 2010). Inner-city communities (many of which are lower income and/or communities of color) are left with fewer options for food, particularly options accessible by public transportation (Walker et al., 2010). Unfortunately, due to fragmented land in urban cores that limits abilities for finding appropriate lot sizes for grocery stores and the economic drive for retailers to serve more affluent communities, limited food access in urban centers has persisted (Gottlieb & Joshi, 2010; Walker et al., 2010).

In a qualitative study examining ways to build resilience in non-profit food hubs, LeBlanc et al. (2013) found that a reliance on volunteers and unstable funding sources added to vulnerability of civic-agriculture (i.e., production and consumption practices that occur within communities). More resilient food hub organizations worked to build financially stable revenue sources (through economic partnerships with farmers) to limit the reliance on grant funding and volunteer labor. LeBlanc et al. (2013) found these economic partnerships with farmers to be critical in allowing food hubs to continue to serve their communities. These findings are reinforced by Siegner et al.'s (2020) study of urban farming organizations in the East Bay area of California; in addition to relying on grant funding and volunteers (which added to instability), urban food producers had difficulty promoting resilient food system ideals (i.e., providing access to healthful, affordable food and paying employees living wages) while operating within a larger globalized food economy and in a region of exorbitantly high land and property prices. Siegnor et al., (2018) identified these conflicts in land use and high land costs threats limiting the ability

to make food more accessible through urban agriculture, in prior research synthesizing urban agriculture scholarship.

Findings

Social impediments/risks to promoting resilient food systems include constraining funding structures (e.g., reliance on grants and nonprofit funding mechanisms that deter or delay organizations from their missions); environmental risks (e.g., wildfires, climate change, drought); wasteful production and distribution networks (e.g., routine and extreme food waste); economic and social inequality (e.g., inequitable access to food in lower-income and historically marginalized neighborhoods); competition over space and land use (e.g., gentrification); lack of knowledge (e.g., inability to prepare or grow food); onerous and prohibitive regulations (e.g., organic certification process); lack of political support and recognition (e.g., devoting funding/resources that meet current challenges); economic and logistical challenges for small-scale farmers (e.g., competition with conventional grocery store prices); and reliance on volunteers and unpaid labor (e.g., recruiting volunteers to carry out programs).

Constraining Funding Structures

While interviewees pointed to any amount of funding as being helpful, an analysis of the transcript data indicates that the uncertainty inherent in supporting an organization through inconsistent funding sources and the reliance on grant funding from state, county, and federal agencies and other private organizations may hinder food-related organizations in their ability to act in innovative, flexible, or collaborative capacities. First, the process of acquiring grant funding is time-consuming and resource intensive. Organizations are often short-staffed or stretched thin; time spent on acquiring funding is less time that can be directed at improving food access

and working in communities. Second, the reliance on grant funding may result in program directors taking on projects less related to their missions in order to pay their staff. While important for retaining and compensating employees, taking on less directly appropriate projects might delay or distract organizations from working toward their core goals. Third, grant providers (rather than community members) select which projects are worthwhile for funding and have varying degrees of influence in how funded programs are ultimately carried out. As a result, program directors often have less flexibility in their abilities to meet community needs. This theme is especially salient when federal, state, and county funding is tied to government issued curriculum (which might deviate from organizational goals and require language translation and content adaptation for community use). Fourth, despite the strong social network of food-related organizations in Los Angeles (as discussed in Chapter 7), the competition for limited funding opportunities might deter inter-agency collaboration and instead promote competition.

Process of applying for grant funding. Several program directors interviewed discussed the challenge in deciding whether to apply limited resources (staff, time, funding) to acquire additional grants or abandoning grants altogether to rely on volunteers and donations to meet organizational objectives. Several interviewees discussed how the time and energy spent on chasing funding detracted from the opportunity/time to engage with their organizations' missions more fully. With limited staff and resources, spending time trying to maintain funding or find new funding structures detracted from time spent organizing the community, working in gardens, or promoting policy. As one interviewee who had decided to rely solely on volunteers stated,

> …I don't have to worry about losing a grant or renewing it and I've actually always been that way. I'd rather scrounge for things that are left on sidewalks or thrown out and make

> do and reuse things, and it's part of my ethics as well. Rather than looking for more money to spend and using my energies that way.

Reliance on grant funding. Interviewees often discussed the challenges in relying on grant funding, characterizing the process as mired in concessions. Program directors may be caught between meeting their organizations' mission statements and meeting payroll. Framing this issue as the 'non-profit industrial complex,' some interviewees from non-profit organizations felt pressure to bring in grants that would provide funding for their employees, even if these grants did not align fully with the organizations' mission or goals for innovation. For example, organizations might rely on smaller grants tied to discrete projects with clear project deliverables (e.g., providing technical support, such as training or workshops) in order to keep staff, even if these programs do not necessarily tie in with broader organizational goals (e.g., building community engagement or engaging in policy advocacy work). As one interviewee stated, "I think there's always this sort of balancing game that you play as a nonprofit between meeting your contract or your grant goals versus your mission, your organizational goals." As another example, a different interviewee said,

> But coming back to the non-profit industrial complex, sometimes you're put into the position to have to make hard decisions because in order to keep the work alive, the recesses are necessary in order to get you. What does that mean? I'm doing all this great work in the program here going on, but in order to meet payroll you end up having to take up on some of these other grants that are a little bit less related, they're still related to the work but they're less related to the direction that the program is in but you do those things and knock them out rather it be community assessments or maybe technical assistance with another organization or trainings, stuff like that. That take away time, or people power, or people time that could be driven to the mission or the vision that we're doing over here in order to help sustain the things that are going on for the organization as a whole. I think the need to have to do that is really frustrating at times. Because if it ends up being too much you could lose your way and what you're trying to get achieved. But it also because you do that at the best of your ability and it becomes something that's really good, folks look for that too. You'd never want to lose the vision of the mission

> because of the side projects, so that's definitely one thing that can be very difficult at times.

Constraining influence of funders. Non-profit funding structures may limit local, community-level innovation by tying bottom-up programs to top-down initiatives. For example, interviewees mentioned feeling constrained by grant language or program requirements; additionally, organizations' abilities in achieving visions for resilient food systems could be limited if a grant does not explicitly support their mission in the funding conditions. While organizations might be viewing problems in a more holistic sense, funders may have more specific, concrete goals. For example, one interviewee discussed how funding structures define approaches differently, stating, "Then on the environmental side, yeah, I mean, we're always looking at the broader sort of systemic factors and I don't know, like our grants defined it differently, but we do, there's the food growing piece, but we also look at like access to health in terms of physical activity in terms of the air that we breathe and access to green space and that kind of stuff."

As another example, one interviewee described the challenges in grant language constraining organization actions stating that,

> ...but I think, ideally for us we would want to see more access to locally grown, sustainably grown, culturally relevant produce. And that's tough, it's tough to achieve. Like we're only able to do the subsidized or free produce distribution when we'd get donations, from like a corporation or from individual donors or from a grant that allows it.

Furthermore, reliance on government-provided grants may inhibit flexibility in approaching food system resilience, by requiring organizations to abide by government curriculum. This limits capacity for transformational change and resilience in two ways: i) government-provided curriculum (e.g., federal nutrition guidelines, SNAP-Ed, Champions for Change) does not always support the tenets of resilient food systems as identified by interviewees and promoted by Los

Angeles food-organizations, policies, and plans (i.e., promoting equitable, community-level access to food that is sustainability produced, healthful, and culturally relevant), and ii) government-provided curriculum does not always adequately account for diversity (in terms of language and recipes), requiring community-level organizations to devote limited resources to translating and adapting culturally relevant foods to federal, state, or county guidelines.

For example, consumption of dairy and meat products is promoted by federal and state level curriculum as being part of a healthful diet. Both the SNAP-Ed and Champions for Change curriculum suggest that families purchase low-fat and fat free milk products and animal proteins; however, Los Angeles food organizations, policies, plans, and interviewees either did not mention dairy or animal proteins at all, but rather emphasized eating produce and healthy staples, or indicated that people need to consume fewer or no dairy and animal products. As an example, the OurCounty sustainability plan lists the goal to "promote plant-based menu options through nutrition and food procurement policies in food service settings such as County facilities, hospitals, higher learning institutions, school districts, jails, and other food settings." As another example, AB 479 seeks to establish the California School Plant-based Food and Beverage program, which would authorize local educational agencies to apply for funding for plant-based food and milk options.

Furthermore, while both the SNAP-Ed and Champions for Change websites encourage families to attend farmers markets and buy seasonal produce if possible, food purchase guidelines emphasize that families buy frozen or canned vegetables to save money and to increase the ability for storing food over longer time frames (as opposed to throwing food away due to spoilage). While still promoting consumption of vegetables and fruit, the emphasis on

buying canned/frozen produce does not fully support the promotion of accessing and consuming *fresh* produce. Finally, SNAP-Ed and Champions for Change websites do not mention the importance of eating foods produced sustainably (e.g., through organic practices).

Results of the data analysis suggest that government-level curricula especially struggle with being language sensitive and, thus, inclusive of cultural or traditional foods. The Champions for Change website presents testimonials from program participants which suggest that Latino/Latina foods and Southern (traditionally black or African American foods) are inherently unhealthy; the testimonials, from a Latina mother and a black mother and her daughters, stress making "new traditions" and adopting different diets. For example, 'Champion Mom' Rosalia P. states, "As a Latina I used to love the stuff that wasn't so great for me and so I had to learn how to cook differently and I had to learn how to add different ingredients to my food. And it just, it starts to get easier as you go, as you start learning what is good for the family." Similarly, Dashanae (daughter of 'Champion Mom' Angela D.) discusses the need for changing their traditions, stating,

> We grew up on fried foods and then you notice that once you get away from that we had all this extra energy to get up and just really do stuff. Get up early instead of late, you know because that fried food, that heavy food, that southern food, we used to do it really, it could weigh you down… That was kind of our tradition, like we, like everyone brings fried chickens or their favorite meals but now we're kind of doing sort of a health thing, we're kind of changing our traditions… We've changed from the fried chickens and more vegetables now and everyone's kind of getting involved and no more heavy foods, let's do lighter foods, like salads, it's becoming a new tradition. We've also stopped drinking soda so much. We drink a lot more water, a lot of fruit juices, a lot of vegetable juices. That's what we've done. It's helped a lot actually.

Reinforcing these notions that certain cultural diets are unhealthy, the Champions for Change website provides a testimonial from a pediatrician who encourages participants to try food that is different from their cultural diets stating,

> Try some new fruits or vegetables, maybe something that is different from culturally what you're used to. Maybe something that you discovered that you never knew you really liked. I talk to them about making one change, one thing at a time, and then once that becomes a habit, then move to the next change.

Instead of presenting ways that diverse participants can adopt their own cultural diets in healthier ways (i.e., decolonizing traditional diets through different food preparations), the Champions for Change curriculum frames cultural diets as inherently unhealthy and encourages participants to adopt new traditions and try food outside of their food cultures. This is in direct opposition to the position of a majority of Los Angeles food organizations, program directors, and local plans/policies, which promote access to culturally appropriate foods. Requiring organizations to adopt these curricula restricts them to teach and encourage dietary guidelines, which do not fully compliment the goals of access to resilient food systems and may restrict ability for organizations to teach nutrition education in more innovative ways.

Aside from challenges in framing dialogue surrounding cultural diets, government-provided curriculum does not adequately account for diversity (in terms of language and recipes), requiring community-level organizations to translate and adapt federal, state, or county guidelines to be culturally relevant for community members. These changes to make curriculum relevant to community members places additional burdens on program directors, particularly those serving diverse communities. As one interviewee stated,

> …I'm going to refer back to the fact that since we're county-funded we have to use approved government curriculum. And none of that curriculum was designed specifically for [our] communities. So we're constantly having to adapt it and translate it. And that is sort of an extra burden on us to do all that. And so, I think, in general, just more curriculum resources services that are designed by and for [our] communities would definitely help things. And in that design, including the cultural relevance and the language, the translations, and interpretations is super important.

However, it is important to note that while funding structures might create additional burdens in providing culturally relevant curriculum, other agencies and grant structures might be instrumental in bringing some of these issues surrounding cultural relevancy to the fore. As one interviewee noted, “Then it wasn't until this most recent grant or contract that we received from Department of Public Health that we sort of established a whole program focused on the culturally relevant nutrition education.”

Promoting competition versus collaboration. A few interviewees framed funding structures for non-profit organizations as not supporting collaboration, but rather inciting competition across groups. This may create a hesitancy in organizations to share data, program models, and other successes that competing organizations could use to apply for their own separate grants. As one interviewee described,

> …if you're a non-profit you have to get funding. So now, we're all competing for the same dollar… Now, there's a few places that are trying to get non-profits, that are funders, that are trying to get people to collaborate, which is also complicated, too because, "Here's the money, now split it or figure out how you're all going to use it." That gets complicated as well.

Environmental risks

Programs/policies, organizations, and interviewees all identified a series of environmental risks threatening the resiliency of the Los Angeles food system: warming temperatures and climate change; limited water supply and drought; bacterial disease and pest outbreaks impacting crop yields and food supply; natural disasters resulting in a breakdown of food distribution infrastructure; temperature variability (e.g., colder winters, warmer summers); flooding; fires; poor air quality (due to smoke or dust conditions); urban heat island and limited tree canopy/cover; poor soil health; reclaimed water and waste water runoff; urban and rural

contamination of ground water supplies (e.g., nitrate plumes); fungal disease carried in dust (due to arid, drought conditions); sea level rise contaminating coastal freshwater aquifers with salt water; changing seasonal patterns; and foodborne disease outbreaks due to rising temperatures (e.g., salmonella).

While the identification of environmental risks facing the California food system by organizations, interviewees, policies, and plans is comprehensive (as listed above), the most salient threats to food systems (i.e., the most commonly discussed environmental risks) include climate change, variability in temperatures and increased temperatures, drought and water scarcity, disease and pest infestations, flooding, and wildfires. These environmental risks are largely perceived as threatening food security (e.g., crop failures), human health and wellbeing (e.g., wildfire smoke causing unsafe conditions for farmworkers, urban heat effects and heat waves impacting community members, increased temperatures increasing risks of food spoilage and food-borne illness), and economic instability (e.g., economic losses for farmers and small business owners selling produce).

Environmental risks, such as climate change and drought, are framed as increasingly problematic challenges facing the capacity for continued production of food in California; furthermore, these challenges are characterized as posing incredible risks to food security. Food security was largely discussed in terms of addressing the food needs of communities in California; however, organizations, plans/policies, and interviewees did discuss larger scale impacts of environmental hazards. For example, interviewees, organizations, and policies/plans emphasized how climate change, rising temperatures, and temperature variability is likely to negatively impact the ability to produce food globally, in California, and in the greater Los Angeles region.

As one interviewee noted, “And then on the environmental side, I mean, climate change is the biggest threat to the resiliency of all of our food systems, regional and global.” Another interviewee reinforced climate change as issue stating, “Yeah so from an environmental standpoint, yeah you got the climate change is a very big problem that we have to figure out how to adapt to because I think we're well past the point where we're going to change it, we have to adapt and create systems to make sure that people can continue to have the access if not more within the way things are going now.” As an additional example, another interviewee discussed water scarcity as being an environmental threat facing the food system stating, “I think water is going to be, in the future, the huge challenge to us... I think water is going to be the challenge because there's going to be less water falling from the sky and we're going to have to make choices.” Another interviewee echoed these concerns stating, “I mean, I think we're actually seeing risks in terms of drought and the sort of climate impacts on farming.” Framing the risks that pests and water shortages pose to production of fruits and vegetables as not only challenging the food supply for local communities but for global markets, another interviewee reinforced these concerns of climate change impacts stating,

> ...we actually will run into quarantines, where there are pests on the trees, and we're not able to harvest any fruit, because we can't risk giving the fruit out or moving the pest from location to location… We have also been talking about climate change and what that will mean for the production of fruits and vegetables. California is still one of the largest agricultural states in the country. With droughts and other natural disasters, there's a lot of things that could be a risk to our supply...

Emphasizing similar concerns, as another example the Los Angeles County Community Climate Action Plan (2015) discusses how climate change exacerbates factors decreasing crop yields (e.g., changes in growing seasons and specifies distributions, such as differences in pests and weed

species); as a result, food prices can increase and exacerbate conditions of food insecurity. Food Forward also discussed the implications that climate change will have on food security, stating the following in one of their blog posts:

> Besides geographic and economic inequality, there is another looming threat to our global food security — the climate crisis. Climate change affects our agricultural system in many ways and threatens to cause significant decreases in crop yields. Firstly, a warming climate means changes in temperature, which leads to an increased risk of heat stress. Heat stress causes plants to conserve their energy, and put less of it towards growing and reproduction. Hotter temperatures also increase evaporation from both plants and the soil, negatively impacting the moisture content in plants. Another key aspect of climate change is more extreme precipitation—and for agriculture, drought is a huge risk. Rising temperatures will cause soil to dry out, and reductions in precipitation will mean that there is less rain when it is most needed. More extreme precipitation patterns may also result in more intense and frequent flooding in certain regions, which can destroy crops and devastate farming communities. Sea level rise will contaminate coastal freshwater aquifers with salt water, affecting agricultural production in those regions. And a changing climate means changing seasons and patterns—disrupting the cycle of agriculture.

In addition to discussing challenges for regional and global food systems, interviewees, plans/policies, and organizations foc used on the environmental challenges for farmers in the Los Angeles region as well. As an example, one interviewee discussed how temperature variability, excess precipitation, and fires challenge the ability for regional farmers to grow food, stating

> Yeah absolutely we're in the midst of [experiencing climate change impacts] already. You know the fires, this has been a chilly winter, we've gotten more rain I guess this year than we have in the last four or five years, the temperature shifts and stuff makes it really difficult to grow food. I don't know what's happening in the Central Valley as far as that's concerned but in LA County for local growers, that's something to always take into consideration.

These environmental risks in turn create economic instability for farmers and the organizations that rely on them. As one interviewee stated, “So that [environmental disasters and crop damage] definitely effects the economy of the farmers market, both from the farmers’ perspectives, but also, we are a non-profit we are on a strict budget, we rely on the fees that we

get from our farmers to be able to operate and grow our programs." An interviewee went into greater detail in describing the devastating impacts that recent fires and flooding have caused for farmers in California, resulting in losses of equipment and mature crops in addition to posing safety hazards for farmers working in field during times of poor air quality (due to fires) and in navigating road closures and flooding when trying to transport products to markets:

> The fires and the floods in the last few years both impacted harvesting for the farmers, like a lot of farmers did not want to put their farm workers in the fields because of the unhealthy air quality. Some of our farmers had land that was burned or destroyed in the fire, or their equipment was destroyed in the fires or the floods. Some were unable to come to market because they would have to drive through fire or flood zones, so… or freeway closures for extended periods of time meant that even if a farmer could get to the market, they would have to take like a mountain highway that was often more dangerous to drive with, in their kind of vehicles, so like big vans or trucks. There was crop damage as well. One of our farmers had, their entire field of birds of paradise burned down as well as their home too. Another one of our farmers had one of their cherimoya trees that they had invested a lot of time and money into was burned and destroyed. Another one of our farmers, their avocado and citrus fields were… so one burns faster than the other, citrus and avocado. I think citrus field burn faster than avocados, so the avocado trees were spared but the citrus wasn't. And especially when you are talking about trees, that just takes a long time to rebuild.

Increasing temperatures were also discussed in relationship to smaller businesses having difficulty selling produce, with higher temperatures impacting the ability to keep produce from spoiling and impacting local residents' ability to walk to corner stores in extreme heat conditions. As one interviewee described,

> This summer is just so hot that our sales have dropped quite a bit. They're picking back up again, but with the heat wave, if a store does not have refrigeration, you can't expect them to buy from us, or buy from anyone for that matter. And also the end consumer, because corner stores are not one of those where you have a big parking lot and you could drive up to the door. So corner stores are a pedestrian business where you have to walk up to the store. So it's too hot for locals to even walk over to the corner of the store sometimes. So yeah, because stores have reported less foot traffic.

Economic and social inequality

Interviewees and organization websites discussed several ways in which economic and social inequality threaten resiliency of food systems: racist, prejudiced urban planning legacies (e.g., redlining) that have left lower-income communities of color with a built environment that limits access to food; decreases in services and grocery stores in historically marginalized neighborhoods, as opposed to increased access; higher rates of diet-related disease in lower-income, historically marginalized communities with limited food access; difficulty for community members with economic hardships to engage in political processes and improve communities; mental health, disability, and housing insecurity exacerbating food insecurity; economic insecurity (and the need for working multiple jobs) hindering ability to engage in healthful food access programs (e.g., nutrition education workshops); difficulties for immigrant communities to access food economies and food assistance; economic hardships and limits in education making it more difficult for community members to take time/effort to eat healthy food and cook using healthy preparation techniques; and economic insecurity and low wages for food industry workers. Collectively, these impediments inhibit food system resilience in the following ways: 1) perpetuating a local, built food environment which is insufficient and unjust, 2) creating a citizenry unable to actively engage to improve personal health outcomes or community-level changes, and 3) enabling (explicitly or implicitly) food-related injustices against vulnerable groups.

Perpetuating a local, built food environment which is insufficient and unjust

Particularly in interviews and organization information, there was a discussion of how the built environment limits food access and services in lower-income, historically marginalized, and

lower-income communities of color. South Central Los Angeles frequently came up as an example, with interviewees and organizations arguing that the physical surroundings and infrastructure do not allow for community members to access healthy, culturally relevant, and sustainably produced foods, leading to higher rates of diet-related disease and hunger in lower-income, historically marginalized communities. For example, one interviewee remarked, "So whether it's health, we're talking about health disparities facing communities of color, that obviously is related to access to food and food insecurity." When discussing this relationship and describing the built environments, interviewees and organizations pointed to a racist, prejudiced history of redlining concentrating lower income individuals, an underinvestment in grocery store infrastructure in lower-income communities, and an inadequate public transportation system that further disadvantages residents within these communities by keeping them from accessing high quality food available in other neighborhoods and/or imparting unreasonable travel burdens (e.g., making economically stressed residents use even more of their limited time).

Built environments. Many characterized the built environment of lower-income and/or communities of color in Los Angeles as being qualitatively different than other communities, in that the surroundings are not conducive to promoting equitable food access. As one interviewee stated, "So when you have an economically depressed community like Inglewood, or like Compton or like Watts or like any of them, when you walk around those communities you see that the built environment is not conducive to healthy lifestyles." As another example, Neelam Sharma of Community Services Unlimited discussed differences in the built environment in her acceptance speech for the Phenomenal Woman Award in 2016, stating "I don't know how many of you have spent time in neighborhoods like South Central Los Angeles, but they look different,

they feel different, and I have to say that that is something that I learned when I first moved to Los Angeles…. we live in a first world country where there are third world conditions in pockets, like South Central Los Angeles." As another example, an interviewee discussed the disparity of food access in lower-income and communities of color, stating "Then we think about who lives in neighborhood environments that don't offer fresh and healthy food options, even if you have economic means. And that's going to be by and large, people of color including affluent or middle-income people of color live in food deserts." One interviewee noticed the difference in the food environment after moving from another neighborhood, stating "I had to move to South LA from Hollywood… We [previously] shopped at Whole Foods, and Trader Joe's, and we bought organic food, but they didn't have those down here in this neighborhood." The Los Angeles Green New Deal alluded to differences in food access, depending on neighborhood stating,

> Access to healthy food is absolutely essential to every family's well-being, happiness, and ability to prosper. Yet it is also a distant reality for far too many communities – a disparity that will only deepen in the face of a changing climate. We cannot build a sustainable city without a secure food supply, and we have to act now to ensure every Angeleno, regardless of means or zip code, can feed their families.

As an explanation for the inadequate access in lower-income, historically marginalized communities, one interviewee discussed the historical legacies of redlining and other discriminatory practices, stating the following in response to questions regarding challenges in food access: "Again, low-income communities and thinking about the design of urban environments over time thanks to the history of kind of redlining and racism in urban planning and development leading to whole neighborhoods not having options. So AKA [also known as] the food desert phenomenon, food apartheid, however we want to describe it, we think about the residents of those neighborhoods not having even the choice [to access healthy food]."

Transportation. Related to inequities in the built environment, interviewees, organizations, and policies/plans often pointed to the problems with limited transportation and a lack of healthful food options in walking distance. As an example, the language in AB 1616 emphasizes the challenges for lower-income communities to meet their food needs within their built environment and with limited transportation options, stating "For decades, low-income and rural communities have faced limited opportunities to purchase healthy foods. Often, without cars or convenient public transportation options, low-income residents in these areas must rely for much of their shopping on expensive, fatty, processed foods sold at convenience and corner stores." Several interviewees discussed how inadequate public transportation systems further disadvantages residents. As one interviewee stated, "We wish people didn't have to take a really long bus ride to get their produce." Another interviewee discussed the challenges in the built environment due to the current infrastructure, by pointing to the built environment catering to cars, the lack of adequate public transit (and the challenges of using it to carry groceries), and the lack of grocery stores:

> But unfortunately, LA is so spread out that the infrastructure is almost created not for humans, but for cars. It's really difficult to have access if you don't have a supermarket nearby. And it's hard to carry all your produce on the bus too if you have to bus out. So I think a lot of it is infrastructure.

Another interviewee echoed the needs for community members to travel long distances for produce stating, "So people can't grow their own food, they can't access local food, they're driving really far to buy fine produce that's affordable to them." Another interviewee reinforced these observations stating,

> Some people are, people who generally, who already want organic foods, and buy health food… they're driving five to seven miles or more out of the area to buy food. There's not a local food store where you can get that stuff on the regular, at some of the Ralphs that

> are left. The other thing is that we've had a lot of grocery store closures, and so we don't have the right number, amount of stores, period, health, food or any things in the mile radius that we should have, or that other parts of LA have.

Limited grocery options. Limited services and grocery stores in historically marginalized neighborhoods mean a limited urban food infrastructure in lower-income and/or communities of color. These issues were discussed primarily by organizations and interviewees; however, policies/plans alluded to the need for food retail and economic development in marginalized neighborhoods. Several interviewees personally experienced these limitations in food distribution infrastructure and inadequate public transportation. They noted the challenges of walking over a mile to the nearest grocery stores (often arriving only to be confronted with expensive, low quality produce), of taking inadequate public transit to higher quality grocery stores in other communities (with higher quality, but expensive produce), and of seeing existing stores struggle to survive or ultimately close down. Interviewees were also quick to point out that their experiences of having to take great efforts to get healthy food items all the while recognizing the availability of higher quality food options in other communities and the abundance of liquor stores and fast food restaurants in their neighborhoods. For example, one interviewee shared these challenges stating:

> …we didn't have a car at the time, and the nearest grocery store was about a mile and a half away from where we lived, so we would have to walk to get to the grocery store. Even when we got to the grocery store, the produce was low quality but expensive as well, right? Now, around the corner from the house, there were an abundance of fast food restaurants, liquor stores, convenience stores, to count them was like definitely about 15 fast food restaurants. I can name them all to you if you want me to. Then also the liquor stores, convenience stores were scattered right around there too. So then we would actually take the trip to the nearest Whole Foods. Not knowing, we'd say, "Hey let's just figure out where's the best place we can get high quality produce? Whole Foods." There was Whole Foods in El Segundo which was two bus rides away in order to get there so it would be a family outing to go to the nearest Whole Foods but then you could only get so many things because the price of that produce was just too high.

Another interviewee echoed these sentiments reflecting on the food environment of Southern Los Angeles; high quality grocery options and farmers market options were lacking in the area, despite numerous higher quality grocery options in more affluent, less diverse communities (e.g., Santa Monica):

> I was living at South LA at the time. My closest grocery store was a Food 4 Less. It was obviously a quality of food that I wasn't comfortable eating, but like I was aware of my ability to drive in my car, and I had to commute to Santa Monica every day and see on the way to work the like thirty Whole Foods that I passed that I could afford, and I had the privilege of buying from the farmers' market every Sunday or whenever it was.

Another interviewee observed that grocery stores currently serving community members are closing down or do not stock high quality or organic produce; furthermore, grocery store chains are unwilling or uninterested in investing in lower-income and/or communities of color and instead expect these residents to travel outside of their neighborhoods to purchase higher quality food. Additionally, this interviewee makes the argument that existing neighborhood grocery stores do not carry organic, high quality produce due to the assumption that people living in communities of color cannot afford or are not interested in buying high quality, organic produce:

> So, in LA, Ralphs is a major chain. There were two Ralphs nearby where we live, within a half a mile, I would say, or a mile. And, both of those closed. But, before they closed, I went to the one nearest me, and I asked them, and it was a shabby, a really shabby Ralphs, like no other Ralphs I had ever seen. Really neglected and not good. I asked them why they didn't carry organic food, and they said that, "oh, most of the people in this neighborhood or the people in this neighborhood can't afford organic food." I felt that that was, grossly generalizing and not true. … [Someone I know] had reached out to Trader Joe's and Whole Foods and tried to interest them into coming to South LA and they weren't interested. They felt that we would continue to travel to go to their stores where they were. So, obviously, we didn't meet their demographics, their requirements for their demographics…

Underinvestment by grocery stores in lower-income and communities of color (particularly South Los Angeles) are not only longstanding but worsening. For example, one interviewee characterized the issue stating,

> Even just the issue of getting supermarkets in South LA, this is like a chronic campaign. It started after all the events, the unrest of 1992. There was this promise to get like five supermarkets in the South LA. We're almost like 30 years later. I think there's been a net loss of two supermarkets.

Neelam Sharma of Community services Unlimited reinforced these critiques, stating the following in her acceptance speech for the Phenomenal Woman Award in 2016:

> …despite all the promises and all the talk since the rebellion in '92, and I happened to move to Los Angeles soon after that; I moved a couple of years after that to LA, so, I heard the aftermath of all this talk. I read all the serious articles that were written. I heard all the promises being made, and all the talk about how terrible it is that people who live in the U.S. do not have access to such basic rights, but we have to understand that since '92, there has been a net decrease of these kinds of services, of availability of fresh food, of supermarkets, in a neighborhood like South Central Los Angeles.

Speaking to issues of political unrest, another interviewee noted that inadequate services and grocery options were especially problematic in the case of some event resulting in a breakdown in supply chains stating that "…when we think about supply chains, low-income neighborhoods have less full-service grocery, they have less food retail infrastructure or food distribution infrastructure, such that when supply chains break down, supplies will run out faster. So there's that." Adding to the complexities surrounding the built environment, organizations and interviewees expressed their concerns with improving the built environment and urban food infrastructure without also leading to gentrification. As one interviewee stated,

> ... I want to talk about it from this angle, that when we think about expanding access to food and the need to create some equity in terms of grocery services, healthy restaurant options, farmer's markets, other points of access to good food and underserved communities... I was going to talk about an unintended consequence is related to just driving gentrification and displacement and how improvements, upgrades in

> neighborhood amenities are often associated with and often are linked to, inadvertently oftentimes, changes in demographics in a neighborhood and rising cost of home values. And it's this double bind where underserved communities deserve quality parks and transportation options and healthy food options, but then when those investments come, they often come along with a new set of neighbors and many of the existing neighbors, low-income, maybe mostly communities of color, can get pushed out. And so that's an unintended consequence of some of the work that we do that we're always kind of vigilantly watching for.

Creating a citizenry unable to actively engage

Stressors limiting abilities to make changes. Interviewees and organizations, in particular, discussed how economic and social inequality keeps community members from being able to improve individual and household dietary health and community food access. As an interviewee mentioned, "Well, when we think about who's most impacted [by the food system], we tend to think about people who are experiencing hunger or food insecurity, because they don't have enough nutritional intake to live a healthy life, period. So that's going to tend to be low-income people, people who don't have enough economic means to feed themselves." Individuals are often struggling to make ends meet, working multiple jobs to pay for utility bills, housing, transportation and food. With limited time and mounting stress, lower-income individuals do not have time to prepare healthy meals, take additional time to acquire healthier foods, or attend workshops to learn how to prepare or purchase healthier food options. In short, individuals struggling economically just do not have the mental bandwidth to work toward improving their own dietary habits; furthermore, these lower income community members do not have the time or resources to engage in food-related activism within their communities to try to improve the physical and social constraints making their lives more difficult (e.g., advocating for additional grocery stores or farmers' markets, pushing for local rent control,

engaging politically). One interviewee described these cascading effects of being lower income stating,

> If more people were civically engaged, we would be able to have more people in the engagement process of the affordable housing process. If people have more money, if they were spending less money on housing, they'd have more money to eat healthy, you see what I'm saying? If people were spending less money on utility costs, by being able to go green and find different ways to actually lower their utility cost, they'd have more money for healthy food access. They'd also have more time, because they're trying to spend so much money on these types of things, they have to get second jobs which means they don't have enough time and there's no cooking that's being done in the household. Well why are people taking the avenue to be able to eat healthy, cook healthy, the whole nine, when they need the time and the energy in order to do that?

The Los Angeles Food Policy Council discussed the anxiety many face in not knowing where a next meal will come from due to poverty, writing the following on their website, "Los Angeles County is home to the largest population of food insecure people in the nation. Nearly 30 percent of low-income individuals in Los Angeles County struggle with food insecurity, not knowing where their next meal will come from." Another interviewee opined that hopelessness from economic stressors can result in an ability to even recognize the problems in one's own community, stating

> If you're having a tough economic time and you have no hope of improving, you have no hope of finding a job, you're going to be so discouraged and depressed that you don't even see what's around you. You don't see the lack of green space. You just don't even see it, and I think we have to change that. I mean we really have to...

Another interviewee felt powerless to help community members engage to improve the urban food system within their communities, due to the organization's inability to address the host of other stressors keeping them disengaged, "… it's disheartening sometimes when you see that the other social determinants of their lives keep them from really activating in the full way that they want to activate. And there's no solution that you could bring to the table in order to help them continue to do that." Interviewees also discussed how being lower income makes participating

in local organization initiatives difficult, with community members having trouble paying for transportation, finding childcare, and getting enough food to eat. One interviewee noted their organization's attempt to alleviate some of these burdens stating, "There's a respect for the fact that it's difficult to do things for free, period, when you have economic hardship." Further complicating the ability for community members to be active in changing their urban food spaces, interviewees discuss how the language and process of policymaking is difficult to understand for those on the outside of political endeavors (e.g., political or policy jargon is difficult to understand). In addition, with limited budgets organizations often lack the funding to support their active community members (e.g., taking them to Sacramento to advocate for policy), even if their community members are interested in having their voices heard and being a part of the process.

Interviewees also discussed the challenges in helping lower-income families prepare healthy food (when attending workshops or nutrition classes is a hardship) and when parents feel limited in their ability to make different choices. For example, one interviewee stated, "And then we're dealing with low-income communities who like maybe the only treat that they can afford to give their kid that day is Hot Cheetos as opposed to a more affluent family might be able to give something else as a gift or a treat for their kids." Another interviewee noted the challenges in getting parents to attend nutrition workshops due to their busy work schedule stating, "The working adults are really difficult to reach because they are so busy, they'll be working two, three jobs or whatever."

Limiting economic opportunities beget limited economic opportunities. Workers within the food sector tend to make low wages, keeping lower income individuals in cycles of poverty

and with limited food access. These low wages have two primary deleterious impacts within urban food systems. First, because workers within the food system do not earn living wages, they are unable to afford higher quality, healthier food options; as a result, many rely on public food assistance to meet their basic food needs. Second, these lower wages make operating food retail businesses (supplying higher quality foods) in lower-income neighborhoods difficult. Some scale food retailers and corner stores struggle to keep afloat and often have trouble stocking produce at prices that surrounding community members can afford.

Low wages and reliance on assistance. Interviewees and organizations commonly discussed the cascading hardships of not making living wages (e.g., relying on public assistance or donated food options) and focused on the needs to bolster economic conditions for food system employees. For example, one interviewee pointed to a study (Jacobs et al., 2015) finding that on average fifty two percent of state public assistance spending supports working families (the majority of whom are fast food workers or Walmart employees) stating:

> One thing that really irks me is there was a UC Berkeley study a couple of years ago, maybe 2016, that showed that some of the biggest users of, well we call it CalFresh here, but SNAP resources, AKA food stamps, are employees of companies like Walmart specifically. So, Walmart pays people such low wages that those people then have to be on public assistance and get food assistance. So essentially, they're getting a public subsidy for not paying their employees a living wage.

Another interviewee reinforced this issue, where people working within the food industry are themselves food insecure and relying on government provided food assistance stating,

> Then we think about workers. We think about labor and how food is even possible in our lives from farm to fork and beyond, who are all of the workers involved in that process, and what is their level of economic and nutrition security. And yeah, I mean, just that we think about the statistic that, as a class of workers, food ... and this is a California specific thing. Food workers are twice as likely to rely on public assistance for feeding their families as compared to the general population. So that level of disparity we're interested in as well.

Another interviewee, commenting on the assistance offered by the organization and broader problems with the economy, stated

> Well, I think people in some cases think that we're just enabling people to continue to look for handouts. A lot of people that think that have never been living paycheck to paycheck, so they don't know what it's like to get to the end of the month and you have $50 and you have to pay your rent or you have to pay for food. That's an issue with our economy.

Another interviewee echoed concerns for food workers making low wages, adding that living wage justice issues are compounded by "exposure that food workers face" due to environmental hazards, particularly in production practices (e.g., spraying pesticides).

Economic struggles for store owners. In addition to food workers in larger sectors (e.g., fast food, agriculture, retail) struggling to make ends meet due to low wages, small business owners in food desert communities also struggle to keep their doors open. Interviewees pointed to the challenge in providing produce to the communities with limited demand for it; furthermore, without the ability to take advantage of scaling up purchases, store owners are often unable to keep produce prices affordable to community members. (This creates a reinforcing situation where produce is too expensive, so community members do not purchase fruits and vegetables. Without demand for produce, store owners are not incentivized to sell produce.) Several interviewees discussed these challenges for smaller markets and corner stores to remain open in lower-income communities, especially facing personal financial struggles; for example, one interviewee stated,

> Yeah, so businesses, typically corner stores don't sell produce because one, it's expensive, and two, they can't scale up where they can sell in larger quantities. Therefore, they have to buy from, drive down to a supermarket and buy some of the produce and mark it up even more. So it makes it one, more expensive. By that time, the produce has been around on shelves a little bit longer, so not as good quality… And there's no silver bullet

> to this effort. It really does take a lot of a different ... Again, it's a supply and demand. The stores can supply produce, but if there's no demand for it, and some sustainable demand, then it's kind of quite pointless, to be honest. There's no business in it. And again, these stores, they're not here ... And that's something really big and that I think is really overlooked, is that we as nonprofits, we as social organizations, can push for healthy eating and for healthy items. And that could be our goal. But if the stores we serve are only opening corner stores to survive and pay their next bill, they're not thinking about "how can I make my community healthier?" Or they're thinking about, "how can I pay my next bill? What kind of items are going to help me meet my rent and my debts this month quicker?" Does that make sense? So how do we eat?

Another interviewee commented on the inability for a local store to survive economically:

> There was some excitement when Fresh & Easy came out. I used to love our little Fresh & Easy store over here. They had different kind of products and when stuff was fixing to go bad, they would put it on sale. You'd see like clumps of people around. Then they just went out of business. They just couldn't do it.

Enabling (explicitly or implicitly) food-related injustices against vulnerable groups

Interviewees also discussed how social and economic inequality exacerbates forces that seem to further disadvantage already vulnerable populations, such as homeless, seniors, persons with disabilities, linguistically isolated individuals, immigrants, undocumented individuals, and people suffering with mental illness. For example, interviewees worry that a growing number of seniors relying on fixed incomes coupled with rising housing costs will portend greater disparities in healthy food access. As on interviewee noted,

> You know this is only going to be exacerbated by the increasing senior population. What we have here also in the state is a housing crisis. It's really the number one cause of hunger because if you have to pay 90 percent of your income for rent, you don't have enough left over to buy food. It's that simple.

Similarly, interviewees mentioned how inadequate housing and homelessness make storing and cooking food impossible, noting a rise in evictions. Furthermore, interviewees discuss how having shelter is inadequate if the costs of housing mean that an individual has virtually no money left over for purchasing food. As one interviewee stated, "Housing really has to be addressed in order

for us to address the food situation. The food situation has to be addressed for us to address the health situation." Interviewees also brought up the challenges for persons with disabilities in accessing food. For example, one interviewee remarked,

> Because economics is one factor in hunger, obviously, the most important one. But then there's also social isolation. One of [our community members] is blind. He, a couple of years ago, said, "You know, one reason a lot of blind folks don't go to the farmers market is because there's no one there to tell them what's in front of them. How you use it, how you cook it, what are the different varieties."

Similarly, transportation is also a barrier for persons with disabilities in accessing food. The same interviewee discussed the challenge for sight-impaired individuals getting to and from farmers' markets where they can access higher quality produce:

> Because transportation's also tricky for people who are blind. There is Access, the program called Access. But Access, you have to give them an exact address to pick you up at. They can be 20 minutes late, but if you're five minutes late, they can leave you… The nickname for Access is "act stressed" because it's very stressful to deal with them. You have to set up your trip at least 24 hours in advance. You can be abandoned if they can't find you, if you don't end up being at the right place.

Interviewees also discussed the challenges for immigrant and/or undocumented individuals in getting access to food assistance or to local food entrepreneur opportunities. These issues, while having a local impact on communities, seemed to speak to larger forces at the federal level of governance (e.g., immigration and deportation policies). One interviewee discussed how new immigration policies are being tied to food assistance programs; as a result, immigrants of legal status in the United States are fearful of taking advantage of food assistance programs. One interviewee described this issue stating, "And we've got a situation where, because of all the current policies and rhetoric around immigration, some people are afraid to apply for public benefits such as CalFresh that might help with their family's food situation." This interviewee went on to explain,

> ...some new policies are making it so that if you ever get CalFresh, formerly called food stamps, it could reduce your chances for ever getting a green card or legal permission to be in the U.S. And let's keep in mind that "illegal" people cannot get CalFresh in the first place. It's not available to them. So, we're talking about people who are legally here in the U.S. now no longer being able to ask for even temporary food assistance because it will have a serious and significant impact on their ability to get a green card in the future. So, that's a big one. And also because of all the immigration policies and rhetoric, people are simply afraid to get food assistance that they're legally entitled to.

In addition to keeping families in need from taking advantage of food assistance, fears of immigration policies and possible deportation might also keep individuals (often undocumented women) from engaging in their local food economies to help make ends meet. As one interviewee stated,

> In terms of economic and environmental resilience, economic resilience, one of the biggest ways I think we have contributed is by identifying points of marginalization, where entrepreneurs or economic actors are marginalized. And yet, are ... and are subject to criminalization, subject to, are vulnerable to ... are vulnerable to deportation, to arrest, et cetera.

Wasteful production and distribution networks and practices

Across Interviews, organizations, and policies/plans, there was a strong theme related to food waste. As one interviewee noted, “I think that over the past 10 years, and especially over the past five years, the issue of food waste has become more of a hot topic, so we have seen that be an avenue that people find us through.” Another interviewee echoed the need to focus on food waste, stating “…the way that we grow food and the way that we waste food is a huge problem. When 40 percent of the produce that is grown in the Central Valley and in growing spaces across America are thrown out into the trash right?” Food is commonly characterized as being wasted at multiple points along production, distribution, and consumption chains. However, these data sources tended to frame the problems of food waste differently. Interviewees and organizations tended to focus on the food distribution (i.e., food being wasted

after production and before reaching consumers) as a key node within the food waste chain, with less emphasis on producers and even less on consumers. On the other hand, while plans and policies emphasize the need to address food waste (particularly within sustainability initiatives), there is far more emphasis on consumer and retailer waste (e.g., waste from households and small businesses). Policies and plans focus on trying to reduce consumer waste through tips for households to keep food from spoiling, promoting food donations to communities in need, and adding infrastructure and procedures for municipal and regional composting systems.

Perfectly good produce wasted. Organizations and interviewees stressed that the production/distribution networks were dysfunctional—the amount of food being wasted, especially in the context of so many families being in need of fresh food—frequently came up in interviews and on organization websites, regardless of the type of food system representation (e.g., organizations focused on food justice, economic development, urban food production). Waste was often characterized as coming from wholesale markets, supermarkets, restaurants, and farmers markets– implicating a problem with the current supply, demand, and distribution models. For example, one interviewee characterized problems across the production/ distribution networks stating,

> You have the spillage that comes from the system is the way it works right now where a lot of the imperfect produce doesn't even make it to the grocery store. Then the grocery store only sells about less than half of the produce that they have then so they throw the rest of that away. Not to mention the whole sale market which is trying to sell produce to grocers and restaurants and corner stores and the like and only getting off a percentage of that and having the rest of that produce thrown away.

While not as emphasized in the planning and policy documents, there were goals outlined to reduce food being wasted. For example, the OurCounty sustainability plan listed a goal to adopt "food preparation guidelines that minimize food loss." Most prominently, many organizations

and interviewees mentioned the large volume of food being wasted by distributors at the Los Angeles Wholesale Market (before reaching grocery stores or commercial retailers). However, other food waste foci included farmers' markets and households (e.g., residential fruit trees). As an example, one interviewee discussed the waste at farmers' markets as being a challenge for farmers as well (as these producers miss out on the revenue of selling their produce),

> …recently I've noticed that while some of our farmers markets and local events are very good about recycling and composting, we do have to think about issues like the fact that these farmers are driving a long way, and so using up a lot of gas. Sometimes a lot of stuff is being thrown away at the market although there's organizations that are collecting a lot of the leftovers, which is good. Personally, I prefer that we find more venues for the farmers to sell the produce that they don't sell directly to market.

As an example of the food waste discussion from planning and policy documents, the Los Angeles Green New Deal mentions the goal of reducing the large amount of food waste, stating the need to "recover and distribute at least 30 percent of all discarded edible food" and to "identify and engage major point sources of food waste throughout the city on food recovery programs…"

Food salvaging. Because organizations are often working with community members lacking access to healthful fruits and vegetables, several of them focused program efforts on salvaging and/or redistributing wood-be-wasted food to those in need. For example, one interviewee stated the need to eliminate the waste of perfectly healthy food,

> Food rescue is a very important part of the system as well, like if we can eliminate food waste of perfectly good produce. I'm not saying people should be eating scraps, no I'm talking about the pepper that I have from the wholesale market being as beautiful and as perfect and ready to eat as the pepper that I have in the grocery store. We need to make sure that that produce is getting into the hands of people too.

As an example of emphasizing food recovery efforts, Food Forward discussed the volume of food waste at the market stating the following on their website, "Food Forward staff and volunteers rescue over 435,000 pounds of surplus produce each week from fruit trees, farmers markets and

the Los Angeles Wholesale Produce Market. 100% of these fresh fruits and vegetables are donated to over 1,800 hunger relief agencies across 8 counties in Southern California." As another example reinforcing the Wholesale Produce market as a point of food wastage, one interviewee stated,

> There are just so many reasons that food doesn't, especially at the wholesale market, that food does not get to supermarkets or restaurants. I'm sure that you're seeing, sometimes it's because it's not cosmetically perfect, it's like a little wrinkly. Sometimes there's just an overproduction issue. Sometimes there's a transportation issue. I mean, it's just, issue after issue, can lead to just this mass amount of waste.

In addition to salvaging at wholesale markets, organizations also collect would-be-wasted produce at the end of farmers markets for donations. As example pertaining to farmers' market recovery, Food Forward describes their market food recovery program on their website, "The Farmers Market Recovery Program began in 2012 at the Santa Monica Farmers Market on Wednesdays with a simple idea: to connect the fresh, local produce that is leftover at the end of a farmers markets with food insecure people in the community. Food Forward now gleans at 25 different farmers markets each week across Los Angeles and Ventura Counties, rescuing an average of 52,000 pounds of produce per month!" Food Forward also sends volunteers out to collect produce from residential trees and redistribute citrus, avocados, and other produce to food insecure households or charitable organizations in the community. As example, they state the following on their website, "One fruit tree can yield hundreds of pounds of fruit, which is generally far too much for one family to consume." Organizations also discussed the need to encourage greater salvaging from grocery stores and large retail chains. Community Services Unlimited described donating unclaimed produce bags, writing "Produce bags not picked up from their designated location during their scheduled time are forfeited and will be donated." Finally,

plans and policies also discussed the need to reduce food waste through food salvaging. For example, the Los Angeles Green new Deal outlined the goal to "develop vendor guidelines, emphasizing waste minimization and surplus edible food rescue" and to develop programs ensuring that "edible food destined for landfills is recovered to feed hungry people." Noting the scale of the food waste issue, the Los Angeles Green New Deal notes that "…3,000 tons of edible food recovered to date by RecycLA could... feed 4,500 Angelenos for an entire year."

Recovering produce at a massive scale takes daily organization of trucks, volunteers, and receiving agencies, beginning at 3:00 or 4:00 am. Further complicating abilities to recover food, the amount of produce needing recovery fluctuates in scale and content daily and takes time and complex coordination for organizations to recover, organize, and redistribute would-be-wasted food. Speaking to the extreme disfunction of the food production/distribution/consumption networks, one interviewee mentioned the need to travel to other states to deliver rescued food:

> …for the most part, those fruits and vegetables are staying in Los Angeles and in Southern California, but there are instances when… we had to go into Nevada. I think we went into Washington. I mean, it's like, when we get, when Los Angeles and Southern California get so saturated with Roma tomatoes, we need to find other release valves for the produce we've recovered.

As another interviewee noted, producers and distributors are reimbursed for wasted food through tax deductions: "I also wanted to mention that all of the, whether it's a distributor, a homeowner, or a farmer, they all get tax deductible receipts for their donations."

Refrigeration and storage. A lack of refrigeration as a contributor to food waste also emerged in interview and organization data. A few interviewees noted the challenges with getting large volumes of salvaged food, without having proper storage or refrigeration facilities to keep food. For example, one interviewee stated, "Sometimes we've gotten produce…to

distribute and some of that produce has been bad." In addition to lacking proper facilities to store perishable food, the disorganization and unpredictability of food donations seem to add to the potential for wastage. Organizations are attempting to address these inefficiencies by getting would-be-wasted produce from distributors or producers to consumers. However, these recovery programs take a lot of resources (e.g., time, volunteers, storage, refrigeration, networking). As an example, one interviewee commented on the complexity stating the following:

> We oftentimes just don't have the capacity to get to everything... As soon as we recover produce, whatever it may be, we need to have a home for it. It needs to go directly to a hunger relief agency. We don't refrigerate anything. So, it's just a matter of all these logistics that we need to line up in order to place produce so it doesn't go to waste.

Refrigeration also came up as a concern for corner stores attempting to provide produce. Without refrigeration, fresh produce was more likely to spoil (especially during heat wave conditions).

Composting. Organizations, interviewees policies, and plans also discussed the need to expand composting infrastructure. For example, one interview remarked,

> I think we need to have compost hubs throughout the region so that people can help to close the loop as well from their household. Not just being able to get food scraps but being able to use the soil that's being grown in these hubs. I feel like Waste Management, Public Services, all them should be a part of that solution too from the close-up standpoint.

Another interviewee echoed the need for composting infrastructure, especially in the context of having food donated[3] and then spoiling: "And so, nobody wants it [donated food], and then it

[3] As a note, some interviewees found it hard to believe that food was being wasted after being donated and noted that there is internal regulation to ensure that this does not happen. However, a few interviewees mentioned that food is wasted after donated, especially after large volumes are donated to organizations without storage facilities.

just goes in the trash because there's not a lot of composting systems or there isn't an easy way to get things composted around the sites that we work at."

Organization website content also reinforced the need for composting. For example, the Root Down LA organization encourages community members to bring food scraps to be composted. Policies and plans emphasized the need for composting as well, particularly municipal sustainability plans and in respect to municipal waste management (e.g., the Los Angeles Green New Deal, the OurCounty Los Angeles County Sustainability Plan). For example, the OurCounty plan outlined a goal to "Establish guidelines for large quantity food waste or green waste generators to perform on-site composting, mulching, or anaerobic digestion, and develop a marketing plan for the product." Similarly, the Los Angeles County Community Climate Plan states the goal to "provide compost receptacles for food waste and other green waste." The Los Angeles Green New Deal highlighted a variety of plans to reduce food waste through composting, stating the goal to "establish food scraps drop-off locations at all city farmers markets," "partner with local organizations to ensure food scraps are composted locally first," and "launch citywide residential food scraps collection."

Economic systems contributing to waste. While not explicitly discussed often, it is important to note that interviewees also characterized food waste as being due to the capitalist food model (which encourages moving new inventory) and the commodification of food. For example, one interviewee discussed how the push for retailers to provide the "freshest" products might contribute to waste; retailers are incentivized to move inventory. An interviewee described this process in the following way:

> It is a problem. That's another thing. That's another food system problem. I mean, it's probably done because a lot of people are like, "Well, why do grocery stores try to offload

> their eggs after three days?" Because it's a capitalist society, right? They want to make money. The people are having all these eggs, they need to sell them, they need to move their inventory. The same with any other product in the grocery store. Part of it is just that, it's a commercial thing. If they said, "Eggs can sit there for two weeks," then they wouldn't make as much money and et cetera.

Competition over space and land use

Themes of competition over space and land use addressed issues ranging in scale and scope from concerns over cannabis corporations purchasing large tracts of food-producing land, to conflicts over using urban space for community gardens or parking lots, to conflict over using retail shelf space for fresh produce versus chips and soda, to conflicts between tenants and landlords over using residential space for growing food. In addition to conflicts over how space should be used, there were tensions regarding who should be able to use and access it. Economic considerations, such as high cost of land, as well as different values drove these conflicts.

Urban space. Tensions associated with urban land in Los Angeles was a primary theme emergent across data sets. In an interesting juxtaposition, interviewees and organizations framed Los Angeles as (1) being rich in vacant, under-utilized land, where tensions exist between current land owners and prospective users; and (2) harboring or fostering competition for land currently in use, with tensions stemming from a sense of vulnerability and uncertainty by current and prospective food-related users, driven by current or prospective owners with profit-driven motivations and/or political power. As one interviewee noted, “It's like, you're using land in a city environment where there's a lot of competing uses for that land. It's already political and it's already vulnerable.”

Vacant land was seen as especially useful to organizations and interviewees interested in using land for community gardens and urban agriculture. Organizations and interviewees saw

opportunity in vacant land (much of which exists in lower-income, communities of color) to provide a host of benefits: beautifying the neighborhood, providing an interactive community space, offering needed green space, providing teaching, economic, and job-training opportunities, and bolstering access to fresh, local and sustainably produced fruits and vegetables. (These benefits are discussed in greater depth in Chapter 7). However, high costs of land in Los Angeles make purchasing or acquiring land for agricultural purposes especially difficult. As one interviewee stated, “But vacant land is at a premium in Los Angeles because of land just constantly increasing in value. It really is hard to see how, without significant public support for a community garden program, how we'll significantly expand community gardens in the future.”

In an effort to encourage land owners to lease vacant, underutilized or blighted land to urban agriculturists, the State of California, County of Los Angeles, and City of Los Angeles have all adopted the AB-551 Urban Agricultural Incentive Zoning (UAIZ), which provides a tax break for allowing vacant land to be used for urban farming. As the Los Angeles Zoning ordinance states, the purpose is to “promote and foster urban agriculture” and “to increase access to healthy food by providing an incentive for property owners of eligible vacant land or unimproved properties within the urban areas of the County of Los Angeles to utilize these properties for small scale agricultural uses.” Property owners enter into agreements with the municipality to promote urban agriculture in exchange for reduced property tax assessment. However, as many interviewees and organizations discussed, the UAIZ policy has not been especially effective in practice. As one interviewee stated, “And I think participation [in AB-551] has been slow. People haven't exactly been flocking to it, but there are a few projects that are set up, and sometimes

it's just challenging to find a match between a willing urban farmer and a willing landowner. There's just not always an obvious match." Another interviewee echoed this sentiment, "I wish they were sort of more variations of that [agricultural incentive zoning policy]. That would be more interesting or more appealing to people with land because we do need access to those spaces, especially in more urban places."

This ineffectiveness may be due in part to the economic value placed on the land and owners fearing an ability to sell the property in the future, once an urban farm has been established. Economic markets and nature do not operate within the same temporal realms. A housing market might make it especially lucrative for landowners to sell one year, or especially lucrative to wait to sell five years, down the line (when land prices have increased even more in value). However, while real estate prices fluctuate significantly over shorter periods, establishing and growing plants occurs at a more gradual pace. For one, land is often hardpacked soil or concrete that needs to be converted into rich soil. This process is laborious, requiring breaking up the land, planting nitrogen fixers (such as legumes), integrating rich compost, and applying mulch. As one interviewee stated,

> We had to use pickaxes because the ground was so hard-packed and mind you, it hadn't been gardened or farmed or anything [in decades]… so we brought in a load of that mulch, laid out about six inches of that all across the whole thing and I threw fava beans through the whole place and in a few weeks, the fava beans came up and they keep coming up now every year...

Once the soil is healthy enough for planting a variety of plant species, the urban farmer must wait for the plants to grow and mature before harvesting, all the while continuing to improve the soil conditions and weed. While a lease lasting a minimum of five years may seem like short timeframe for urban farmers (considering the process of improving soil health and building

healthy crops), the commitment might be too long to entice property owners, despite the tax break potential. As one interviewee stated,

> I believe that it's a little bit too daunting of a commitment for homeowners, property owners rather. It's a five-year commitment… think about agriculture and how long it takes to get the farm ready and really have a harvest. That…that's not crazy, but to the landowner, I think that's a bit daunting for them, that they have to commit for five years. And I believe the contract itself is daunting, it's quite big and jargon-y, and I think that turns people off.

Media coverage of the incentive program noted that only four lots have received tax breaks under the program in Los Angeles County (Hurtado, 2018), arguing that properties owners may be apprehensive about giving up vacant land. Property owners may be holding onto land for future development and worry that neighbors will give owners pushback when they go to sell the land and replace the urban farms with something else (Hurtado, 2018).

Competition over land use to cars and land use for agriculture is another common concern brought up by interviewees and by organizations. For example, several sources mentioned the conflicts between transforming available space into urban gardens or reserving it for automobile use (e.g., reserving land for parking). In addition, existing space currently being used for farming practices (e.g., urban agriculture or farmers market) are often under threat of being turned into parking lots or parking structures. In a video posted by Community Services Unlimited, Dr. Diane Kim, a professor at University of Southern California (USC) stated, “I believe the city of Los Angeles and USC, we're discussing the possibility of shutting down the farm or relocating the farm, so that they can build a parking structure for the coliseum.” Neelam Sharma, director of Community Services Unlimited, went on to say “We were told at the time that the reason for this was because of the pressure from USC and from the County, and so that the pressure from those two bodies for parking was what had created the plan to turn this into a parking lot.”

Public space. The tension over public space was another interesting theme that emerged primarily in the interview data. Interviewees discussed several conflicts regarding how public and semi-public space should be used and by whom. For example, as is discussed in other sections of this dissertation, interviewees mentioned the conflicts arising in response to residents planting of food in parkways. Most notably, Ron Finley was cited for growing food in the parkway outside of his home. However, in addition to how semi-public and public spaces were used, there were tensions about whose bodies could be occupying those spaces. For example, one interviewee discussed the tensions related to using sidewalks for street vending (the majority of vendors were immigrant or undocumented women): "To me, that [street vending] was ... It was a very potent example of where L.A. divides on race and class and who we think streets belong to, how we think our public urban environments should look, whose bodies should be there." As another point of tension, many public parks and other urban spaces are used for farmers markets; however, these spaces are also used by homeless populations as well. There is uncertainty in terms of navigating these conflicts. As one interviewee noted:

> …so our transient population lives within the market boundaries and there is mental illness and addiction that comes with this. You know… like how to engage or not engage when a conflict arises… do we remove them from the market or do we not? You know? And so we have to physically move them from sleeping on the street when we are loading in, because we do not want cars to run them over, but yeah are these big, borderline life or death things that you are dealing with.

Retail space. The competition over space even occurs at the micro-level of shelving space within convenience stores. While convenience stores may want to be a provider of produce for their communities (and reap the economic benefits in return), they often have contractual agreements with processed food distributors (e.g., Pepsi, Coca-Cola) that influence how and where products are displayed. This competition is particularly salient when it comes to

refrigeration. Refrigerators are often provided for small-scale convenience stores and liquor stores to shelve soft-drinks and beers; it is difficult to sell produce when the only refrigeration is allocated to provide space for sugar drinks and sodas. As one interviewee stated,

> One, refrigeration. I think being very real, that these stores, if we really want to support them, we need to have some sort of incentives for stores to offer produce. Because we are competing for shelf space against chips and against soda. When you have Coca-Cola giving these stores free refrigerators to sell soda, obviously it's going to be more difficult for us to offer, to even compete with that. And usually these companies do have contracts where you have to only put their branded items, and it usually happens that way.

Moving beyond shelving space to a commercial rental space, interviewees and organizations mentioned the challenges in finding retail and community space for changing the urban food environments. With rents being high in Los Angeles, it is difficult for organizations without upfront capital (e.g., non-profit community-based organizations and community-owned/operated organizations) to procure a retail space. While food cooperatives could be a part of transforming food systems (as discussed in Chapter 7), affordable and well-located space presents a challenge. Lower-income community members that are in most in need of high-quality grocery stores (like food cooperatives) likely have greater difficulty paying the initial membership fees. Higher rents in urban centers pose and additional challenge to getting food cooperatives and other community-food spaces (e.g., a space for cooking classes, groceries, urban gardening, jobs training, cafés and commercial kitchens, community organizing). When asked what would help with getting local food initiatives off the ground, one interviewee commented, “Oh gosh. A free building, in a good location. Yeah, you have to be in the right location. That's the catch.”

Peri-urban and rural agricultural land. Competition over space also occurs at a grander scale with farmers feeling pressure from high value agricultural commodity producers, like cannabis producers and California wineries. For farmers leasing land, their economic and farming

futures are increasingly vulnerable. For landowners, the challenges of making a living through farming can make selling off farmland to high dollar investors a lucrative opportunity. As land increasingly is developed for urban uses and consolidated for high value commodity crops, peri-urban and rural farmers are left in vulnerable positions. As one interviewee noted,

> California is super expensive, and the wineries and cannabis producers are… you know… they have money and they can buy up as much land as they want. It is big ag in a different way, or at least the same forces of big ag being pushed in a different way… So to me the legacy of agricultural production of food in California is huge and the forces [shaping them] are huge.

Household/individual space. This competition over space also becomes an issue at the household level; interviewees, policies, and plans noted the challenge of growing food in residential gardens. Residents lack sufficient space for growing food, or conditions that do exist are not ideal (e.g., inadequate light). As one interviewee stated, "gardening is something that people enjoy and it can supplement family's food budgets, but you have to have a backyard or at least a patio. And not everybody has that." The Neighborhood Food Act requires a landlord to allow tenants to grow food in portable containers, if landlords approve gardening conditions as meeting certain conditions (e.g., not blocking parking spots, not impeding maintenance of rental property). However, interviewees characterized living in rental properties as a barrier to growing food for personal use. For example, one interviewee stated, "It's also harder and harder for people to grow on an individual basis or do community gardens because of lack of access to land or to landlords who would allow that to happen. We see that as a barrier a lot."

Lack of knowledge/familiarity and disconnection with food

Across data sets, a lack of knowledge/familiarity and a disconnection with food emerged as being an impediment to building food system resilience. This lack of knowledge and

connection related to several factors: lack of understanding of natural process and food production practices; lack of skills and education in preparing or growing food; lack of understanding of food safety and donation rules; and lack of knowledge of food as related to health and nutrition. Interviewees mention several causes for these impediments; however most emphasized a lack of education and a disconnection with the food system and an active disinformation or advertising campaigns on the part of food corporations.

Disconnected from the food system. Children's lack of familiarity of the food system was emphasized in the data; however, parents (in the context of feeding children) were commonly discussed as well. As an example, one interviewee discussed the disconnection children have to food production stating, "Kids don't know where that corn comes from. They have no idea how it grows." A lack of knowledge of how food is produced, how food should be prepared, and what constitutes healthful food, also challenges the resiliency of the food system. One interviewee commented on the unfamiliarity with growing food stating,

> …people who walk by or drive by [a vegetable garden] are always curious and they will stop and they'll say what are you doing? Or what is that? Is that a tomato? Because urban people rarely have seen vegetables actually growing. They have no sense of how they come to the market, how they grow. I mean people could think that tomatoes grow on trees. I mean they really, really don't know.

Similarly, the Environmental Media Association pointed to a disconnect as being a root cause of environmental problems, stating the following on their website: "We believe that a disconnect from nature, our soil & water systems, and where food comes from is the root cause of many of our modern environmental issues. We hope by getting kids outside and planting vegetables and herbs, we can start to change that disconnect." As another example, a blog posted to the Grow

Good organization website discussed the Executive Director Mary MacVean discuss the need to connect to food in order to improve our relationship with the food system:

> On a recent visit to Grow Good, MacVean strides through the garden with a group of students, giving them tastes of the nasturtium leaves and pink peppercorns freshly fallen from the tree. This, for MacVean, is the crux of the organization: connecting people to the things they eat. She believes that may help the problematic relationship people have with their food.

As another example, the Los Angeles County Farm Bureau also described the disconnect that children and adults have from the food system:

> In the Los Angeles area most children, as well as adults, know very little about where their food comes from and the relationship between their own health, healthy food supply, natural resources and maintaining a healthy environment. Urban children read books that include farm animals and sing about Old MacDonald, but most have never been to a farm, met a farmer or traveled outside their zip code.

Several interviewees discussed the lack of knowledge with different types of produce and how this lack of familiarity ultimately relates to a lack of eating a particular food. For example, one interviewee stated,

> A lot of those people have never seen those things growing and have never eaten them. They didn't buy them at the market. Daikons are in the market, but I don't know about you but many people won't buy it because number one, they don't know what it is, they don't know how it tastes, they don't know what to do with it, and I know that as a teacher that unless you show people how to grow it, unless they taste it, unless you show them how to prepare it, they will not be involved with it…

Another interviewee commented on the challenge in getting people to try different foods grown in the garden because of a lack of familiarity or a negative preconceived notion, stating "We really just love them [lima beans]. And like kind of… Nobody likes, very few people have fond memories of lima beans." As another example, the organization Root Down LA pointed to the challenge in informing community members of ways to incorporate fruits and vegetables, particularly in the context of a general disconnect from food production:

> It is not always easy to convince people that fresh, whole foods can be easily and affordably incorporated into our busy lives. But, we aim to do just that. One piece of blanched broccoli, one purple (yes purple!) carrot at a time, we are reminding kids (and adults) where food comes from, and teaching them how to make it taste great.

Polices and plans focused on diet also emphasized a lack of understanding and familiarity with fruits and vegetables, particularly in terms of purchasing and preparation. For example, the Champions for Change website mentioned that fruits and vegetables could be quite affordable: "Did you know? A single serving of a fruit or vegetable usually costs less than 25 cents. Even a small food budget can have big health benefits."

In addition to a lack of understanding where food comes from, interviewee and organizations also discussed the challenges stemming from a lack of nutritional education. Interviewees acknowledge the power of food corporations–through advertising and product placement – in offering misinformation or countering health narratives to children, their parents, and community members in general. Many consumers find it confusing to determine which foods are healthy and which foods are unhealthy. Advertising directed at consumers further muddy these waters, making nutrition education even more complicated. As one interviewee stated, "And then I think that obviously, one of the biggest things we're up against is sort of the corporate food system and its marketing to folks. I always see nutrition education as sort of running uphill because you're trying to counter all of this messaging that is backed by a lot more money in messaging and in marketing that is trying to get the kids to keep eating Cheetos and this awful processed stuff."

As another issue pointing to unfamiliarity, interviewees also discuss the perpetuation of food myths surrounding food safety and food donation, compounded by a lack of federal standards, as exacerbating these issues. Interviewees discussed how many food retailers do not

understand the policies surrounding food donation and still believe that liability concerns put potential food donors at risk. For example, one interviewee stated,

> There are still people that get hung up on the liability issue of people getting foodborne illness, and that can just stop businesses dead in their tracks. They'll say, "We can't donate anything. If it's past its sell by date or if we've just done a big catered buffet and there's food that was prepared, it all has to go in the trash." Whatever. So, [we're] working past those misconceptions of people are going to get sick…

These misconceptions and confusion surrounding food waste seem to be reinforced by the lack of standardization for managing food and leaving sell by or use by dates to individual grocers. These lack of standards may contribute to waste on the distributor's end (e.g., not knowing whether food is suitable for donation) and on the consumer side (e.g., throwing away perfectly good food because of the sell by date). As one interviewee noted,

> So, there's still people that are like, "My eggs say sell by tomorrow which means in the next two days I have to eat them all or I have to throw them away." Stuff like that, that people need to be more educated on, which we try to do some of. " So, we're trying to get rid of the myth that everything goes bad in another day after its sell by date.

Onerous and prohibitive regulations

Overly onerous regulations or certification processes and counterproductive, restrictive, and/or ambiguous policies came up as an impediment to resilient urban agriculture. Regulations made enacting innovative policies more difficult and/or worked counterproductively in response to promoting food access and local food entrepreneurship. In addition, the regulatory environment is difficult to navigate, due to contradictory regulatory environment at different levels of governance or to ambiguities within the laws.

Counterproductive and/or overly restrictive. Most commonly cited in terms of onerous regulations, the organic certification process commonly came up as a current impediment to promoting access to high quality, sustainably produced foods. Interviewees and organizations

discussed how the process of acquiring organic certification was prohibitively expensive for many small-scale farmers and challenging to navigate for farmers who do not speak English or Spanish. Furthermore, even though many of these producers use organic methods and farming practices, without the label ensuring consumers that these practices were taking place, farmers are not able to capitalize on the additional economic gains that come from charging more for organic foods. As one interviewee stated,

> We've seen them [farmers] facing challenges to actually being organic certified. A lot of the produce that we distribute we have to say it's sustainably grown, we can't say it's organic because those farmers just couldn't afford the certification process or like because there's certain regulations that they just can't afford to comply with or they don't have the capacity to for whatever reason and then because they're a smaller operation so that affects their ability to sell. If they can't use an organic certification or label then they aren't as marketable.

Another interviewee discussed how in addition to being expensive, the organic certification process included logistical impediments that certain farmers could not overcome or change (e.g., being in proximity to a farmer using convention farming practices), stating that:

> Even some of the ones who are not certified organic are not using chemical fertilizers and they're not using pesticides. It's very difficult and expensive to be certified for organic. Your farm cannot be adjacent to a non-organic farm. In order to be considered organic, you have to be like in an oasis of organic agriculture to be technically certified that.

In addition to challenges in addressing the overly onerous organic certification process, interviewees and organizations discussed the challenges the City and County of Los Angeles initially posed for sidewalk vendors, cottage food producers, and residential food producers; people were fined for selling food in their communities on the sidewalk, fined for making bread in their home, and fined for growing food in the parkways near their home. For example, one interviewee discussed the initial challenges associated with informal food entrepreneurship of making food products in residential settings, stating:

> We could look at the Cottage Food Act as a great example [of laws being counterproductive to food access and entrepreneurship]. There were all of these home-based home cooks running food businesses, essentially, out of their homes, and actually it was a celebrated part of local food economies you think about. So the Cottage Food Act came about because there was a bread baker in Silver Lake who is selling his bread to these…restaurants, and then got in trouble with Environmental Health.

Interviewees often characterized many of these regulations as implicitly favoring monied interests and more powerful entities within the city and being intentionally counterproductive to building food movements. For example, one interviewee said the following in the context of growing food in parkways,

> And I think food growing, another perfect example [of legal issues]. Ron Finley, growing food in the parkway right outside of his home, beautifying the neighborhood, creating food access. Gets in trouble, gets cited, city tells him to dig up the garden. Very common when it comes to urban food growing.

Talking about the same issue (growing food in parkways) another interviewee more explicitly pointed to the opposition formed by people with more economic means in wealthier neighborhoods and a lack of understanding of the importance of using space for growing food in lower-income communities:

> When I was talking to you about the parkway thing, one of the lines I used to use when I was trying to inform an upper or middle class person who has no clue about the importance of people growing their own things, I would say green is the color of money and by that, I meant those neighborhoods that were full of green were full of money. So, all those neighborhoods on the west side that have luxuriant plantings including in the parkway, luxuriant lawns, that reflects the wealth that's there. If you drive anywhere in South L.A., you will find besides the vacant lots, you'll find a lot of dirt… and I said in many parts of the city, the parkway is one of the few places that people can grow something, could plant something that's alive.

Another interviewee discussed how these antagonistic laws were often supported by powerful interest groups (including other community actors, like neighborhood councils), making these more difficult to change:

> Street vending was very controversial and still is in some corners. It had a huge opposition, powerful moneyed opposition which was business and a lot of neighborhood councils, like the Not in My Backyard NIMBY folks were absolutely against legalizing street vending.

While organizations have largely been successful in changing these initial obstructions (as discussed in the following chapter), the continued push against overly restrictive policies keep organizations from engaging in other endeavors.

Regulatory ambiguity. Even for regulations not necessarily seen as antagonistic to promoting food system resilience, the ambiguity of laws and inconsistencies across laws/regulations at different levels of governance create additional burdens actors try to navigate the food system in Los Angeles County. Interviewees discussed the challenges in promoting innovations in the food systems (many of which begin informally and outside of the formal economy), because there is a lot of "gray area" in terms of what is legal or illegal. For example, one interviewee stated, "We are working in and around informal economies all the time when it comes to food. Food entrepreneurs ... I mean, I don't know, because I've been in the food space so long so it's hard for me to compare to other industries, but I would just say there's a lot of shades of gray around what the law accounts for in terms of food economic activities." Speaking to this issue, the same interviewee discussed the legal ambiguity for actors outside of the formal economy, stating

> So it's not always even low-income entrepreneurs who are already marginalized from the economy. It's food entrepreneurship happening outside of the formal economy, if that makes sense. So there's shades of gray when it comes to the vulnerability there [in the informal food economy]. But anyways, it's like, it happens, and then the law catches up, right?

As another example, one interviewee characterized regulations as being difficult to interpret and ambiguous: "We have rules and regulations that are arduous, but they are… completely open to

interpretation, there has been no systemic like… way of interpreting those… so we are just like creating systems [to address these ambiguities].” Another interviewee noted the hesitancy in donating food, and thus increasing food access, due to concerns with the complexities of the legal requirements/restrictions surrounding donating food donation, “Honestly, other resources on where to donate food because it's a little tough to donate sometimes, just because of all the legality behind it and food spoiling.” Another interviewee discussed the complexities surrounding the legal requirements/restrictions of food donations across different public health jurisdictions stating,

> We've worked with several health departments. We've worked with Orange County, we've worked with Long Beach, we've worked with LA, they're on board with what we do. Their thing is, "Well, are you doing a temperature control thing?” Do you really need to if it's going from Trader Joe's and then three miles away to a pantry? How strict do you need to be? At the same time, they encourage donations. The health code encourages donations. A lot of people don't know California health code has sections built in that say, "Donate the food, if you can, to a non-profit."

As another example adding to this theme of needing clarity in food donation information, the Los Angeles County OurPlan Sustainability Plan discussed the following goal: “Promote and communicate source separation, organic waste collection requirements, food waste reduction and donation, local organic waste recycling programs, and conduct targeted, sector-based educational campaigns” (p. 144).

Challenges for small-scale farmers

Organizations and interviewees commonly discussed the hardships facing smaller-scale farms. Most frequently, these data sources described environmental stressors (e.g., temperature and precipitation changes, wildfires, drought, climate change), logistical challenges in terms of distribution, regulatory challenges, and economic stressors. Planning and policy documents

discussed these issues less explicitly, instead “encouraging” and “supporting” small scale and urban agriculture. These compounding issues may be too much for small-scale producers to take for an enduring time period without interventions; as one interviewee stated, “So a lot of our farmers are saying, yeah in a few more years, I am gonna give up, like I am not going to be able to do this anymore.”

Environmental stressors. Interviewees and organizations, in particular, described the environmental challenges that small farmers face (e.g., drought, climate impacts, wildfires). Furthermore, these were farmed as being more burdensome for smaller-scale farms than for larger corporations, adding to their precarity and ultimately threating food system resiliency. As an example, one interviewee stated the following in terms of drought and climate impacts creating disproportionate threats for smaller scale producers,

> I mean, I think we're actually seeing risks in terms of drought and the sort of climate impacts on farming. And I think those kinds of impacts affect smaller farmers much more at a much deeper level than they affect larger corporate farm. The small farmers that we work with are trying to survive. And when water resources or other major resources they need to run a farm aren't available then it's going to be a problem.

Logistical challenges. On the small-scale production end, farmers go through laborious and inefficient processes to attend farmers markets. As one interviewee stated, “Farmers markets are really funky in that you are relying on a dozen or more people to drive from four to five... so anywhere between an hour to five hours away to set up a bunch of equipment, load up their tables, sell and that could be up to ten hours and then drive back an hour… like load up their

things and then drive back an hour to four back. It is a miracle that 99 percent of the time, everybody shows up and gets home safely."

Regulatory challenges. Adding to challenges for farmers are regulatory barriers. These can be economic (e.g., organic certification being too costly), logistical (e.g., farms being in too close proximity to a conventional farm to acquire organic certification), and cultural (e.g., regulatory information being provided in inaccessible languages). Related to the inability for small producers to become organic certified, one interviewee stated the following:

> We've seen them facing challenges to actually being organic certified. A lot of the produce that we distribute we have to say it's sustainably grown, we can't say it's organic because those farmers just couldn't afford the certification process or like because there's certain regulations that they just can't afford to comply with or they don't have the capacity to for whatever reason and then because they're a smaller operation so that affects their ability to sell. If they can't use an organic certification or label then they aren't as marketable.

As another example, Community Services Unlimited discussed the certification process as being too onerous and costly, stating the following the organization website: "The certification process is onerous, expensive and difficult for small growers to participate in. Many small farmers who have grown organically for years have found it hard to become certified." Interviewees also discussed how regulations were often not accessible to small scale farmers, particularly those who do not speak English or Spanish:

> And the other thing that we've seen is a barrier locally, regionally is like when new regulations come down on farmers, a lot of those regulations are translated into the languages that the farmers need. Maybe they're translated into Spanish but a lot of the time there aren't translated into Hmong and there are a lot of Hmong farmers up in Central Valley or Vietnamese or some of the other languages that the farmers speak. So

> there needs to be extra work done to ensure that those small farms, those communities actually understand the regulations that are being imposed on them.

Economic hardships. Small-scale famers are described as facing increasing challenges due to rising costs of leased land, increasing difficulty in competing against specialty (e.g., Whole Foods, Trader Joe's) and conventional (e.g., Ralph's) grocery stores, and difficulties in earning enough money selling at farmers' markets. As one interviewee framed the issue, "small farmers [are] struggling in a global food economy." As another example, an interviewee discussed the economic frustration that small scale producers are facing in making enough money at market venues: "Some of the farmers that were involved in markets for a long time have dropped out because they're just very frustrated, can't make a good living just by doing a farmers market." Another interviewee echoed these concerns, discussing the challenges for local farmers to compete at farmers' markets against global suppliers able to sell food more inexpensively at large grocery store chains:

> So food at the farmers market is more expensive, how do we deal with that? How do farmers' get a fair price for their food, if they are constantly competing with the prices at Trader Joe's? Are they honestly getting a fair price? There is an economic element for our farmers of…being in need.

In an attempt to compete with conventional produce, some smaller scale farms are growing produce that mirrors varieties sold at conventional grocery chains (and represent less genetic diversity). One interviewee discussed this issue stating,

> There are some farmers that are pushing the boundaries and growing new stuff and really chef-driven, health-driven, and culturally driven, but you don't see that as much like "yeah orange carrots really sell. The red and yellow ones are cool, but they are not really selling." And farmers are having to conform a little bit more to like back to… like it takes away the farmers' market edge. You know? Having something that you can't really find at the

> grocery store… I think we see that farmers are really sticking to the stuff that they know they are going to sell.

The Los Angeles County Community Action Plan referenced some of the stressors facing farmers by discussing how "establishing local farmer's markets has the potential to provide community residents with a local source of food, protect local agricultural lands, and support local agricultural jobs."

Reliance on volunteers and unpaid labor

Across organizations and interviews, there was a clear theme related to the reliance on volunteers and unpaid labor. In general, organizations rely on volunteers to carry out programs or day to day functionality. For example, many interviewees described their ability to carry out programs due to commitment of a core group of volunteers, mostly comprised of seniors, students, and persons with disabilities. The recruitment of volunteers, the training of volunteers, and managing of volunteers is a time-consuming and challenging aspect of running many of these organizations. As one interviewee noted, "So, it's a constant effort for me to keep good volunteers and to constantly recruit new ones and so I am very much hands on and I am afraid because I don't ... I think that if I withdrew, the organization would just cease to exist." As opposed to paid staff, volunteers (while incredibly helpful and necessary to the functionality of these organizations) are less reliable, and attrition is an issue. In addition, volunteers are often asked to carry out a number of different tasks within the organization, adding to the void when longer term or established volunteers leave due to personal reasons (e.g., taking on a new job). As one interviewee stated, "And then you need to find volunteers who are motivated, committed, reliable and who have some knowledge of gardening, either because you train them,

or because they come to you with that knowledge. And because there's so much need, gosh, our volunteers get asked to do so many different kinds of things."

Chapter summary

To summarize, constraining funding structures (e.g., reliance on grants and nonprofit funding mechanisms that deter or delay organizations from their missions); environmental risks (e.g., wildfires, climate change, drought); wasteful production and distribution networks (e.g., routine and extreme food waste); economic and social inequality (e.g., inequitable access to food in lower-income and historically marginalized neighborhoods); competition over space and land use (e.g., gentrification); lack of knowledge (e.g., inability to prepare or grow food); onerous and prohibitive regulations (e.g., organic certification process); economic and logistical challenges for small-scale farmers (e.g., competition with conventional grocery store prices); and reliance on volunteers and unpaid labor (e.g., recruiting volunteers to carry out programs) threaten food system resiliency.

As seen in Table 6 below, using the resilience and ecofeminist frameworks provides a lens for examining how characteristics identified as barriers to promoting social-ecological resilience within urban food systems limit adaptive capacity, increase vulnerability, or hinder opportunities for transformation. Furthermore, as discussed below, these barriers to resilience also inhibit social and environmental justice for urban, peri-urban, and regional actors within the urban food context.

Constraining funding structures. Constraining funding structures for organizations seeking to build social-ecological resilience in food systems (e.g., time consuming grant application processes, requirements to use funding agency curriculum) limits adaptive capacity

by dampening the innovative capability of these organizations. Organizations are constantly burdened with trying to find funding to keep their employees on payroll (e.g., find project grants that may be less related to organization missions) or to keep their community service efforts maintained (e.g., find funding to ensure that youth programs remain available). These time and resource constraints keep organizations vulnerable (e.g., reducing their resiliency), which in turn increase vulnerability and uncertainty in the communities which depend on them for food or related resources. These limitations inhibit the ability to work on advancing transformative opportunities; organizations are ill-equipped to address the persistent, structural problems in the food system without significant support and face structural constraints themselves (e.g., competition over land use and space). Furthermore, reliance on funder support for programs limits innovative potential (because organizations have to apply for grants that do not directly advance their mission and/or because organizations have to abide by funder-provided curriculum or standards). Curriculum might be developed in other geographies (e.g., state level) and may not reflect the needs of the diverse communities which these organizations serve. For example, curriculum may not reflect the diversity of dietary cultures present in diverse urban centers, and as a result, may present Western diets as normative and ideal (which devalues a diversity of food cultures and knowledges). Importantly, from a justice lens, these challenges add additional burdens for organizations serving diverse communities; these organizations have to take already limited time and resources to translate or adapt curriculum to community needs. Furthermore, the competition over economic resources creates competition among organizations as opposed to promoting adaptive capacity through initiating collaborative, localized efforts in addressing stakeholder needs. In addition, these challenges encourage a reliance on unpaid labor, which in

turn creates vulnerability through volunteer attrition and turnover and the continual need to recruit and train volunteers.

Environmental risks. Supporting the impediments highlighted by interviewees, organizations, and planning/policy documents, Pathak et al. (2017) identified a series of environmental threats to agricultural production in California. These include overall temperature increases as well as temperatures changes (e.g., reduced durations of winter chill hours), reduced water availability for irrigation and higher evaporation and transpiration, increased frequency and intensity of heatwaves, and increased pests. Furthermore, as a result of these environmental changes, farmers are expected to see economic losses due to decreased crop yields and decreased crop quality (e.g., lower quality fruits and produce, such as high value strawberry crops) (Pathak et al., 2017). Importantly, these impacts will disproportionately impact smaller-scale farmers with less capital, as these farmers are already economically stressed and cannot easily cover crops losses or lower yields. In addition, some of these environmental risks (e.g., heat waves, wildfires) present greater health risks for vulnerable farmworker populations. These environmental risks (e.g., water scarcity, climate change, temperature variability, wildfires, pests and disease) increase the vulnerability of the environmental systems across geographic contexts (i.e., urban, peri-urban, regional, and global) by stressing the resources needed for growing food (e.g., healthy soil, water) and ecosystem functionality (e.g., water stress, pests, disease).

Economic and social inequality. Existing literature suggests that a variety of forces contribute to lower food access within lower income and/or communities of color, stemming from legacies of economic and racial segregation, due to changing demographics (known as "white flight" to the suburbs) that resulted in a dramatic closure of inner-city grocery stores

(Walker et al., 2010). At the same time, grocery stores have continued to expand in size from an average of 6,000 square feet in the 1920s and 1930s to as large as 60,000 to 80,000 square feet by the 1960s (Gottlieb & Joshi, 2010). Larger grocery store chains tend to concentrate on the outskirts of inner cities and in areas where land is less expensive and more accessible by automobile travel; this allows larger chains to provide more affluent clientele in the suburbs with parking, larger commercial spaces, and better-quality food (Gottlieb & Joshi, 2010; Walker et al., 2010). By drawing clientele away from neighborhood stores (due to the ability to provide better parking and longer store hours), neighborhood stores are closing as consumer bases become less reliable (Gottlieb & Joshi, 2010; Walker et al., 2010). Inner-city communities (many of which are lower income and/or communities of color) are left with fewer options for food, particularly options accessible by public transportation (Walker et al., 2010). Due to fragmented land in urban cores that limits abilities for finding appropriate lot sizes for grocery stores and the economic drive for retailers to serve more affluent communities, limited food access in urban centers has persisted (Gottlieb & Joshi, 2010; Walker et al., 2010).

As exemplified by a lack of grocery stores in lower-income and or communities of color, sources of economic and social inequality are systemic impediments that manifest acutely within localized food systems, leading to inequitable access to food and food-related benefits and persistent vulnerability across multiple facets of urban systems. For one, limited and disproportionate access to grocery stores and healthy food options enables vulnerability in the built environment and limits the ability to respond to social and/or environmental shocks. For example, in the case of a pandemic, community members unable to shop for food within their own neighborhoods must travel to grocery stores in other communities (this contributes to the

spread of disease across communities). Furthermore, in the case of a disaster event where services are disrupted (e.g., public transportation, supply chains), fewer grocery store options accessible within communities may lead to civil unrest, poorer health outcomes and hunger, and/or other social, economic, health hazards that pose threats to resiliency. Furthermore, limited food infrastructure in the built environment imbeds and favors a reliance on automobiles, which discourages active transit modes for accessing weekly groceries. Additionally, the need to travel outside of communities for food options (which is particularly burdensome for community members with multiple jobs or limited transportation options), may contribute to buying food in larger volumes less frequently (which can contribute to food spoilage or waste).

Economic and social inequality also create vulnerability by limiting capacity/ability for community members to actively engage in changing food system (e.g., participate in nutrition education classes, grow food at community gardens, attend city council meetings), by adding various economic and time constraints and other social burdens; this limits opportunities for building community adaptive capacity (e.g., by limiting stakeholder involvement in policy and planning, by limiting community health outcomes) and for engaging in transformative processes (e.g., by limiting ability to support community food cooperatives and community-led initiatives). Individuals living within lower income and or communities of color face a series of constraints that not only limit opportunities for accessing foods for optimal health (e.g., these individuals most likely to live in neighborhoods with an abundance of energy-dense, nutrient-poor foods and a lack of affordable, nutritious foods and/or a lack of economic means to purchase higher quality foods), but face various constraints that make accessing healthier food even more challenging (i.e., difficulties finding sufficient time, energy, transportation, information, and financial

resources to seek out healthier food options) (Walker et al., 2010; Maguire. 2017; Cubbin & Winkleby, 2007). These additional time, health, and resource burdens enact greater constraints on communities already facing vulnerabilities due to economic and racial inequities (e.g., less opportunity to accumulate wealth, less public and private investment in community resources and education). Furthermore, these burdens reinforce inequality and oppression and disproportionately impact people of color, lower income communities, people of different ability, immigrants, women, and other vulnerable communities. Importantly, inequitable access to food-related benefits (e.g., social networks and relationships, health, cultural connections, food knowledge and education, living wages in the food sector, food entrepreneurship, neighborhood gardens and beatification) in turn limit access to other societal benefits as well (e.g., health and wellness, community support, economic stability), which not only results in unjust outcomes, but limits the adaptive capacity of the entire urban system and produces chronic vulnerability.

Food waste. Existing research suggests that a large factor in food waste (and the resulting vulnerability for social-ecological dimensions of urban food systems) is the commodification of food and capitalist, corporate food system. Additional factors relate to refrigeration capacities and a lack of regulations. For example, in their multiple case-study examination, Garrone et al. (2014) found that retailers wasted food due to sales contracts that that required a 20 day residual shelf-life of products when delivered to consumers; after internally prescribed sell-by dates of 10 days after product production, food inventory is moved off of shelves (becoming waste). In addition, Garrone et al. (2014) found that refrigeration is key in reducing wasted food (e.g., kitchens can donate surplus food if equipped with coolers to reduce temperatures of surplus food). Furthermore, Gruber et al. (2016) found that managing waste at wholesale suppliers and

within the retail sector is crucial to minimizing food waste; furthermore, waste reduction requires addressing logistical and regulatory constraints that increase likelihood of food being wasted.

Extreme food waste illustrates vulnerabilities in the predominant food system; wasting food is an inefficient use of resources and environmental and social inputs that stress social and environmental systems unnecessarily (e.g., using energy, land, labor, water that is ultimately destroyed or wasted). Furthermore, food waste contributes to environmental detriments (e.g., methane gas emissions) which exacerbate vulnerabilities by contributing to climate impacts or other environmental problems (e.g., landfills). Wasting food devalues the food itself as well as the environmental and social inputs and reinforces food as "waste" rather than a resource. For example, perfectly good food can be salvaged and donated to people in need, and spoiled food can be used for composting (and building soil health) or for other purposes (e.g., energy production).

Competition over space and land use. Literature supports that conflicts pertaining to urban land use and rights to space occur frequently within urban spheres and in respect to urban agriculture; urban planning and development projects often prioritize economic development and housing over community gardens (Ghose & Pettygrove, 2014; Rosol, 2012; Schmelzkopf, 2002; Smith & Kurtz, 2003). For example, community gardens are often less valued than other uses within urban spaces (e.g., commercial uses, parking development) (Ghose & Pettygrove, 2014, Barraclough, 2009; Domene & Saurí, 2007), creating a series of conflicts in a shared vision of the future. Still operating within dominant classist and racists ideologies, the process of expanding community agriculture often evokes conflicts pertaining to what kinds of people are

allowed in public spaces and what forms of public green space are seen as legitimate (Ghose & Pettygrove, 2014, Barraclough, 2009; Domene & Saurí, 2007).

The findings highlight how food system conflicts over space are occurring at every scale within the urban sphere as well as in peri-urban and regional agricultural spaces. In terms of building resilience of within urban food systems, competition over urban spaces and land use limits adaptive capacity by creating conflicts rather than cooperation (e.g., disparate visions for how vacant land should be used), by creating precarity/vulnerability and uncertainty for those will less power (e.g., renters, non-property owners), and by limiting innovation potential (e.g., constricting how space can be used creatively and in co-beneficial ways). Through an ecofeminist lens, these conflicts privilege certain types of bodies and nature, privilege power of property owners over non-owners, and privilege economic uses over social/cultural/environmental uses.

Regarding urban agriculture in particular, many of these tensions over space in Los Angeles were rooted in a preference for automobiles as a source of transportation (e.g., destroying or preventing urban agriculture to ensure greater space allocated for parking) and for economic development projects (e.g., luxury housing). Expanding and adopting public transportation and requiring that developers set aside space for urban agriculture (e.g., even on rooftops or patios) might be a point of alleviating some of these conflicts. However, as economic inequalities continue to rise along with urban space becoming more limited and land prices continuing to rise, we should expect to see these tensions grow over time without interventions. Furthermore, truly incorporating food into urban spaces will require a rethinking about what type of “nature” is welcome within the city centers.

Onerous and prohibitive regulations. Overly ambiguous, onerous, and/or prohibitive regulations limits innovative capability for making changes within urban food systems by limiting the ability to test innovations (e.g., creatively using space to grow food, engaging in diverse forms of food entrepreneurship) and by diverting attention to changing restrictive policies rather than focusing efforts in expanding other initiatives. Furthermore, the ambiguity of the regulatory environment creates uncertainty, which discourages engaging in innovative actions (e.g., beautifying neighborhoods through urban parkway gardens) and/or taking advantage of entitled benefits (e.g., applying for food assistance benefits). These conditions of uncertainty privileges people, communities, and/or organizations with economic power and the resources to advocate for or against certain actions in the grey area of the law (e.g., fight to make street food vending illegal, call city officials to complain about parkway gardens, fight to keep tenants from being able to grow food on property). Furthermore, these ambiguities create additional barriers, fears, vulnerability for undocumented and immigrant populations. For example, regulations may not be available in diverse languages for farmers (e.g., Hmong) or ambiguity surrounding existing legal frameworks (e.g., immigrants applying for public food assistance) may discourage taking advantage of policies meant to benefit community members.

Lack of knowledge/ familiarity and disconnection with food. There appears to be limited research regarding how connected people are to food systems; instead of seeking to understand how much consumers know about food production, there seems to be more emphasis on identifying consumer preferences for marketing purposes (Howard, 2005). However, reinforcing the findings that urban consumers have limited understanding of the food system, a survey of 1,000 randomly selected households in San Mateo, Santa Clara, Santa Cruz, San Benito, and

Monterey Counties in California indicated that only 15.8 percent of respondents agree that they "already know enough about how my food is grown, processed, transported, and/or sold." Furthermore, 59 percent of respondents agreed that "It is difficult to find out information about how my food is grown, processed, transported and/or sold" (Howard, 2005).

Related to the previous issue (e.g., ambiguity in regulations), lack of knowledge or understanding of existing food policies meant to improve resiliency (e.g., food donation policies) limit adaptive capacity (by creating additional burdens on individuals, community members, and community organizations in fighting "food myths" and misinformation) and add vulnerability (by diminishing the ability to take advantage of benefits, like reducing food going to landfills and increasing food donations for community members in need). Furthermore, a disconnect from food production practices and knowledge adds to vulnerability by placing knowledge of growing food (a fundamental skill necessary for sustaining life) with a small percentage of the population. Relatedly, a lack of understanding of our predominant food system in turn makes community mobilization and change more difficult (as community members may not be aware of existing, systemic social-ecological problems necessitating transformation). Furthermore, a lack of consumer information regarding the current food system, nutrition education, food preparation, and other facets of the food system privileges corporate information/advertising (by making information more difficult to access) and enables industrial, corporate food models (by making consumers less able to make informed choices). These features limit adaptive capacity by enabling the existing food model and limiting a collective, social movement behind changing the exiting system. Furthermore, a disconnection from food production knowledge reinforces a disconnect from nature (as consumers disconnect food from the natural processes involved in its

production but rather see food as commodities) and a disconnection form food as nourishment (as consumers are fighting misinformation surrounding nutritional information and health). Furthermore, these disconnections from food invisibilize the workers within the food sector, the globalization of the food system, the environmental destruction of food production practices, and the animals processed for meat (Adams, 2015; Gaard, 2017). A lack of understanding of the vulnerabilities, exacerbates vulnerability by reinforcing the status quo and limiting adaptive capacity (e.g., an anticipation and understanding of risks are needed in building greater ability to prepare for and respond to risks).

Challenges for small-scale farmers. Due to the continued process of the 'retailing industrialization' (i.e., the market concentration of supermarkets), a handful of grocery stores have persisted in gaining greater influence in the development and selection of food products (Gottlieb & Joshi, 2010). In addition to the underinvestment in lower-income and/or communities of color (and the resulting disparities in community food access), this consolidation of grocery stores adds to precarity of food systems. Consumers, workers, distributors, and suppliers have fewer choices and a result, less ability to make alternative choices that would build social-ecological resilience of food systems (e.g., pay employees higher wages, produce greater genetic varieties of produce, purchase sustainably and/or ethically sourced foods). By being figuratively forced to place all eggs in one basket, actors along food supply chains are limited in abilities to adjust behaviors, work collaboratively, and make innovative or adjustments; ultimately these restrictions limit adaptive capacity. Importantly, the market concentration of grocery stores and their market power within the food industry limits the ability for alternatives to compete (e.g.,

food cooperatives and farmers' markets have difficulty competing against heavily subsidized and artificially low food prices and low wages of corporate grocery stores).

Relatedly, the economic vulnerability for smaller scale, regional farmers limit adaptive capacity within urban food systems by decreasing opportunities for urban consumers to support and/or interact with a diversity of food producers (e.g., women-owned, community-supported, farmers of color, organic growers) and purchase a diversity of food varieties (e.g., culturally relevant, heirloom crop varieties); furthermore, the economic precarity increases vulnerability for small farmers, which in turn threatens sustainable agriculture and locally, regionally produced food. Furthermore, pressures to compete with global markets result in less agrobiodiversity (e.g., planting conventional crops) and economic stability (e.g., competing with grocery store prices), which also limit adaptive capacity by limiting genetic diversity of crop varieties and threatening operation of smaller scale farms (both of which can help bolster against environmental threats, like disease, pests, or drought). Furthermore, these constraints threaten alternative, diverse, small scale, and/or environmentally sustainable agriculture and privilege industrial, corporate food models, making transformational change more challenging.

Reliance on volunteers and unpaid labor. Finally, the reliance on volunteers and unpaid labor adds vulnerability to alternative food systems (through added uncertainty due to volunteer attrition); furthermore, a reliance on volunteers adds instability in managing programs (many of which are powered by volunteers) and adds burdens to organizations in recruitment and training. Furthermore, alternative food organizations predominantly rely on gendered labor for operation. This can be viewed through two primary lenses. On one hand, this may illustrate the challenges of pushing through alternative or innovative food practices, particularly for communities with

limited labor to offer without pay (i.e., communities where members work multiple jobs) and limits adaptive capacity (i.e., restricts diverse stakeholder participation). On the other, this may highlight the vulnerability of the exiting food system and the exploitation of gendered labor (e.g., relying on women, seniors, students, persons with disabilities, youth) to patch structural deficiencies in food urban access.

Table 6. Barriers to Resilience by Theoretical Frames

Barriers	**Resilience**	**Ecofeminism**
Constraining funding structures	• Limits innovative capability • Hinders ability address community needs • Discourages collaborative action	• Encourages reliance on unpaid labor • Creates additional burdens for organizations serving diverse communities • Less inclusive of traditional diets
Environmental risks	• Stresses resources needed for growing food in urban and non-urban contexts • Stresses ecosystem functionality	• Increases vulnerability for smaller scale farmers with less capital • Increases risks for vulnerable farmworker populations
Economic and social inequality	• Enables vulnerability in built environment • Limits capacity/ability for community members to actively engage in changing food system • Market consolidation of grocery stores	• Disproportionately impacts people of color, lower income communities, people of different ability, immigrants • Reinforces inequality and oppression
Food waste	• Wastes environmental and social inputs • Contributes to environmental detriments • Inefficient use of resources	• Devalues environmental and social inputs • Sees waste as “waste” rather than resource
Competition over space and land use	• Limits innovation potential • Creates conflict instead of cooperation	• Privileges certain types of bodies and nature • Privileges power of property owners

Competition over space and land use (continued)	• Creates precarity/ vulnerability and uncertainty	• Privileges economic uses over social/ cultural/ environmental uses
Onerous and prohibitive regulations	• Limits innovative capability • Creates uncertainty	• Privileges people, communities, and/or organizations with economic power • Creates additional barriers, fears, vulnerability for undocumented and immigrant populations
Lack of knowledge/ familiarity and disconnection with food	• Creates additional burdens on individuals, community members, and community organizations in fighting "food myths" and misinformation • Makes community mobilization and change more difficult • Places knowledge of growing food with small percentage of population	• Disconnect from food production practices and knowledge • Disconnect from food producers and food-sector workers • Disconnect from nature and food as nourishment • Privileges corporate information/advertising • Enables industrial, corporate food model
Challenges for small-scale farmers	• Economic vulnerability • Pressures to compete with global market result in less agrobiodiversity and economic stability • Threatens sustainable agriculture and locally, regionally produced food	• Threatens alternative, diverse, small scale, and/or environmentally sustainable agriculture • Privileges industrial, corporate food models
Reliance on volunteers and unpaid labor	• Adds uncertainty through attrition • Adds burdens in recruitment and training	• Requires gendered labor

7. EMPIRICAL FINDINGS: BUILDING RESILIENCE THROUGH INNOVATIVE FOOD SYSTEMS

I mean, I think that's kind of the power ... That is the power of food, because there are always other co-benefits to doing food programs or food investments. -Interviewee

Existing scholarship has identified potential strategies in building food system resilience within urban contexts. Santini et al. (2019) found that having city stakeholders participate in assessments where they evaluate their food systems (e.g., discuss where food is produced; where food is processed; how food is marketed; what kinds of food people eat; the levels of food security and nutrition in different communities; how food is waste managed; and who the government and institutional actors involved in the food system are) raised awareness of different points of vulnerability and opportunity in the food system, enabled the basis for policy transformation and implementation, and resulted in more targeted strategies for improving food systems. These exercises also reoriented urban consumers to food producers

Furthermore, city leaders are beginning to head some of the calls from those advocating for a re-localization of food, by approaching cities as complex systems, where can food can play an important role in improving social and environmental outcomes. Specifically, urban actors are beginning to conceptualize and enact a policy and theoretical agenda that accounts for "deeply inter-locking nature of economic, social and environmental systems" to promote "more cross sectoral approaches to decision-making" (Misselhorn et al. 2012, p. 10; Sonnino, 2014). Seeing these changes in practice, is emblematic of a shift in conventional tendencies focusing on single issues and an embrace of more systemic perspectives that take the interrelatedness of the entire food chain and the entire food cycle into account (Lang & Barling, 2012; Sonnino, 2014).

Findings

The study's findings highlight several key themes for transforming our current food system to build resilience. These measures include activating the citizenry through the expansion and improvement of civic mobilization and education and the empowerment of vulnerable populations (e.g., youth, women, people of color, seniors, lower income, and persons with disabilities); policymaking and institutionalizing change in multiple forms (e.g., formal and informal) and at various levels of governance (e.g., school district, city, county, state); and embracing and supporting an integrated, diversified urban food system (e.g., supporting regenerative agriculture, reintegrating agriculture into all urban spaces, bridging small scale food production with community demand, and promoting environmental stewardship and regenerative agriculture).

Activating the citizenry

The need for activating the citizenry emerged as a cross-cutting theme for transformation (across organization content, interviews, and policy/plans). This activation occurs/ can occur in a variety of contexts and through numerous strategies. For one, there is a call to improve and expand civic engagement (e.g., changing seats of power, mobilizing community members) in order to change food systems. Across all data sets, community members are encouraged to take on leadership positions in their communities, get involved in policymaking processes, and work to enact local changes (e.g., advocate for better nutrition within school districts). Related to civic engagement, interviews, organizations, and policy/plans emphasized improving public, K-12 education. These messages were expressed differently across data sets; organizations and interviewees stressed the need for comprehensive changes in education (e.g., making

connections between the need for education in household budgeting, and horticulture, and food preparation) while policies/plans stressed education in nutrition (e.g., giving citizens tools to make better, healthier food choices). Finally, within this theme of engaging the citizenry, content across all three datasets discussed the need for focusing efforts in getting the youth, women, and people of color, and other vulnerable populations engaged in the food system through education, community meetings, and community outreach (e.g., teaching girl scouts how to grow their own food).

Improving and expanding civic engagement. Within organization website content, interview transcripts and (to a lesser degree) policy/plan documents, a theme emerged related to creating greater opportunity for citizens to engage in the participation process and mobilize in creating change within the food system and beyond. As one interviewee noted, "When people are able to mobilize themselves and mobilize others, that's the agency that they carry and help to change each other's lives. And at that point we render ourselves [as an organization] useless, but you got to be able to activate enough people to that point in order to get us to that area." Mobilizing the citizenry to engage in the food system was framed as a means of enacting structural change and shifting power dynamics in multiple ways: advancing food policies at local and state levels through community advocacy, creating changes in the urban food environment (e.g., establishing a school garden), changing political and organizational power structures to embed community actors in decision-making processes, and providing a starting point for enacting change within community structures and across other sectors (e.g., housing, transportation). As an example, one interviewee emphasized the importance of bringing community perspectives into the urban food system advocacy stating,

> … a lot of the peers that I have in this space, a lot of them have public health backgrounds, there's many people who have backgrounds in food growth, like growing food, or are working in the food system itself. We did not come with that background. I think that's what makes the work that we do in health equity a little bit more unique... Not saying that the work that other organizations are doing is not as good, because it's phenomenal work, but I think our perspective and the way that we approach the work is unique because our viewpoint is not based in what we may have learned, it's more-so the experience that we've had with the food system.

Mobilization of community members takes on several forms and within a variety of spheres (e.g., speaking with state representatives, creating spaces and opportunities for community members to gather and connect, encouraging action within school boards) and with a variety of community actors (e.g., farmers, students, seniors, parents, businesses). Mobilization goals centered around a variety of agendas, from longer term political change (e.g., advancing community members in positions of leadership) to more immediate actions (e.g., fundraising for healthy afterschool snacks) to more broad goals (e.g., encouraging civic mindedness). As an example, an interviewee described the importance in changing political power structures, by bringing community member experiences and perspectives into decision-making spaces stating:

> …the people who sit in the seats of power, they have antiquated viewpoints as to what community building needs to look like or what built environments needs to look like from an economic standpoint. That has to shift. In order to shift that, you're going to need people with more robust points of view and more modernized points of view who are sitting in those seats of power…those faces are changing slowly but surely. Not just in decision-making spaces but also in organizational spaces too… it's also empowering to see that some new faces and some new energy is being brought to certain spaces that are open to working collaboratively to be able to solve the systems that we want to solve. It's going to be great man.

Another interviewee spoke to the role of organizing community members in order to ensure their input in shaping policy advocacy, stating, "[We work] in partnership with many other agencies around the state or around the county. We organize low-income people directly…they function to direct what kind of policies we address and what kind of stances we take on them." The API

Forward Movement website also discussed activating community members on their website: "Activating community member leadership, so that residents can assess, discuss, and make change around local issues affecting their ability to be healthy and active."

As an example of directing community members to organize in achieving more immediate, community-level change, the Champions for Change website (affiliated with the Calfresh food assistance program and the California Department of Public Health) called for parents to get involved and engaged in the food system in a variety of ways: encourage school districts to offer more fruits and vegetables, work with parents and school officials to establish a school garden, encourage teachers to add nutrition and physical fitness to curriculum, work with neighbors to encourage local convenience stores to carry fruits and vegetables, work with local farmers' markets to accept public food assistance (e.g., Women, Infants and Children [WIC] support), and work to establish a local farmers' market if one does not yet exist. To promote civic participation and advocacy for farmers, the Los Angeles County Farm Bureau encourages participating in the Urban Legislative Awareness Program (ULAP) where young farmers and ranchers are encouraged "to participate in legislative briefings on state and national issues" and "meet with urban legislators…and strong supporters of the industry." As another example in calling for collective action in advancing/protecting urban agriculture, in a video posted by Community Services Unlimited, Dr. Diane Kim, a professor at University of Southern California (USC) called for students to organize in opposition to turning a community garden into a parking lot: "But if students banded together and voiced their strong opinion, their strong opposition against plans to relocate the farms, build a parking structure of all things, right? A parking structure, I think the administration would listen to that." The organization also promotes more

general goals of community organizing within the Growing Healthy program on their website, which is described as a tool to "develop an awareness and political consciousness to the food access and environmental justice issues impacting their communities." As another example of more broad goals to inspire community organizing, The Growing Experience lists promoting community engagement as a key goal, stating "The Growing Experience seeks to cultivate a sustainable and ethical local food system by providing equitable access to natural foods, promoting social justice through community engagement, and operating as stewards of the land."

Expanding and improving education. In the context of civic engagement, organizations, interviews, and policy/planning documents stressed the importance of expanding education in promoting opportunities for and interest in community engagement. These expansions related to increasing more comprehensive curriculum (e.g., adding classes like civics, budgeting, horticulture, and food preparation classes). In addition, approaches in promoting education sought to connect community members to the food system (and tie these connections in with other curriculum, to food justice issues, to nutrition and health education, and to food policy). For example, one interviewee discussed the tie of education in promoting bottom-up social change and engagement stating:

> But, that's the whole thing. We got to get away from the mentality of government is just there to fix problems by itself. It has to be all of us. That sounds great, and everyone will go, "Yay!" and cheer when they hear that. But then when at the end of the day, are they really going to make that change? That's what it's going to take is mass education. It has to be done in a way that people will accept [change] and actually absorb it and adopt it and learn from it and not that they will resist it.

Interviewees, in particular, stressed the importance of equipping citizens with a more comprehensive education, so as to empower them with the tools they need to engage in the community and within politics. As one interviewee stated,

> It also included education and empowerment, right, because we could grow as much food as we want to but if we're not empowering people with the information of how to use the food, why it's important to use that food, why it's important to have it as a part of their life, the history of food access in our community and how they can obtain it. Then we're doing the community a disservice at that point.

As an example, an interviewee discussed the importance of adding courses in civics (so that community members understand policy processes) and courses in budgeting (so that households with limited incomes can plan effectively and be in better positions to engage in community processes):

> How does that have anything to do with what we're talking about as far as food? Well, Algebra 2 is really important, Calculus 1 is really important, right? But so is household fund management. So is how to cook food. So is civics. All these things that have been stripped away in the thought process of adding more and more stem to the education problem. I'm not against them, I'm all for it…The thing is though, what I'm also realizing is that when you look at the household incomes of our community members and the way that the systems are set up for them, how they spend their household income, they don't have the power that they should over the decision making processes that happen to them locally.

In addition to expanding formal education to include more practical courses, organizations and interviewees also discussed how bringing in food issues can complement and improve education in other subjects as well. For example, the Los Angeles County Farm Bureau reinforced the importance of folding knowledge of food production practices into the curriculum, as a way to complement other subjects (e.g., mathematics and language): "… farm visits provide a perfect opportunity for students to use all of their senses to learn, the more they can touch, smell and taste the things they are learning about, the more deeply they will understand and

remember what they learn. Not only do the children learn about agriculture, but the education aspects include math, science, language arts, social science and art and follow state education standards." In addition to advocating for expansion of education in public institutions to include more comprehensive curriculum (that includes content related to food production), interviewees and organizations also advocated for informal education that informs community members of policy relevant to their daily lives. For example, one interviewee stated,

> A lot of what I do, especially this year, is education. That's doing presentations to groups of people. They might be low-income people or they might be people working with low-income people about public benefits and what kind of policy changes we're trying to achieve in those to make those programs more effective and what kind of threats there are to those programs from certain people in government now.

Organizations and interviewees, in particular, characterized changes in education as key in connecting people to the food system (e.g., helping them understand how food is produced), in promoting more sustainable production methods, and in encouraging greater awareness of equity issues. As one interviewee mentioned, education opportunities should encompass "food topics from farm to fork and back again in an urban context." Focusing on sustainability, the Los Angeles Green New Deal highlighted the need to "amplify community education campaigns on the benefits of healthy soils, biodiversity, and regenerative agriculture." In addition, organizations discussed the need to use education in ways that grow consciousness in terms of the myriad of ways the current food system contributes to and reinforces injustices.

Empowering women, young adults, and vulnerable populations. Organizations, interviews, and planning/policy documents frequently discussed the need to empower vulnerable groups by encouraging their participation in the food system. For example, the Safe Place for Youth website stated the following about empowering the youth (especially at-risk

and/or homeless youth through participation in the food system: “Through onsite internships and educational workshops, youth develop workforce and life skills, while cultivating greater self-esteem and self-sufficiency. Witnessing the full cycle of food growth, youth experiencing and/or at-risk of homelessness are offered meaningful work opportunities that highlight their resilience, creativity, and ingenuity.” Other organizations, interviewees, and planning and policy documents mentioned using food to provide support for vulnerable populations (e.g., women at shelters, homeless populations, formerly incarcerated, at-risk youth), by empowering them with the opportunity to grow their own food, learn food-system job skills, and providing a therapeutic space in the garden.

Policymaking and institutionalizing change

Related to community organizing, a strong theme across data sets (interviews, organizations, and planning/policy documents) is institutionalizing innovative changes in the food system through policymaking. These themes were expressed differently in different datasets—interviewees and organizations discussed the ongoing work in reforming existing policies and advocating for innovative food policies and plans at local, city, county, state, and federal levels, while plans and policies (which in themselves already represent policy efforts) discussed the ongoing need to continue to collaborate with food organizations and food experts in developing legislative and planning frameworks that advance resilient food system agendas. Furthermore, plans/policies often presented goals to expand existing policies (e.g., extend a city-level policy to the county level).

Interviewees and organizational reports, media content, and website information

discussed several instances where city, county, state, and/or federal policies were counterproductive to building resilient food systems and needed formal reforms—these antagonisms related primarily to making healthy food access or local food entrepreneurship more difficult. The most salient examples of counterproductive policies at the local level (i.e., city and county level) included: citing residents for growing food in parkways, prohibiting sale of food produced in homes rather than commercial kitchens, and criminalizing street vending. At state levels of governance, organizations and interviewees pointed more to success in establishing policies beginning at the local level, as opposed to facing oppositional state-level policies. At the federal levels, interviewees discussed counterproductive policies in terms of immigration policies being tied to food assistance and the overly restrictive, expensive and challenging organic certification standards.

Emphasizing multiple levels of governance. Organizations and interviewees seem to spend much of their time fighting to change policies and laws that are overly restrictive to promoting food access. In particular, interviewees and organizations commonly referred to policies their organizations helped to push through and policies they continue to work toward advancing, seeing codifying changes in the food system as a necessary step in advancing innovations, changing the food system status quo, and meeting community goals. Interestingly (and worthy of additional research), organizations and interviewees placed equal emphasis and importance in enacting policy changes at a variety of scales, implicitly pointing to the importance of bottom-up progress.

In the context of policy in particular, the urban food system reaches across California as

several food-related policies at the state-level began within the borders of Los Angeles County (e.g., California Homemade Food Act). Even when community organizations and interviewees discussed working to institute positive regulatory changes for people locally in their communities (e.g., working to enact City Council resolutions, zoning code changes), they frequently discussed how local policies fit in with regulations at higher levels of governance (e.g., state and federal regulations). Interviewees discussed the success in legalizing street vending at the city level, before successfully pushing for adoption of street vending state-wide (i.e., Senate Bill 946, the Safe Sidewalk Vending Act). At the state-level, organizations have pushed for healthier foods in California schools (e.g., AB 479 California School Plant-based Food and Beverage Program) and for allowing homeowners and tenants to grow food in their yards (e.g., AB 2561 California Neighborhood Food Act). One interviewee stressed the importance of institutionalizing change locally and across the state arguing,

> If we really want to codify the changes that we want to see in the world, not only for now but in the future, it has to go through policy too, right? Our input has been [with another organization] here locally. We work with other organizations to help to bring forth laws that have impacted all Californians. The Healthy Food Act, as well as the Neighborhood Food Act, the AB 551 in agriculture incentive zones, like all the things that we have touched from a policy standpoint, even looking at social determinants of health and our impact on local housing and affordable housing, those types of things.

As another example (and emphasizing the need for public pressure in getting policies through), one interviewee discussed the need for local regulations and policy changes to require future developments particularly affordable housing units, to require some provisions and space for community gardens (especially if receiving subsidies):

> So, I've gone to meetings with advocates of like building low income housing because one of the things I think the city should do, especially if they're providing any kind of subsidy

> to a builder, they should really require any builder of any multiple housing dwelling to set aside some units for low income housing and we don't have that regulation in L.A. So, it has to come from public pressure. They're not going to do it on their own out of the goodness of their heart and any housing that gets any kind of federal or state or local subsidy, for sure, I would argue should be required to set aside some of their land space outside of parking for a local community garden because that only makes sense. I mean if you're having low income housing and you're getting a break as a builder, you should give something back, and one of the things is you should plan for some of that open area used for parking to be used for gardening for the residents. And until we get that incorporated into laws, it's not going to happen.

Framing policy. In order to enact policymaking, organizations used a variety of frames in advancing their agendas (e.g., issues of public safety, economic development, sustainability, ability, gender justice). As an interesting example, one interviewee noted the success in pushing street vending through due to the framing of the issue as a women's justice issue:

> …really thanks to Me Too Movement, Time's Up, et cetera, et cetera, the changing public conversation, we realized that we were not talking about the gendered element of this fight and that legalizing street vending is a women's economic justice issue. It is a gender justice issue. And it's like, it was right there, but we ... As a society, it's like we can't even name it until we do, and so that I really think helped get us over the finish line in a lot of ways. When suddenly it was like, "Aha!" for policymakers. Women, women in the street, women on sidewalks and public spaces, vending, are vulnerable and are exploited and harassed. And it's not just about them being street vendors. It is also about them being women in space, in public space. So it just, that was honestly a game changer in terms of the conversation.

In addition to using different social framing to push forth policies, when able, organizations often messaged policy goals through community member activism (e.g., bringing community leaders to procedural events) and through research culminating in internal reports (e.g., assessing student nutrition and community food access to grocery stores). As an example of the former, one interviewee discussed success in pushing through a policy change at the state level. The interviewee noted how a community member involved with the organization provided a story that was a powerful narrative and a helpful framing to get legislation changed:

> [Name retracted] … said, "You know, if they would increase the amount of money I have for food by $100 to $200 a month, I could eat the way I did in the hospital, and I would not get sick as often, and I'd save the state a lot of money." That's a message we took to our state legislators.

On the other hand, interviewees discussed instances where framing policy issues in a particular way has been counterproductive to advancing those policies. For example, in the context of Meatless Monday initiatives, one interviewee discussed how associating the issue with veganism as opposed to justice issues, made for more contentious policymaking:

> I will say, because you mentioned the Meatless Monday thing.., they did this vegan motion that got a ton of push back. And so there's something about veganism specifically that still is a real trigger I think for people who see it as an elite thing, as opposed to a justice thing. And honestly, I think if they had just called plant-based, they probably could have avoided a lot of that. So there's semantic charge around veganism.

Pushing gray areas. In addition to using framing, community member participation, and internal research, organizations tested the waters, particularly in terms of pushing the "gray area" of urban food regulations. Essentially, organizations can operate in spaces of ambiguity (until getting in legal trouble) and then use the benefits demonstrated by participating in informal practices to push for formalized changes in their favor. As example of this strategy, one interviewee stated,

> [I was interested in seeing] what that looked like and experimenting with like, is that feasible? Is that's something that we want to be doing? What are the roadblocks? What are the grey areas that we can exploit? Like where… like what rules are in our favor? What relationships are in our favor? Which are not? Which can we change? Like what are the market rules that we can exploit? And how can we make this like a really fun thing?

Implementing policy. After getting policies through successfully, the work must continue to enact the changes. As one interviewee noted, "We just won this policy, and now it's implementation mode, which is a whole other journey ahead. And that's actually…the next battle

is going to be making sure it actually works." Part of this policy enactment means actively engaging to put reforms and policy changes into practice, and sometimes literally, take up space and formalize these legislative victories. As one interviewee described, the legalization of curbside gardens encouraged their organization to implement gardens in their parkways:

> We were kind of getting on the heels of Finley, who I'm sure you've came across in this whole journey, yes. So Ron Finley having just legalized the curbside, well let's start with curbside. And we did, we started just with the one… And yeah, just have them doing curbside ever since, whether it's a new one or maintaining existing ones.

Expanding policies. In terms of policymaking and institutionalizing change, planning and policy documents listed goals to reform or expand existing policies through partnerships with community organizations, experts and university partners, and other jurisdictions. For example, within the Los Angeles Green New Deal, there are goals to "work with L.A. County to expand opportunities and remove regulatory barriers for home-based entrepreneurs" and to "work with L.A. County to expand EBT access at farmers markets countywide." Planning and policy documents also articulated policy goals for the future in addition to stating plans to expand existing policy frameworks. For example, indicating a willingness to advance urban agriculture, the Los Angeles County General Plan 2035 (written in 2015) stated goals to prepare a Healthy and Sustainable Food Systems Ordinance that considered "incentives to promote healthy and sustainable farming practices, such as organic farming and hydroponics" and "identification and implementation of strategies and incentives to increase the availability of healthy and local foods in communities, especially those with limited access to fresh produce."

Informal policy enactment. In addition to pushing for codified changes, interviewees and organizations also worked to institute less formalized policy that addresses environmental,

economic, and justice aspects of the food system as well. For example, the Los Angeles Food Policy Council points to the success of establishing the Good Food Purchasing Program in Los Angeles (a public food procurement program that sources food from distributors meeting a variety of criteria in advancing environmental sustainability, women and minority owned businesses, fair labor laws, more humane animal welfare practices, and health). While not legislation, the program acts as a policy by leveraging the purchasing power of the City of Los Angeles and the Los Angeles Unified School District to push contracts (and industries wishing to get contracts) in favor of more resilient food goals. As another example, interviewees, organizations, and planning/policy documents touted the success of the Market Match program. One interviewee discussed how the program has expanded to include participation from organizations in Northern California and provides a host of co-benefits:

> For Market Match, we say it's a four-way win-win because it reduces hunger among the population by doubling the value of your SNAP benefits. If you're using Market Match and you go to the farmers market every week, that's potentially up to 40 dollars extra just for fruits and vegetables. Then it's also addressing health disparities, so that's number two. Number three, it promotes the local economy because these are local farmers. Number four, at least in a small way over the longer run, it's promoting environmental sustainability because when these types of small farms are viable and become a larger portion of our food economy, they're using environmentally sustainable methods.

Circumventing counterproductive policies. As discussed in the previous section, food system innovators work tirelessly to change and reform policies. Food-related organizations have had success in changing or reforming many of these laws and policies at the local and state level; at the federal level, organizations have found ways to circumvent detrimental implications of federal policies. As the most salient example, organizations and interviewees discussed various ways to support organic agriculture from smaller-scale producers and sell or distribute organic

food, without the official certification. Organizations and interviewees framed their practices as 'au natural' or 'beyond organic,' implying that while not organic certified, agriculturalists were employing the same practices in their farming. On the other hand, "beyond organic" is used to imply that the quality of food is even better than organic, as the food is produced locally (and thus with a lower carbon footprint and a greater nutritional profile). For example, Community Services Unlimited sells "beyond organic" produce to their customers, providing the following rationale on their website:

> CSU [Community Services Unlimited] produce is grown organically, meaning naturally, without the use of artificial chemicals or fertilizers, but most of what we sell is not certified organic… At CSU [Community Services Unlimited] we call our produce "beyond organic" to signify that it is not only grown organically, but has benefits that go beyond those measured by the USDA organic standard. Including it production benefits that the local economy, being local it reduces greenhouse gas emissions, and buying from local farmers and local food businesses strengthens local food security. Beyond Organic recognizes that we choose not to participate in the USDA certification process. Our buyers can visit our mini farms on many different occasions and participate with us to see for themselves how we grow our food.

As another example, the LA Urban Farms website described their practices (growing food in vertical towers without the use of chemical pesticides and fertilizers) and the resulting produce as being "beyond organic."

Building policy coalitions. Interviewees, organizations, and planning/policy documents reflected a bridging across siloes and different perspectives within the food system to strengthen pushes for policy reform. The Los Angeles Food Policy Council and the UC Cooperative Extension were frequently discussed as important allies and nodes within food organization networks. (These organizations were also commonly referenced in planning and policy documents as well.)

Speaking to the opportunity for an equity frame to help bring across different perspectives, languages, and expertise in transformation actions, one interviewee noted:

> Because you also have to end up being in different spaces, you have to know the language of those spaces. And I'm just meaning translation from English to Spanish to Korean to...I'm not saying just that, I'm talking about the food waste community has a language that's totally different than the urban agriculture space which is totally different than the farm space which is totally different than the policy space which is... you have to be able to navigate all of those different spaces if you're trying to transform things. Also bring everybody on board to the mission that you're trying to bring forth and our mission is equity. At the end of the day we want to provide people what they need and if we can align all the spaces that we're in around that idea, around equity, we'll need to start talking the same language across the board, so that we can eliminate the silos, eliminate the barriers, and begin to work together in order to solve the problems that we all see and we all want to achieve. So it's a lot of work.

In addition to creating networking spaces (which spurred collaboration and innovation), key actors within the Los Angeles food system provided expertise and guidance to other organizations looking to model similar practices within their own communities or to integrate ideas at a greater scale (e.g., scale up policies and programs to larger regions).

Embracing and supporting an integrated, diversified urban food system

All three data sets (interviews, organizations, and policy/planning documents) amplified the need for embracing and supporting an integrated (e.g., within very level of urban space) and diversified (e.g., decentralized and promoting biodiversity) food system. Content in data sets encouraged a rethinking of how to incorporate growing food into urban space (from windowsill to brownfield site). In addition, content reinforced the notion of encouraging environmental stewardship through food production and to even using urban agriculture to improve urban environmental conditions (e.g., improving water retention and promoting carbon sequestration through regenerative agriculture). Within these themes, content analysis indicated

a need to change diets to be supportive of local agriculture and resilient systems (e.g., eating seasonally, eating more plant-based foods) and reconnecting local producers with urban consumers.

Re-imagining space to reintegrate food into the urban fabric. Another key theme for transformation that emerged across all three datasets was the idea of re-integrating food into urban spaces (e.g., expanding urban agriculture, planting vegetable gardens instead of lawns, bringing in community food cooperatives, establishing farmers markets). Bringing agriculture into the urban community means reimagining space to both grow food, to increase access to food, and to create places for cultural, social, and economic exchange. Spaces to be utilized included residential spaces (e.g., a windowsill, patios, lawns, courtyards), commercial retail space (e.g., corner stores or community food cooperatives), public spaces (e.g., parks, streets, and schools), vacant spaces (e.g., brownfield sites and vacant municipal land), "wasted" spaces (e.g., unused shipping containers), and multifunctional spaces (e.g., community centers with yoga, poetry readings, and cooking classes). According to content across data sets, by integrating food back into urban spaces, cities can create spaces for social exchange, places for learning, places for recreation, and places for gathering and organizing. The data framed bringing food into the urban fabric as promoting personal connections with the food production, but also bolstering connections within the community and improving food access. To build resilience, food needs to be reintegrated into the entire urban context (from an apartment to a parkway to a park to brownfield site). As an example, one interviewee stressed the importance of creating spaces for cultural and social exchanges through community gardens and urban farms:

> I mean, when I think of community gardens and urban farms, one of the most important things to note there is that, it's not about feeding people really. It's about connection to

> people, connection to land, outdoor space, green space, recreational space, physical activity, neighborhood identity and cohesion, which speaking of resiliency, is critical. So a lot of people might dismiss community gardens and urban farms as a cute thing to do but not highly relevant for the resilience or health of the community. But I really argue against that, because it has so many co-benefits and creates so much social and economic infrastructure too when you think about people exchanging ... maybe not in monetary economies, but you see what I'm saying, right?

Speaking to this exchange outside of monetary economies, one interviewee discussed the power in transforming vacant lots into community gardens as a means of reorienting our values away from consumerism:

> We have to provide green space for children so they're used to green space instead of used to vacant lots and empty places. Green is the color of life, of vivacity and regeneration and growth and development and food and shelter. We have to change our thinking, I think, and our interaction so that people get that and stop chasing after things that money buys.

Another interviewee discussed planting food crops that can grow in small urban spaces, describing the bean variety in the following way: “they are urban friendly, they grow up, not out. You can grow them on a fire escape or a rooftop, or something, or your windowsill.”

Organization content also echoed these goals to transform urban food infrastructure, from the micro to the macro scales, into spaces for urban agriculture and community connection. LA Urban Farms also emphasized growing food (at the hyper localized level), stating their commitment to “being a leader in the local food growing movement by helping to spread… revolutionary and sustainable aeroponic technology throughout communities so that we all have access to fresh and healthy food grown close to home.” Their organization promotes growing food in residential areas well as within larger scale urban farms, calling their technology “perfect for backyards, patios, balconies, terraces” and available for use by “businesses at ground level or on rooftops, for hotels and resorts, for restaurants and cafeterias, for schools and universities,

greenhouses and indoor spaces with grow lights, parking lots, or anywhere where you can envision a farm." As another example, the Environmental Media Association described a goal to "transform urban school concrete into edible gardens by engaging and training teachers and students in the process." Root Down LA emphasized the importance of having garden spaces within neighborhoods, stating the following on their website: "We plant our gardens where they mean the most. Our central educational gardens are located near schools and within neighborhoods, so that they're accessible to school kids and families."

Policies and plans, such as the Los Angeles County Urban Agricultural Zoning Act, also discuss goals "to promote and foster urban agriculture." Similarly, the Los Angeles County General Plan stated the goal to "support countywide community garden and urban farming programs" and described community gardens as being shown to "provide a catalyst for neighborhood and community development, beautify neighborhoods, preserve or create urban green space, and create income opportunities and economic development." These goals were echoed in the Los Angeles County Community Climate Action Plan as well, which outlined a goal to "establish local farmers markets and support locally grown food." As a final example, the Los Angeles Green New Deal reinforced the importance of expanding food access within residential spaces, noting the need to "identify opportunities to increase edible gardens in [the] City's public housing."

An interviewee described the robust expansion in urban agriculture as a key part of the transformative process, but stressed the importance of needing financial support in exacting these endeavors:

> I do think there's hope because really the game changer would be more public funding for things like community gardens. And for example, if you look at the city of Seattle, they

> invest a lot of city resources in community gardens. So they have this wonderful network of community gardens that are supported by city grants and a city staff. And we could have that here in LA. We don't have it now. We've had it in the past. We could have it in the future, but it takes that public investment.

Promoting environmental stewardship through food. The opportunity to foster and promote environmental sustainability within urban contexts was another prominent theme that emerged across data sets (interviews, organizations, and planning/policy documents). Integrating urban agriculture was often described as a way to increase water capture, create urban greenspace, improve soils, provide habitat for a variety of species, offer refuge for pollinators, and promote carbon sequestration efforts. As an example, the Los Angeles Green New Deal stated goals to "develop a healthy soil strategy for the city to support urban agriculture, address carbon sequestration, and increase water capture." As another example, the Los Angeles County Community Climate Action Plan discussed the "co-benefits associated with locally grown foods include reduced vehicle miles traveled, as well as displaced carbon-intensive food production practices (if the food is grown organically)." Similarly, an interviewee discussed how urban agriculture can use less water than lawn, stating "a vegetable garden will use less water when you wisely water, will use less water than a lawn that's maintained."

Interestingly urban food advocates tended to talk about environmental stewardship and sustainability in ways that moved beyond the food system. For example, interviewees discussed the need to incorporate more native vegetation in urban landscaping. One interview discussed this issue, stating

> One of the best things about the garden is because it's habitat gardens, the emphasis is on native plants, which I think more and more we should be incorporating into our urban landscape and I hate Caltrans freeway landscaping. They have brought in plants from every other continent of the world except our own and accept our local California ... California is one of the richest states in species diversity, and what are we doing? We're

> bringing in eucalyptus trees from a totally different continent just because it can go without water for a longtime even though it is very hazardous. It has branches that break and right now it's vulnerable to a bark beetle and it's killing a lot of them and is a potential human hazard. We should be incorporating the plants that grow naturally in our mountains without our intercession, without sprinkler systems.

In addition to thinking about more sustainable vegetation, as another example the Environmental Media Association encouraged students to adopt more sustainable lifestyle choices, advising students to "use a reusable water bottle; eat less red meat to reduce your environmental footprint - try going meatless one day a week; use reusable containers and utensils for your lunches instead of plastic/paper bags."

Promoting dietary change. Another aspect of reintegrating the food system into the urban context, is encouraging eating habits that are supportive of and supported by robust, localized agriculture (i.e., seasonal, diverse, and plant-based). Interviewees stressed the need for creating demand for certain foods in addition to promoting better supply and accessibility—increasing demand for diverse, seasonal, plant-based foods will in turn support producers and retailers who supply them. Many interviewees and organizations discussed how connecting community members to food production (and giving them the tools for preparation) increases demand for fresh, seasonal, sustainability produced produce. For example, one interviewee discussed this process stating,

> …I think rather than cooking classes per se, I think it should be related to the horticulture class. I think that should always be connected. You grow the food. You learn how to prep it. You learn good ways to season or cook it and all of that so that it's a whole experience, not an isolated one.

Another interviewee noted that a survey of gardening class participants indicated that after participating in the course "they were eating more fruits and vegetables and they felt their family was healthier for it." As example of creating demand through access, active participation, and

information, Root Down LA states that their organization “creates demand for healthy food by partnering with neighborhood schools, businesses, and non-profits, where we host a variety of community events, youth-trainings, and hands-on classes that get people excited to eat their veggies.” As another example, an interviewee discussed how people need to be familiar with produce before trying them and purchasing them:

> I've always done food tastings… That is how we'll change people's diets and their thinking about food. I don't think we should so much emphasis just “it's good” ... Carrots are good for you. Well, there are a lot of other things besides carrots you can eat to get that vitamin A, but it has to be tasty. It should be easy to grow and it should be fun. That's kind of what I'm driven by. Those are the messages that I want people to get.

Organizations, interviewees, and plans/policy documents emphasized that these changes in diet will not only economically support local growers, but will also result in economic benefits for consumers (e.g., seasonal, local produce being less expensive) as well health benefits (e.g., provide greater nutrient density and reduce incidence of dietary disease). For example, one interviewee discussed this issue of seasonal produce, stating,

> …there needs to be some diligent consumer training on what items, how can produce be used at home, or how can it be cooked, or what's in season as well, so they can understand what's going to be higher price or lower price. Because sometimes produce may seem expensive to buy, but of course it's going to be even more expensive if it's not in season. But if it's in season, then it'll be a lower price. So understanding seasonal items as well.

Interviewees and organizations also emphasized nutrition education as a key part in shifting diets. As an example, one interviewee discussed education strategies focused on nutrition (so that community members can improve their health outcomes). As one interviewee stated,

> We've also done a number of educational workshops. So, those are usually, free events are held at a library or school. And, the last one was on dietary changes you can make for Type 2 diabetes, which is a good thing in our community. We did one on hypertension, we did one on GMOs, we did one on eating healthy on a budget. And, one that was just kind of nutritional like you can eat that's good for you.

Another interviewee was careful to point out that while nutrition education was important, it should not be used to misdirect poor health outcomes to personal responsibility instead of structural issues:

> Now what am I talking about? Well, nutrition education and education will always be key. Providing that is always going to be something that is necessary and it's something that can work as well. But the problem is you can't just look at the situation from the viewpoint of the individual choices that people have to make. There's also health that has to be built into the built environment**.**

Planning and policy documents focused on changing diet, but more explicitly tied dietary changes to addressing high incidence of dietary disease. For example, the Los Angeles County General Plan states that,

> Land use planning can also provide access to amenities that can lead to important health outcomes, such as reducing the occurrence of obesity and chronic diseases. In particular, access to food systems is critical for healthy, livable, and equitable communities. Ensuring that opportunities exist to grow, sell, and consume healthy foods promotes public health and supports efforts to reduce obesity rates.

Promoting regenerative agriculture. The use of sustainable, regenerative agriculture techniques merged as a strong theme across all three datasets (interviews, organizations, and planning/policy documents). At its core, regenerative agriculture works from the goal of improving the health of soil or to restore degraded soil; promoting healthy soil in turn symbiotically promotes biodiversity, enriches soils, restores watersheds, and enhances ecosystem services (Rhodes, 2017). Practices that support regenerative agriculture generally encompass organic principles (e.g., building organic matter, using minimal tillage, growing cover crops, composting, mulching, and incorporating crop rotation) (Rhodes, 2017). In addition, regenerative agriculture practices typically avoid products that damage living organisms in the soils (e.g., chemical pesticides, fertilizers, and herbicides) (Rhodes, 2017).

Interviewees, organizations, and plans/policy documents used "regenerative agriculture" explicitly or described using practices that fall under regenerative agriculture techniques. For example, the Los Angeles County Our County Sustainability Plan stated goals to work partner with the UC Cooperative Extension to "support local farmers and urban agriculture entrepreneurs in adopting regenerative agricultural practices, including those that sequester carbon, such as by offering training, technical assistance, and/or financing and adopting County policies that support regenerative agriculture."

Similarly, the Los Angeles Green New Deal listed goals to "pilot two healthy soil projects" to "explore incentives for regenerative agricultural practices, including water conservation." The Green New Deal also mentioned the plan to "develop a healthy soil strategy for the city to support urban agriculture, address carbon sequestration, and increase water capture" and to "amplify community education campaigns on the benefits of healthy soils, biodiversity, and regenerative agriculture." As yet another example of the Green New Deal supporting the concept of improving soil functionality and eliminating "waste," the plan also discussed "reinforcing the resilience of our food system, and ensuring food scraps are returned back to our soil as nutrients." In the context of promoting different working groups, the Los Angeles Food Policy Council discussed regenerative agriculture in the following way:

> Agriculture is both a major contributor to climate change, and a critical tool for reversing it. Localized farming and regenerative agriculture are ways to ensure LA is able to withstand major climate events, chronic drought and ensure food resources for future generations. Regenerative agriculture refers to an approach to farming that replenishes healthy soil, biodiversity and ecosystems instead of destroying or depleting natural resources.

Even if not using the term regenerative, organizations, plans, and interviewees commonly described regenerative agricultural practices. For example, while not using the term

"regenerative," the Los Angeles County General Plan listed plans to "support agricultural practices that minimize and reduce soil loss, minimize pesticide use, and prevent water runoff from leaching pesticide and fertilizer into groundwater and affecting water, soil, and air quality" and to "support innovative agricultural practices that conserve resources and promote sustainability, such as drip irrigation, hydroponics, organic farming, and the use of compost." As another example, organizations like Grow Good described their agricultural practices by stating, "we use no chemical additives on our no-till farm." Grow Good's website also mentioned that "years of soil rehabilitation [are] paying off" and described their farm as including "a California native plant garden filled with over 300 flowering, drought-tolerant plants." Furthermore, Grow Good described having "vegetable growing areas and trees are all connected to a state-of-the-art Netafim drip irrigation system." API Forward Movement discussed supported localized, sustainable agriculture stating, "we provide high quality produce from local, small farms run by families of color who use environmentally friendly and sustainable growing practices." As another example, SoLA Food Cooperative's website set goals to "carry products and foods that are produced in an ecologically sound manner." Community Services Unlimited described their instruction workshops as providing opportunities for participants to "learn how to grow food using natural and sustainable methods that's don't rely on chemical fertilizers or pesticides." Interviewees commonly discussed using mulch (provided by free by the City of Los Angeles) in their gardens. One interviewee discussed using nitrogen fixers to improve the hardpacked, poor quality soil of an empty lot that would be used for a garden, stating

> I threw fava beans through the whole place and in a few weeks, the fava beans came up and they keep coming up now every year from the fava beans and so ... And you know about fava beans, right? The importance of them? Do you?...They're one of the most efficient nitrogen fixers and the beans are edible, yes?

This same interviewee discussed additional regenerative farming practices employed in urban farming:

> So, and when we cut off the green tops, when we take the plants down, that goes into our compost pile. So, it's all good. Ladybugs love fava bean flowers and plants and aphids do like them a little bit. They're not as bad a problem as like artichokes. So, we get ladybugs attracted and bees love the flowers. So, that's pretty much ... The fava beans annually that come up by themselves without our replanting are compost. City mulch and compost that I order at least once a year, which is totally free ... And then my own worm compost that I bring from home that we'll put into our vegetable beds every so many weeks. That's how we feed our garden. We are completely organic. We don't use any chemical fertilizers and of course, no pesticides, and we don't really need to.

The same interviewee also described a great variety of crops grown in the urban garden, stating,

> I have planted now scarlet runner beans. How many people know that? Japanese eggplant, bok choy, daikon, pigeon peas, Malabar spinach, New Zealand spinach, kabocha squash. There is a world of wonderful, tasty, healthy vegetables easy to grow. There's cactus. For fruit trees we have the true guava and we have the pineapple guava. We have loquats. We have pomegranates. We have a jujube… We have to have fun. We have to have a lot of diversity with the vegetables.

One interviewee even talked about the plants themselves helping with issues of pest control. (The lima bean plant emits green leaf volatiles (GLVs) when the tissue of leaves are damaged, which attracts parasitic wasps. These wasps then lay larvae inside the caterpillar.) The interviewee described this situation stating,

> And just like the craziest things we found out about lima beans in particular, if I could just share one antic. There might be other plants that do something similar, it's the first I've ever heard of it. I guess lima beans, when they sense a certain kind of caterpillar that's encroaching, they let out… an odor, or a nectar or some sort of release that attracts a different kind of wasp. And the wasp comes and kills the caterpillar.

This same interviewee also discussed regenerative agriculture practices used at the urban farm, stating:

> We are really just completely au naturel. We don't use any fertilizers, any chemicals. What we do use occasionally is 50/50 Dr. Bronner's Neem Oil and under the super soaker, when we get the occasional aphid. And that's just a more prolific way to get rid of that kind of infestation. But we don't use anything. We get our mulch from the city donations, and

> occasionally we've got private donations mulch. Yeah. And our soil is impacted [beneficially], it's just great, and we add organic matter to keep it rich. But we are working, we don't need much yet. I mean, we're aware of that, that might change. But we would fully plan to be organic if we have to start incorporating some organic items into our farm, but it hasn't happened yet.

Connecting urban-periphery and rural agricultural production with urban consumption. Finally, content from all three data sets discussed the need to integrate food within the urban landscape by bridging the connection between urban consumers and urban-periphery and rural agricultural producers within the region. Organizations and interviewees discussed how building supportive relationships or co-beneficial market strategies provided more reliable economic opportunities (by doubling dollars community members spend on produce through Market Match and other programs), provided consumers with more access to culturally relevant, local, sustainably produced fruits and vegetables (by providing farmers input on their preferences), and reduced food waste (by creating a direct distribution network). For example, one interviewee remarked, “When we source produce directly from our farmers… we sell out. There isn't anything left over.” As another example of promoting connection to farmers, the Co+Opprtunity food cooperative website stated the following on their website: “For over four decades, the co-op has led the way in connecting people to local growers, suppliers and producers with health, sustainability and ethics in mind. Together we are strengthening community through a commitment to a strong, local food system, clean ingredients and responsible sourcing.” As a final example, SEE-LA discussed their purpose as being to “build sustainable food systems and promote social and cultural activities that benefit both low-to-moderate income residents of Los Angeles while also supporting California small and mid-sized farms and local small businesses.”

Chapter summary

In summary, data across all three sources (interviews, organizations, and planning and policy documents) signify several key strategies for establishing radical food systems and building social-ecological resilience in the urban context. Strategies include activating the citizenry and mobilizing community members through engagement and education (particularly for more vulnerable populations); institutionalizing change through formal and informal mechanisms and at various levels of governance; and embracing and supporting an integrated, diversified urban food system that promotes environmental stewardship and regenerative agriculture, considers all urban spaces as potential sites for food production, and bridges food produces with community demand.

As seen in Table 7 below, using the resilience and ecofeminist frameworks highlights how these opportunities for transformation can promote greater social-ecological resilience within urban food systems, with potential in scaling up these benefits to other spatial contexts (e.g., state and regional levels). Each of these opportunities for transformation are explained in detail below, using these frameworks to highlight potential for building social-ecological resilience and equity within urban food contexts.

Activating the citizenry. By activating the citizenry, communities can increase adaptive capacity through strengthening social networks and establishing social networking across sectors; this allows for greater stakeholder engagement and input, community knowledge and perspectives, and greater collaboration across agencies to not only improve ability existing food systems, but other aspects of urban systems (e.g., transportation, housing, and education issues). These networks can also be transformative; for example, a move from siloed approaches to urban

planning and policymaking to integrative, system-based approaches would maximize co-beneficial opportunities (e.g., addressing climate mitigation and food security simultaneously). With an increasingly urban population, such reorientations in city governance could have transformational impacts in local, regional, and global contexts. Furthermore, engaging the community with policymaking processes creates greater opportunities for context-specific innovations (by including a diversity of community perspectives, experiences, and knowledges) and greater accountability by community members to ensure that plans/policies represent their needs. Ultimately, greater activation of the citizenry gives community members tools to influence local outcomes, increasing adaptive capacity (by giving residents capability to address anticipated and existing problems) and creating potential for transformation change (by giving community members agency in changing dysfunctional or inequitable systems). Furthermore, focusing on bottom-up, community-led initiatives reorients power to community members, empowers vulnerable populations (women, youth, lower-income, people of color, people with disabilities, formerly incarcerated, seniors, immigrants), celebrates diverse perspectives, and favors and fosters local expertise and knowledges. Furthermore, using food to connect community members to food production encourages engagement with and reconnection to nature. Better connection to, and knowledge of, food systems (and better involvement of community stakeholders) provides the context for transformative actions (Santini et al., 2019).

Policymaking and institutionalizing change. Working to reform local policies and plans that limit innovation (and thus adaptive capacity) largely reflects theoretical transformations within in social-ecological systems (i.e., transformation of exiting structures/systems that limit current or future adaptive capacity); these transformations are incremental and occurring

through formal and informal processes. Importantly, these types of transitions emphasize scaling up successful initiatives to higher levels of governance, leading to transformational outcomes in state or regional contexts. Testing and pushing legal frameworks builds adaptive capacity (e.g., by uncovering exiting frameworks which limit ability to respond to or anticipate risks), but also supports transformational processes by identifying policies/practices which limit social-ecological resilience of urban food systems (e.g., citing growing food in parkways, selling foods in public spaces, making cottage foods in residential spaces). Furthermore, the process of transformation (e.g., mobilizing citizens, networking with other food organizations, enacting city-level policies at the state-level) encourages regional collaboration and network building, which in turn build adaptive capacity. Through an ecofeminist lens, these strategies emphasize devolution of power structures and bottom-up, participatory actions to dismantle oppressive policies and power structures. Furthermore, the inclusion of community members in the policymaking processes (e.g., including the voiced and perspectives of those most negatively impacted by food inequities) and/or targeting, framing, and designing policy agendas based on their input and localized knowledge, empowers vulnerable communities.

Embracing and supporting an integrated, diversified urban food system. There are multiple ways in which embracing and supporting an integrated, diversified food system portends radical transformations urban systems. For one, these approaches encourage diverse, de-centralized food production systems: a radical departure from concentrated, industrial food production and distribution. Furthermore, bringing food into the urban context encourages innovative use of space, which in turn presents opportunities for radical changes in the built environment, urban designs, and urban functionality. These approaches also build adaptive

capacity of urban food systems by encouraging co-benefits within social-ecological systems (e.g., carbon sequestration, water capture, water conservation, pollinator habitat, aesthetic and recreational opportunities, cultural exchange). Furthermore, emphasizing regenerative agriculture reduces vulnerability (by ecological degradation associated with chemical/synthetic fertilizers and pesticides) and promotes adaptive capacity (by building soil health and carbon sequestration). Furthermore, regenerative agriculture practices foster and rely on mutually beneficial relationships with the environment (e.g., using legumes as nitrogen fixers, protein sources, and habitat for pollinators) and promote environmental stewardship (e.g., use food waste as compost to build soil health). From an ecofeminist perspective, these types of spatial and conceptual transformations foster a broader acceptance and embrace of the co-benefits of integrating nature within urban spaces. As an example, rather than curating plants solely for their aesthetic appeal in well-manicured, landscapes (and with the use of chemical fertilizers and pesticides), we embrace a holistic, wild acceptance of plants as providers of nourishment (for us, for pollinators, for other animal species) and actively engage in the nurturing of plants in return.

In addition, developing economic and social relationships between peri-urban/regional/rural producers with urban consumers builds adaptive capacity for consumers (e.g., access to healthier food) and producers (e.g., access to a reliable customer based). Greater integration of food within urban context and greater connection with peri-urban, rural, and urban producers may encourage healthier eating and improved health outcomes by supporting access to and demand for seasonal, local, plant-based, and culturally relevant foods and celebrating agroecological diversity. Finally, supporting local food knowledge (e.g., teaching food production practices) and promoting reconnection to food (e.g., incorporating food into urban community

spaces), encourages greater opportunities for non-monetary cultural and social exchange around food. These reorientations to food may engender broader reconceptualization of our food system values. Finally, giving citizens the tools, space, and resources to grow their own food encourages radical access to food by de-commodifying foods and food production knowledge.

Table 7. Transforming to Resilience by Theoretical Frames

Opportunities	**Resilience**	**Ecofeminism**
Activating the citizenry	• Engages community with policymaking processes, increasing accountability • Establishes social networking across sectors • Gives community members tools to influence local outcomes	• Reorients power to community members • Empowers vulnerable populations (women, youth, lower-income, people of color, people with disabilities, formerly incarcerated, seniors, immigrants) • Celebrates diverse perspectives • Favors and fosters local expertise, knowledges • Encourages engagement with nature
Policymaking and institutionalizing change	• Reforms local policies/plans that limit innovation • Emphasizes scaling up successful local initiatives to higher levels of governance • Tests and pushes legal frameworks • Encourages regional collaboration and network building	• Emphasizes localized initiatives • Empowers vulnerable communities
Embracing and supporting an integrated, diversified urban food system	• Encourages diverse, de-centralized food production systems • Encourages innovative use of space • Encourages co-benefits (e.g., carbon sequestration, water capture, water conservation, pollinator habitat, aesthetic and	• Promotes environmental stewardship • Emphasizes regenerative agriculture and mutually beneficial relationships with environment • Encourages seasonal, local, plant-based, and culturally relevant food • Celebrates agroecological diversity • Supports local food knowledge • Encourages non-monetary cultural and social exchange around food

Embracing and supporting an integrated, diversified urban food system (continued)	recreational opportunities, cultural exchange) • Encourages regenerative agriculture • Develops economic and social relationships between peri-urban and regional rural producers with urban consumers • Encourages healthier eating and improved health outcomes	• Promotes reconnection to food • Encourages radical access to food (de-commodifies foods and food production knowledge)

8. DISCUSSION AND CONCLUSIONS

I was thinking about that this morning. We've been hearing about this unsustainable way of life for 30, 40 years. I don't know how old you are. But this talk has been going back since I was a little teeny, tiny kid. The fact that the world still seems to be going on, subconsciously in the back of your mind, you're like, "Yeah, yeah. We're living un-sustainably. But look, I woke up this morning and the trees are still here and the road is still here and my job is still here." Blah, blah. Subconsciously you still think everything's all right. Until something really collapses, I don't think people are going to wake up. Something has to get really bad, I think, for people to respond. – Interviewee

This dissertation sought to identify how food system resilience is being conceptualized and enacted within the urban context, to identify constraints in adopting food system resilience, and to illustrate opportunities for transforming food systems. This chapter presents how these dissertation findings tie in with existing literature in terms of implications for policymaking and planning, followed by recommendations for future research. Finally, this chapter concludes with a summary of final reflections.

Challenges in re-localizing food systems in the urban context

Recent studies examining the potential for re-localizing food in urban food systems point to a variety of social, economic, and environmental benefits (Toth et al., 2015). Integrating food within urban environments and making food accessible can add to food access and offset other household expenses (Ackerman et al., 2014). Furthermore, urban agriculture and food entrepreneurship can create jobs and strengthen local economies (Ackerman et al., 2014). For example, Grewal & Grewal (2012) estimated that Cleveland, Ohio can meet 62 to 100 percent of urban demand for food (i.e., fresh produce, poultry and eggs, and honey), if utilizing 80 percent of vacant lots, 9 percent of occupied residential lots, and 62 percent of industrial and commercial rooftops. This enhanced reliance on food production and distribution would keep an estimated

29 to 115 million dollars in the local Cleveland economy (Grewal & Grewal, 2012). Furthermore, food offers additional economic benefits by providing opportunities for job training that bring vulnerable populations (e.g., at-risk youth, formerly incarcerated) into the formal economy (Sbicca & Myers, 2016). Beyond economic returns, building resilience through urban food systems can encourage a series of other social benefits (e.g., promoting cultural identity and connection to place, stronger social ties and community building, emotional wellbeing, community health, and education opportunities) (Sage, 2014; Ackerman et al., 2014; Davila et al., 2015). Furthermore, bringing agriculture into urban contexts can contribute to environmental sustainability (e.g., reduce heat island effects, mitigate stormwater runoff, reduce energy in food transport) (Sage, 2014; Ackerman et al., 2014, Toth et al., 2015).

Despite the social, economic, and environmental benefits that bringing food into urban spaces may provide, there are some logistical challenges in producing food within urban areas (e.g., soil contamination due to prior industrial contamination, energy expenditures, costs of urban water use, atmospheric pollutants) (Siegner et al., 2020; Mohareb et al., 2017; Wortman and Lovell, 2013) as well as economic and structural issues that hamper efforts for alternative food movements (e.g., expensive land use, economic and racial inequality, competition with globalized, industrial food systems) (Siegnor et al., 2018 & 2019). In order to address these challenges, city planners and policymakers would need to heavily invest in and support a reintegration of food within urban contexts (Grewal & Grewal, 2012; Siegner et al., 2020; Mohareb et al., 2017; Wortman and Lovell, 2013); furthermore, these efforts would need to proactively strategize and focus efforts through an equity lens. For example, planners and policymakers attempting to add community and urban agriculture spaces in urban areas through

the Urban Agriculture Incentive Zoning (UAIZ) ordinance are trying to transform an inequitable system using policy tools that inherently give greater power those already holding greater power (i.e., property owners) (Siegner et al., 2018 & 2019). While well-intentioned, this policy tool places agency with property owners rather than with those in need of space (i.e., those unable to own or access land in increasingly expensive urban areas), and the UAIZ program has not been successful in prompting the urban agriculture transformations anticipated by planners and policymakers. Instead of trying to transform systems through economic incentives for those with property (and thus power over land use), planners and policymakers need to use an equity lens and devote publicly-owned land (especially within lower-income and or communities of color) through public land trusts for community gardens and other urban food benefits (e.g., community food cooperatives) (Siegner et al., 2018 & 2019).

Implications for urban planning and policy

Prioritizing food. For cities to successfully make food systems more resilient within the urban context, planners and policymakers must invest significantly in planning for and supporting integration with food systems across policy domains and jurisdictions (e.g., neighborhood, school district, city, county). Integrating food systems into urban spaces (e.g., reserving public land for urban agriculture) should be seen as public benefits and maintained through formal funding mechanisms, in the same way that parks, roads, museums, and other public benefits are. Furthermore, city leaders and community members alike can be creative in maximizing uses within food spaces and food-related benefits; for example, community garden spaces can be multifunctional spaces used as recreation spaces (e.g., yoga and meditation), education spaces (e.g., food tasting and nutrition classes), food retail spaces (e.g., creating mini markets for

farmers to sell produce), and/or social gathering spaces (e.g., neighborhood meetings). Furthermore, strategies need to actively address and prevent exiting inequalities (e.g., power differences due to property ownership) and the potential for driving additional inequalities (e.g., driving gentrification). City leaders can invest in and support initiatives, partner with innovative organizations advocating on the behalf of communities, support urban food system entrepreneurship, and make earnest efforts to include community perspectives and knowledges in the policymaking processes.

At the school district level, there are a variety of ways to promote more resilient food systems. Each public school could be required (and given resources) to develop a robust urban garden and associated curriculum. To help address food insecurity and access to healthful food, produce from gardens can be used in school lunches or given to students in need. Curriculum could be changed to include more classes that provide community members resources that improve ability to access food and optimal food system benefits (e.g., civics, household budgeting and managing, horticulture, and food preparation and nutrition). When possible, curriculum in existing courses (e.g., sciences) can be tied to agriculture and the urban garden, in order to complement instruction in other subjects and to provide children opportunities for hands on learning.

Within municipal governance structures, cities can create a Department of Food Policy and Planning, much like a Department of Water Resources, Department of Energy, or Department of Parks and Recreation. Having a formal food sector within municipal governments and creating a space for collaboration with other sectors (e.g., transportation, water resources, parks, housing, municipal waste, economic development) can provide a mechanism for planning

strategically to maximize co-benefits when enacting regulatory changes and creating city plans. However, these efforts should include larger scale strategic planning across sectors (e.g., establishing long-term plans and benchmarks for integrating food systems across urban spaces, such as reducing food waste and implementing citywide composting programs) as well as contextually specific initiatives that support diverse community needs. As an example, a portion of city parks can be utilized for urban agriculture and teaching gardens, if these spaces would better suit the needs of a community.

Urban planners and policymakers should be examining ways that food can address other urban problems and maximize social-environmental co-benefits. For example, cities should first work to reduce food waste (e.g., through policies that tax wasting food, through widescale food gleaning efforts, through information campaigns, and/or through reform of distribution practices at wholesale markets); however, for food that is still ultimately wasted, public utilities and works departments can enable/consider powering municipal buildings through energy derived from food waste and/or collect municipal food waste for large scale composting programs that provide nutrients for regenerative agriculture (to build soil health, improve soil water retention, and aid in carbon sequestration). These kinds of cross-sector initiatives provide co-benefits for urban systems (e.g., reduces energy powered through fossil fuels, reduce land needed for landfills) as well as put food production inputs to beneficial use (e.g., energy, healthier soils, better water retention).

To aid in transformation within urban spheres, city officials should create a constant and open dialogue with actors within the food sector to identify how existing regulations are counterproductive or how existing resources can be leveraged to improve food outcomes. As an

example, city leaders can take inventory of vacant lots and brownfield sites and designate a percentage of these for community and neighborhood gardens (in a community land trust) and/or lease spaces for urban growers (to provide additional city revenue and put land to use); these parcels should be targeted at providing benefits to underserved neighborhoods. Furthermore, municipal planners and policymakers can take an active role in seeing that progressive, transformative food policies are implemented as intended, reform policies that do not seem to be effective, and enact policies to minimize potential unintended consequences. For example, after designating city land for community gardens (within community land trusts) cities should invest in employees to help maintain these community gardens and help educate community members in food growing practices, composting, mulching, and other related benefits. In such a hypothetical, master gardeners can be assigned to a certain number of these community spaces to help care for and water plants and to provide workshops and demonstrations for community members in growing food through regenerative agriculture. If the gardens were not benefiting community members (e.g., engagement was low), city officials would then engage with the community and/or community organizations to identify barriers to use and determine how to increase participation/utilization of the garden (e.g., tie garden workshops to afterschool programs). Finally, planners and city policymakers would need to think proactively about accompanied policies to help ensure that initiatives intended to promote greater resiliency in the urban food system do not have unintended consequences. For example, enacting rent control policies could help to prevent gentrification that may result from beautifying urban spaces and adding amenities (e.g., community gardens in vacant lots).

Municipal policymakers and planners can work with organizations, urban food innovators, and peri-urban and rural farmers to create strategies to promote greater economic self-sufficiency (a part from the industrial model) and invest food dollars directly into the community; for example, public, private, and non-profit partnerships can increase entrepreneurial opportunities for cottage food producers (e.g., bakers selling bread outside of their homes), for urban growers, and for smaller farmers in peri-urban and more rural parts of the state. As an example, local leaders can coordinate with convenience and liquor stores to create a food cooperative model (e.g., much like COMPRA foods leverages purchasing power in buying produce for corner stores) to help them sell produce grown by local producers and regional smaller-scale farmers (providing them with a steady clientele). In addition to helping reorienting these supply chains, efforts need to help support demand for these foods. Part of these efforts can be at the smaller scale (e.g., public information campaigns); others need to continue to work to address deeper inequalities (e.g., increase minimum wage so that citizens have greater purchasing power for local, organic produce). Importantly and related to demand, farmers can tailor their growing practices to contribute to access to culturally relevant foods for the diverse communities they would serve (e.g., bok choy, chayote squash). Furthermore, city planners and policymakers should set aside public space for farmers' markets with long term agreements to give farmers' markets greater stability and certainty. In addition, city leaders should work with farmer market managers to assess how to alleviate some of the logistical and economic burdens facing farmers and clientele in using these spaces to their fullest potential.

There should be financial support to help communities (particularly those with limited food access) in opening community-owned food cooperatives and consistent farmers' markets.

Public officials should designate, donate, and/or heavily subsidize spaces for food cooperatives in communities that have been systemically and inequitably underserved and underinvested in (e.g., South Los Angeles) to give power to community members to invest in each other and their local community as well as gain access to high quality foods. These types of spaces can also be multifunctional (e.g., social gathering, education, retail) and can support smaller-scale producers, which provide additional social and environmental benefits to the community.

To hold city officials accountable in efforts and ensure that policies/plans serve community needs, it is vitally important that community members continue to activate politically and engage in planning and policymaking as well as continue to change seats of power to better reflect community values and perspectives. Providing consistent funding to food-related organizations (who have been providing a service for local governments and city officials with limited support), helps to ensure that community perspectives and accountability continue to be a force within policy and planning. For example, these organizations can help mobilize their communities, continue to work toward institutionalizing change, as well as advocate for community members unable to participate due to constraints (e.g., working multiple jobs).

Addressing external structural constraints. Despite the great potential for transformative processes through local initiatives, there are structural issues that threaten the ability to transform food systems (e.g., income inequality and inability to access land, legacies of systemic racism within the built environment, climate change impacts). Even if cities were to adopt all of the above strategies with gusto and through a strong equity lens and support of the community, there would still be a number of structural forces that threaten their success. For example, educating community members about nutrition is an uphill battle against corporations spending

exorbitant dollars in advertising, marketing, and messaging to sell their highly processed and unhealthy food products. Local efforts to support smaller-scale farmers cannot change the fact that conventionally grown produce is being sold at artificially low prices at grocery stores. However, there is potential for urban led transformations and community mobilization in addressing these issues by bringing them to the political and social fore and putting them on the federal policy agenda, as prior (and existing) social movements have demonstrated.

Holt-Giménez and Shattuck (2011) critique urban and localized food movements (progressive and radical movements) as being instrumental in improving the food environments for specific communities or even at the state level but, largely unsuccessful in changing the corporate food regime. The findings of this dissertation also indicate that innovative, active organizations in Los Angeles have been successful in not only enacting polices that benefit local community members, but also at the state level; however, considering how California influences environmental policy trajectories in other capacities (e.g., setting higher vehicle emission standards), state-level food policies in California have potential to influence federal-level policy making.

Ultimately, in response to growing pressure from urban centers (e.g., activism, policymaking), state and federal leadership could change to be more supportive of localized agriculture initiatives. At higher levels of governance (e.g., state or federal) a variety of policies can be used to level the playing field for alternative food movements to be viable as well as address the vulnerabilities that the predominant industrial food system presents within local, regional, and global contexts. For California, folding food into climate mitigation and adaptation polices can be a way to address the structural problems within our food system. For example,

California can create a carbon tax on large-scale, industrial farmers and/or include financial incentives or grants in support of regenerative agriculture in California. For example, investing in regenerative agriculture or community gardens can count as carbon offsets within carbon cap and trade policies (AB 32). California can reevaluate their water right structures and water distribution mechanisms to incentivize growing diverse food in urban contexts (e.g., reduced water rate for watering urban gardens as opposed to lawns or landscaping). Furthermore, to promote using regenerative agriculture techniques, the State could apply a water externality tax for using chemical fertilizers and pesticides or implement a tiered water rate based on a sustainability criterion. Furthermore, the State can implement state-wide labor laws that improve conditions for farm and food works and push large corporations to pay food sector employees living wages. For example, the State can impose a tax on companies with a certain percentage of employees on food assistance or public healthcare benefits (e.g., Walmart). Improving food system outcomes would ultimately improve the environmental strains on California (particularly in the context of climate change) as well as reduce external costs associated with poor diet, health, and food access (e.g., public food assistance and public healthcare coverage).

At the federal level, the government could shift the majority of subsidies away from large-scale industrial, monopolistic corporations and significantly invest in smaller-scale, regenerative agriculture in urban, peri-urban, and regional contexts. These efforts could be incorporated with a federal Green New Deal legislation that invests in jobs within the agricultural sector in ways that support more localized agriculture (similar to AmeriCorps or the National Parks Service). Furthermore, federal legislation can tax agrifood companies for the negative externalities that

currently support the practices of the existing food system. For example, the federal government can impose a tax on carbon and methane, water eutrophication, chemical and synthetic fertilizer and pesticide use, air pollution, and other environmental externalities. Furthermore, the federal government can change nutrition guidelines to reflect cultural, dietary diversity and environmental and social health (e.g., reduced meat consumption), regulating marketing conditions (e.g., more transparent product labeling, regulations against junk food advertisements), and certification processes (e.g., make organic agriculture certification process more accessible). By supporting states and the urban centers within them to become more self-sufficient and reliant on local agriculture (which would strengthen rural farming economies), the federal government could ultimately save costs associated with negative externalities of the current food systems (e.g., federal food assistance, public healthcare).

Future research

Incorporating food resilience frameworks in urban planning. This dissertation provided a qualitative assessment to guide future work examining food system resilience in the urban context. Food provides a clear bridge for connecting across policy sectors and integrating both social and environmental goals in urban plans and polices. Future research should examine opportunities and barriers for urban planners and policymakers in pursuing strategies that maximize co-benefits and cut across sectors. For example, researchers should examine barriers/opportunities for incorporating food in housing policy, both in terms of the built environment (e.g., requiring space for community gardens in new developments) and in terms of economic constraints (e.g., taking food costs into account when considering rental control policies). As another example, we should examine opportunities and constraints in planning

transportation within urban food systems (e.g., making streets safe for pedestrian use to encourage walking to local grocers, planning public transit to better connect users to grocery stores and farmers markets, reducing vehicle-miles-travelled and vehicle emissions through more locally accessible food). Additionally, we should investigate the potential of food for maximizing co-benefits in the context of climate change adaptation and mitigation (e.g., using urban agriculture to provide green space and urban cooling effects, using regenerative agriculture to aid in carbon sequestration). Future research should explore the potential efficacy of these integrations (e.g., quantify the potential cooling effects of expanding urban agriculture) as well as the challenges in their implementations (e.g., budgetary constraints in designing cross-sector planning projects, limitations in political will and prioritization of food). Furthermore, we should examine the potential for urban planners incorporating food more formally into existing policy frameworks, such as including a Food Element in general plans.

Ultimately, future research should identify measurable quantitative indicators that allow policymakers to determine whether urban environments are moving toward more resilient (localized) food systems. For example, indicators can measure a variety of social and environmental criteria, including economic indicators (e.g., spending at farmers' markets; economic exchange between peri-urban, local, and regional farmers and urban consumers in lower income and/or communities of color; percentage of convenience stores carrying produce; community produce sales; percentage of community-owned and supported agriculture farms and food cooperatives; local food system wages), environmental indicators (capacity of municipal food waste and composting systems infrastructure; urban agriculture acreage; urban food waste; rates of regenerative agriculture use; fertilizer and pesticide use; stormwater catchment and

infiltration capacity; pollinator health; urban heat island effects; urban, peri-urban, and regional soil health; urban, peri-urban, and regional water use; food distribution energy use; food distribution miles), and social indicators (e.g., labor laws; physical and mental health outcomes; levels of obesity and dietary disease; levels of food insecurity; access to nutrient-dense foods; levels of social cohesion and networking; quality of life index). In order to guide policymakers in measuring outcomes, in addition to developing quantitative measures, we should expand qualitative research to better operationalize other factors indicating resiliency (e.g., stakeholder engagement in policies and planning; success of horticulture and food education; connection to place and nature; neighborhood aesthetics, due to changes in the built environment (e.g., community gardens, remodeled convenience stores); social relationships between food producers and urban consumers; knowledge of nutrition; food preparation skills; access to cultural foods).

Incorporating and exploring ecofeminist perspectives. Existing scholarship establishes that, globally, women have far less economic power and political control in the food sector across production, distribution, and consumption chains (Patel, 2012). Furthermore, the power of women may remain limited within alternative food movements as well, especially for women of color (Mallory, 2013b; Guthman, 2008). However, these power differentials may be manifesting differently or changing within certain urban food movements or in particular contexts. For example, Siegner et al. (2020), surveyed urban farms in a recent study examining opportunities for promoting agroecology in the East Bay area of California. Agroecology mirrors many of the ideals recognized by critical ecofeminists, including transforming and challenging power structures (Nyéléni, 2015) and employing “policies such as democratized planning processes,

knowledge sharing, recognizing the central role of women, building local economies and alliances, protecting biodiversity and genetic resources, tackling and adapting to climate change, and fighting corporate cooptation of agroecology" (Siegner et al., 2020, p. 570). A majority of the survey respondents in Siegner et al.'s (2020) study were women; furthermore, a majority of organizations surveyed were headed by women (62 percent). While anecdotal, a majority of the directors, staff, board members, and volunteers powering the innovative food organizations selected for this study were women (especially women of color). Relatedly, in both this dissertation and Siegner et al.'s, (2020) study, much of the labor supplying alternative, urban food movements and organizations is 'gendered' (i.e., volunteered or underpaid) due to economic constraints. As these organizations emphasize collaborative models of policymaking (e.g., sharing resources and information) when advocating for, advancing, and implementing local policies/plans/programs, it would be interesting to examine the extent of their practices mirroring tenets of ecofeminist/agroecology ideals within their organizations and/or within urban food movements (e.g., how engaged are women in designing participatory, equitable, resilient food-oriented spaces). In addition, we should continue to examine which types of resources (e.g., policies, plans, or other strategies) can empower women in their efforts to integrate agriculture into urban contexts. Furthermore, it would be worthwhile to examine how these urban food movements, largely led by women, can leverage their collective power to promote changes at greater levels of governance or within industrialized food systems. In addition, future research should examine if similar themes/opportunities exist in other forms of activism (e.g., climate change) as well.

As another point for continued research, in interviewes for this dissertation several women active in growing food described plants in ways that indicated they held a different, more compassionate value for them. For example, interviewees discussed hesitancy to give their produce away without ensuring a good home as well as a hesitancy to establish gardens in the yards of individuals who had used chemical weed killers in the past. These themes reinforce ecofeminist perspectives of "everything being food and more than food" and recognizing the inherent value in other living beings. It would be interesting to pursue these themes, particularly in terms of transferring these values to other pro-environmental behavior or engagement in environmental stewardship. If, hypothetically, growing food through regenerative practices changes individuals' perception of the natural world in ways that promote greater connection with and appreciation for the natural environment (as suggested by Davila and Dyball (2015)), then expanding education in and opportunities for growing food could lead to an incredible paradigmatic shift toward integrated social-ecological thinking and behavior.

Conclusions

In her essay, *The Master's Tools will Never Dismantle the Master's House*, Audre Lorde (1984) had two primary critiques of the feminist movement. Feminist leaders need to acknowledge and embrace differences among women (race, ethnicity, sexual orientation, income) and bring these differences into the feminist community in ways that allow for equitable participation, rather than performative overtures. Furthermore, feminist leaders need to look within themselves and acknowledge their own prejudices and then do the work to understand these biases and do the work to ensure that the voices, perspectives, and diversity of needs of all women are accounted for, supported, and lifted within the movement of feminism. Lorde

(1984) argued that by failing to do either of these, feminism as an alternative movement was reinforcing patriarchal oppressions—rather than dismantling them—by failing to include and amplify the most vulnerable and most oppressed perspectives in their movement (e.g., black, lesbian, lower-income) and by burdening the most oppressed women with the tasks of educating the less diverse women in power (e.g., white, heterosexual, upper class). Importantly, Lorde (1984) contended that by acknowledging, embracing, and empowering different voices within the feminist movement, feminists could begin to understand how systems of oppression (e.g., racism, classism, homophobia) intersect and reinforce each other; through this understanding, the feminist movement could generate the power and the vision for transformational change. Lorde states,

> Advocating the mere tolerance of difference between women is the grossest reformism. It is a total denial of the creative function of difference in our lives. Difference must be not merely tolerated, but seen as a fund of necessary polarities between which our creativity can spark like a dialectic. Only then does the necessity for interdependency become unthreatening. Only within that interdependency of difference strengths, acknowledged and equal, can the power to seek new ways of being in the world generate, as well as the courage and sustenance to act where there are no charters. (p. 2)

Applying Lorde's (1984) critique to food systems is instructive. Lorde (1984) highlighted how practices within a movement meant to transform predominant oppressions (i.e., patriarchy) can actually reinforce dominant, oppressive structures without concerted intention to view all practices through a justice and equity lens. As the urban food movement evolves, it is imperative that the resilience and urban planning and policy discourse acknowledges how different systems of oppression within food systems interlink, how these are reinforced, and how these impact vulnerable communities more than others. For truly transforming the food system within urban contexts, there needs to be an accounting of the ways that different groups and community

members are made more vulnerable through predominant food systems, and transformations must ultimately bolster adaptive capacity of these vulnerable communities by including them in the processes of transition. Without addressing, preventing, and reversing systemic inequalities and injustices that manifest in urban food contexts, efforts to build resiliency might actually undermine the potential for building social-ecological resilience and reinforce structural inequities within communities. Furthermore, urban food system organizations and alternative food movements are themselves vulnerable and currently rely on the generosity of volunteer labor and unreliable and inadequate funding mechanisms to function—these conditions are unsustainable, precarious, and may make true transformational change largely unattainable. While these organizations have made significant strides in their communities and beyond, it is unjust and unrealistic to expect these organizations to address structural, systemic forces without support. To promote greater food system resilience in urban contexts, municipalities must *significantly invest in* and *prioritize* food initiatives and focus these efforts through democratic, equitable, and participatory processes.

Perhaps the greatest sleight of hand from the corporate food regime, is successfully rendering invisible a system intertwined with so many facets of our daily lives. The items we consume are far removed from the environmental degradation and social inequality fundamental and necessary for their production. However, as presented at the start of this dissertation, many of the social and environmental vulnerabilities and injustices of the food system have been illuminated by the COVID-19 pandemic. These illuminations have deepened, as Americans are experiencing crisis on top of crisis and top of crisis. At the writing of this conclusion, we are not only in the midst of a pandemic (and the resulting economic crisis), but hundreds of thousands

of people in the United States and across the globe are marching against systemic racial injustices within the police system.

These shocks reverberating across our global system are laying bare our deepest social and environmental vulnerabilities and exposing the depths of systemic, deeply rooted inequalities. If we truly want to develop resilient food systems and address the related crises for the environment, health, and social justice, then we need to fundamentally and systemically change our relationship with food. These changes require a re-localization of food systems, that build food into the social and physical fabric of our urban landscapes. We need to re-orient our values, so that food is more than a commodity, but a source of nourishment, of learning, of cultural and social exchange, of compassion. Instead of producing and reinforcing inequality through cycles of poverty fueled by low-wages within the food sector and low access to healthful food, food systems can be used to build communities up through food growing and preparation jobs skills training programs, community-owned food cooperatives, living wages for food sector employees, economic relationships with local farmers, and access to nutrient-dense, culturally relevant, healthful, disease-preventing fruits, vegetables, legumes, and whole grains. Food is a lens for viewing intersecting problems within environmental, economic, health, and equity issues. Through this lens, clarified by the innovative, active organizations working tirelessly to improve the food system in Los Angeles County, we can see that social-ecological transformations are possible.

Perhaps the laying bare of our crises, coupled with the mobilization of citizens and a newfound, grave understanding of our interconnectedness, mark a period of social-ecological transition. As people mobilize and march, as urban spaces are transformed, as policies are

enacted and reformed, as leadership becomes more reflective of communities, as we continue to make connections between the environment, social justice, and health, transformation of our food system—and a more resilient and just world—seem more attainable.

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APPENDIX A

Interview Guide Questionnaire

Can you describe how the [policy/program/organization] fits into your [role] with [organization]?

- What is your position at [organization]
- How long have you been with [organization]?
- When and how did you become involved with [policy/program/organization]?

For the next set of questions, I am interested in understanding the process of establishing [policy/program].

In your opinion, what factors prompted the development of [policy/program/organization]?

- Which [groups/organizations/individuals] were advocates or champions for implementing the [policy/program/organization]? Please explain.
- Were there any [groups/organizations/individuals] in opposition to implementing the [policy/program/organization]? Please explain.

For the next set of questions, I am interested in your opinion regarding the impacts of adoption of [policy/program].

- In your opinion, what is [are] the primary goal[s] of the [policy/program/organization]?
- Do you think the [policy/program/organization] is on track to reaching these goals? Why?
- How has [policy/program/organization] changed social, economic, and/or environmental resilience of Los Angeles?

    - E.g., community health outcomes/dietary practices/ agricultural practices/ animal welfare/ economic productivity
- How do you anticipate [policy/program/organization] impacting [health/environment/agriculture/economy/water/energy/climate] in the future?
- Which community members are most impacted by [policy/program/organization]?
- Are any groups benefitting more than others? Please explain.
- Are any groups harder to serve by [policy/program/organization]? Please explain.
    - How has [your organization] responded?
    - How are these determinations made?
- What do you think makes [policy/program/organization] successful? Why?
- What do you think would improve [policy/program/organization]? Why?
    - What [policy/program/action/resources] do you think would be most helpful in improving the LA food system? Why?
- Has the [policy/program/organization] had any unintended benefits to the community or LA food system? Please explain.
- Have there been any unintended negative consequences? Please explain.
- Do you think the local LA food shed faces any social or environmental risks?
    - E.g., how concerned is [your organization] with increases in urbanization/population / changes in water availability / prevalence of chronic diseases / climate change impacts / agricultural productivity / economic growth?

- In your opinion, has [policy/program/organization] bolstered the local agricultural community to be better able to respond to changes in social and environmental conditions (e.g., climate change, drought)?
- How about bolstering capacity for women and other unrepresented populations?
- How vital do you think encouraging dietary change is to improving [community health / water resources / land use / climate change]?
    - Specifically, how vital is reducing our consumption of meat and dairy?
    - How about increasing our consumption of fruits, vegetables, plant-based proteins, and whole grains?

Based on your experience with [policy program/organization], what do you think are our greatest challenges in changing our diet?

- Have you noticed any changes in community food preferences? Please explain.
    - E.g., students requesting vegan meals in schools / residents requesting local produce
- Have you noticed any negative responses from the community? Please explain.
    - E.g., students complaining about Meatless Monday

For these next questions, I am interested in assessing the possibility for policy innovation and adoption by other regions.

- If [policy] were to be adopted by other [cities/local governments], what characteristics do you believe are necessary for adoption?
- Do you see any obstacles for other cities in adopting [policy]? Please explain.

- How do you think we could scale [policy] up to a larger region? What are some of the barriers or anticipated challenges in building this policy up?
- How much does your [organization] coordinate with other organizations or other [policies]?
- What types of incentives for adoption are available through [policy/program]? How were these utilized?
- Have other cities or governments reached out [organization] for guidance in implementing a similar [policy] in another location?
- Can you please explain this process and the extent of your involvement?

Thank you very much for your time!