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Ethnography of Urban Food Policy:
Increasing Food Sovereignty in Bellingham, Washington

By

Matia Jones

Accepted in Partial Completion
of the Requirements for the Degree
Master of Arts

ADVISORY COMMITTEE

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Master's Thesis

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Matia Jones

November 2020

Ethnography of Urban Food Policy:
Increasing Food Sovereignty in Bellingham, Washington

A Thesis
Presented to
The Faculty of
Western Washington University

In Partial Fulfillment
Of the Requirements for the Degree
Master of Arts

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November 2020

Abstract

This research examines how three organizations in Whatcom County, Washington – the Whatcom Food Network working at the county level, the Birchwood Food Security Solutions Working Group working at a neighborhood level, and the Western Washington University Food Security Working Group working at an institutional level – address food insecurity and promote food sovereignty in the metropolitan setting of Bellingham, WA. I frame food security and food sovereignty as social determinants of health or upstream medicine. Utilizing Participant Action Research and ethnographic methods, I explore this question by following three themes. First, I examine the composition and intergroup work process of each organization to better understand how these structures impact the way they work. Second, I explore what policies are being promoted and utilized by each organization. Third, I seek to understand the outputs each organization is achieving with the intent to address food insecurity and sovereignty. I conclude that each group addresses food insecurity at a different social level or activity, and as such, all three types of groups are needed to address the complexity involved in achieving local food security. Additionally, I recommend that funding for consistent staffing is needed at all three levels.

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List of Acronyms

BFSSWG:	Birchwood Food Security Solutions Working Group
CSA:	Community Supported Agriculture
FSWG:	Western Washington University Food Security Working Group
PAR:	Participatory Action Research
USDA:	US Department of Agriculture
WFN:	Whatcom Food Network

Chapter 1: Introduction

Food systems are the "network of people and activities connecting production, transformation (processing), distribution, consumption, and food waste management, as well as associated inputs, influences and policies" (Washington State Food System Roundtable Prospectus 2015). Many different types of organizations including county collaboratives, city coalitions, and university groups, seek to strengthen local food systems. However, little is known about how their organizational design and internal cultural practices impact their ability to positively impact food systems and food security, let alone how this is accomplished in a small metropolitan county. Using Bellingham, WA, a metropolitan town in Whatcom County, as a case study, this research examines how organizational design and cultural practices impact three food system groups' work. The groups involved are– the Whatcom Food Network, the Birchwood Food Security Solutions Working Group, and the Western Washington University Food Security Working Group address food insecurity and promote food sovereignty in the metropolitan setting of Bellingham, WA. Using Participant Action Research as a methodological foundation, I researched and worked directly with each group over a twelve-month period in order to examine the strengths and challenges each group experienced as they strove to meet their organizational goals within the local food system.

Observing these three differently sized groups allows me to consider a broad range of food policy work in this metropolitan community. Although each group differs in the scope of work and foci - the Whatcom Food Network works at the county level, the Birchwood Food Security Solutions Working Group at a neighborhood level, and the Western Washington University Food Security Working Group at an institutional level- each group shares some commonalities. Each group is a composite of multiple stakeholders who are attempting to create

cohesive policies that effectively crosslink multiple sectors of the food system and all of the groups make efforts to bring in multiple viewpoints and voices into the policy making process. But because the three research partner groups differ so greatly in their scale, foci, composition, policy goals, and activities, I found it particularly interesting that they shared the same basic need of consistent staffing, a topic I address later. This indicates that funding for staff ought to be strongly considered for groups working to enact *any* policy work regardless of their size.

This research addresses three broad research questions. First, I seek to examine the composition and intergroup work process of each organization to better understand how these structures impact the way they work. Second, I seek to understand what policies are being promoted and utilized by each organization. Third, this research seeks to understand the outputs each organization is achieving with the intent to address food insecurity and sovereignty. Using participant action research, I compare the process and products or outputs of three different organizations and advocacy groups that are working to this end. Each group addresses food insecurity at a different level, all of which are needed to address food insecurity due to its inherent complexity.

Theoretical Framework: Agrarian Political Economy

This research is guided by agrarian political economy. The *Journal of Agrarian Change* describes the broad field of agrarian political economy as the "social relations and dynamics of production property and power in agrarian formations and their processes of change both historical and contemporary" ("Overview - Journal of Agrarian Change" n.d.). Henry Bernstein, a leading thinker in the fields of peasant studies, agrarian political economy, and development, lauds it as "…a theoretical framework that is intrinsically capable of linking the economic, the

social and the political" (Campling and Lerche 2016). When discussing how to change food policy in order to increase food security and food sovereignty, it is essential to view these policies within their larger context. Agrarian Political Economy is useful when discussing food policy because it includes the greater contexts of social, ecological, political, and economic systems in which said policies are imbedded. "[O]ur modern food system has co-evolved with 30 years of neoliberal globalization that privatized public goods and deregulated all forms of corporate capital, worldwide. This has led to the highest levels of global inequality in history" (Holt-Giménez 2015). This perspective helps frame local food policy work within a much larger context.

In the wake of the global 'food crisis' of 2008, this inequality has ratcheted up as food and food growing capacity has been increasingly treated as a speculative commodity in the neo-liberal corporate food regime (McMichael 2012). Of particular concern are transnational food producing firms that value profit over social wellbeing. These "Transnational agrifood firms are motivated by profits and power in the marketplace, leaving other social, economic and ecological goals behind. This creates an agroecological crisis in the face of climate uncertainty but one that is rooted in social and economic organization" (Hendrickson, Howard, and Constance, n.d.).

Global hunger, food insecurity, and malnutrition, as well as health inequities between classes are increasing (Borras and Mohamed 2020). This trend holds true in the United States. In the U.S., underserved communities, hunger, and food deserts are growing as a result of food retail consolidation (Whitley 2013) and increasing poverty rates (Elmes 2018). Food access is a significant social determinant of health (Borras and Mohamed 2020; Horwitz et al. 2020). Reduced access to healthy and adequate nutrition is contributing to increasing incidence of diet-related diseases, a concern which is bringing health officials, policy makers, and researchers'

attention to ‘food environments’ (Weatherspoon, Ploeg, and Dutko 2012). With this focus on improving food environments, food system resiliency has been emerging through what has been coined the ‘local food movement,’ which is described in more detail in the literature review.

Resiliency and Decentralized Food Systems

Holt-Giménez asserts the US food movement has emerged in response to the failings of the global corporate food regime (Holt-Giménez 2015). Much of the food movement’s work has focused on healthy food access, local food, food and farmworker rights, animal welfare, seed sovereignty, GMO labeling, organic farming, community supported agriculture (CSA), and urban agriculture (2015). The focus is on decentralizing food systems in an effort to loosen the hegemonic grip of the corporate food regime by strengthening local food systems, food democracy, and food sovereignty.

> “Food sovereignty is the new policy framework…[that] embraces policies not only for localizing the control of production and markets, but also for the Right to Food, people's access to and control over land, water and genetic resources, and for promoting the use of environmentally sustainable approaches to production” (Windfuhr 2005).

Decentralization efforts can take place on numerous levels and points in the food system (Bellows and Hamm 2003). Urban agriculture, which I argue is a useful approach to pushing back on the centralized international corporate food regime, is worth exploration. Urban agriculture is one response to food deserts in poor urban centers. City-dwellers who engage in UA generally increase their dietary diversity and nutrient dense food consumption (Burchi, Fanzo, and Frison 2011; Cabalda et al. 2011). It also improves food security for participating low-income residents (Cabalda et al. 2011; Eigenbrod and Gruda 2015). In addition to these benefits, UA also has a history of increasing communities’ ‘food sovereignty’ (Altieri, Funes-

Monzote, and Petersen 2012; Altieri and Manuel Toledo 2011; Guercan 2014; Michael Rosset et al. 2011; Wittman, Desmarais, and Wiebe 2010). Local food production and food sovereignty increase communities' resilience to global food commodity price fluctuations (Guercan 2014) and climate fluctuation (Altieri et al. 2015; Wortman and Lovell 2013). Within this context, UA is framed as a component of upstream medicine and as a critical aspect of resilience and resistance to neo-liberal food systems.

However, urban agriculture along with all of the other local food movement efforts, does not fundamentally change what Holt-Giménez identifies as larger national and international structures such as the US Farm Bill, USDA, free trade agreements, the World Bank, International Monetary Fund, USAID, supermarket and food oligopolies, as well as big philanthropy that control the context in which all this work is being done (Holt-Giménez 2015). This paper does not have the scope to address these much larger and more powerful drivers of local food systems. Instead, it looks at ways in which local organizations and citizen groups can affect meaningful change at the local level. These larger factors ought not be forgotten though.

Literature Review

Three research literatures guide this research. First, food security and food sovereignty. Second, literature on local food movements. Third, research regarding food policy councils with attention to organizational structures.

Food Security & Food Sovereignty

The United Nations Food and Agriculture Organization defines food security under four criteria that can be interpreted as food stability. As the 1996 UN FAO report states, food security is the

> "(i) availability of sufficient quantities of food of appropriate quality...(ii) access by individuals to adequate resources (entitlements) for acquiring appropriate foods for a nutritious diet; (iii) utilization of food through adequate diet, clean water, sanitation, and health care to reach a state of nutritional well-being where all physiological needs are met; and (iv) stability, because to be food secure, a population, household, or individual must have access to adequate food at all times" (Food and Agriculture Organization of the United Nations 2001).

Food sovereignty includes food security but extends beyond simply having access to enough healthy food to maintain physical wellbeing. Food sovereignty also includes self-determinism. It is "[t]he right of nations and peoples to control their own food systems, including their own markets, production modes, food cultures, and environments" (Wittman, Desmarais, and Wiebe 2010). The UN's FAO Food Security and Sovereignty document expands in detail:

1. Focuses on food for the people by: a) placing people's need for food at the centre of policies; and b) insisting that food is more than just a commodity.2. Values food providers by: a) supporting sustainable livelihoods; and b) respecting the work of all food providers. 3. Localizes food systems by: a) reducing the distance between suppliers and consumers; b) rejecting dumping and inappropriate food aid; and c) resisting dependence on remote and unaccountable corporations.4. Places control at a local level by: a) placing control in the hands of local food suppliers; b) recognizing the need to inhabit and share territories; and c) rejecting the privatization of natural resources.5. Promotes knowledge and skills by: a) building on traditional knowledge; b) using research to support and pass on this knowledge to future generations; and c) rejecting technologies that undermine local food systems.6. Works with nature by: a) maximizing the contributions of ecosystems; b) improving resilience; and c) rejecting energy intensive, monocultural, industrialized and destructive production methods (Food and Agriculture Organization of the United Nations 2013).

Food sovereignty excludes dependency. Being on food stamps or accessing a food bank in order to meet nutritional needs does not qualify as food sovereign because others control the access

points to food. In contrast, a community or family that grows and distributes its own food and is food secure is one that has achieved food sovereignty.

Food Insecurity in Metropolitan Settings

Over half of the world's population now lives in cities and that number is growing (Crush and Frayne 2011). With this urbanizing trend, comes increased urban poverty, food insecurity, polluted environments, and malnutrition (Orsini et al. 2013). Food insecurity in urban areas is rapidly increasing, and political unrest and food riots have been occurring in middle and high-income countries (Morgan 2015). Globally, food prices increased 83% from 2005 through the global economic crash of 2008 (Guercan 2014). Even ten years after the crash, marginalized populations are still suffering increased rates of hunger (Botreau and Cohen 2019). Crush and Frayne state that urban food insecurity urgently needs to be addressed, and that it is emerging as the development challenge of this century (2011). The Millennium Development Goals and Scaling Up Nutrition (SUN) movement calls for increased local, regional, national, and international political will to alleviate food insecurity and malnutrition (Muthayya et al. 2013). The scope of this paper will not allow for an in-depth analysis of global food insecurity, but I want to frame the work being done in Bellingham within the larger global challenge of meeting the nutritional needs of urban poor.

Historically, US nutrition and agriculture policies have focused on producing enough calories for populations but not paid sufficient attention to nutritional quality of those calories (Burchi, Fanzo, and Frison 2011). Current agriculture policies are dominated by yield and profit

goals not nutritional goals. This focus on big agribusiness rather than on population health has impacted US diets and thus community health. Hidden hunger and obesity are two examples.

Hidden hunger is a type of malnutrition that results from eating undiversified diets comprised of low nutrient dense foods, (Harrison and others 2010) and the health impacts can be devastating. Hidden hunger describes micronutrient deficiencies such as iron-deficient anemia, inadequate vitamin B, Calcium, and Folate levels. This Hidden hunger affects approximately one third of the global human population (Muthayya et al. 2013). Harrison states that hidden hunger contributes to maternal mortality, susceptibility to infectious disease, childhood morbidity, stunting, delayed or decreased cognitive and motor development, and lost productivity (2010). Since 2007, progress reducing hidden hunger has slowed due to: increased food prices, extreme weather fluctuation and climate events, volatile global economics, and a shift toward processed foods (Tim Wheeler, Joachim Von Braun 2013). Childbearing women and children in low-income communities and the global south are the most vulnerable demographics affected ("WHO | WHO and FAO Announce Second International Conference on Nutrition (ICN2)" n.d.). However, hidden hunger occurs in both impoverished and affluent countries.

Obesity that co-arises with hidden hunger and malnutrition is a concern that can be addressed by higher quality foods. The Obesity/Hunger paradox is one example of how calorie rich yet nutrient poor foods impact community health. In this paradox hunger (or nutritional deficiency) is disguised as obesity (Iriart et al. 2013). Twenty-five percent of children in the US suffer from hunger daily, yet the prevalence of childhood obesity is on the rise (Juby and Meyer 2011). Despite having adequate protein and calorie intake, children with micronutrient deficiencies can develop a number of serious health problems later in life. Particularly during sensitive stages of physical development, micronutrient deficiencies can affect the genetic coding

for a variety of common non-communicable diseases (Troesch et al. 2015). Deficiencies in utero can lead to improper organ and vascular growth and function, cardiovascular disease, metabolic problems including type 2 diabetes and adiposity (Christian and Stewart 2010). Fetuses deprived of adequate micronutrients have a higher likelihood of developing dyslipidemia, hypertension, and obesity in adulthood (Kau et al. 2011). Throughout life, inadequate antioxidants can exacerbate DNA damage from oxidative stress. This increases age-related degenerative diseases such as arthritis and cancers (Ames and Ames 2010). Hidden hunger contributes to a wide array of public health problems. This public health burden can be ameliorated by simply increasing access to adequate nutrition.

Local Food Movements

The contemporary local food movement that has emerged in metropolitan centers in the global north began with the natural food movement of the 1960s, and the organic food movement that followed. The local food movement also has influences from the transnational peasant farmers' *La Via Campesina* movement, which aims at increasing rural food sovereignty in the global south (Torrez 2011). Although the populations and geographic locations are quite different, both La Via Campesina and the local food movement focus on creating just and sustainable food systems that reclaim food production and distribution from corporate control (Clendenning, Dressler, and Richards 2016). The local food movement endeavors to make food systems that: promote more equitable economic exchanges by reconnecting producers directly with consumers, reduce the environmental impacts of agricultural production and food transportation, and improve the quality and accessibility of nutritious food (Clendenning, Dressler, and Richards 2016).

The literature argues that local food movements take three forms: (1) *individual-focused sub-movements*; where individual consumers choose to purchase local food for gustatory, environmental, or social reasons, (2) *systems-focused sub-movements*; which focuses on policies and laws that affect food systems, and (3) *community-focused sub-movements;* where food systems and communities co-create each other and food serves as a "collectivizing force" (Werkheiser and Noll 2014).

Individual-focused sub-movement, are broadly critiqued in the literature. Critics of this local food movement, broadly speaking, claim that buying locally produced foods, or being a 'locovore,' is another expression of yet more consumer choice for affluent populations (DeLind 2002). Some authors such as Yuki Kato (2013) argue that local food movements perpetuate inequalities – especially those affecting historically marginalized populations such as urban poor. These are communities and individuals that are not included in many Community Supported Agriculture (CSA) programs (direct produce buying contracts with farmers), farmers markets, and urban agriculture (UA). The types of food, prices of products, locations of markets, and the ethnic/class/age makeup of UA promoters have not been adequately considered; in some cases have excluded these populations from engaging in the local food movement and urban agriculture (Kato 2013).

Werkheiser and Noll (2014) agree that the most visible and popularized aspect of the local food movement does not fundamentally change the social inequities in the dominant global food distribution systems. Nor does it empower marginalized citizens to organize and change unjust labor practices. However, they point out that viewing the local food movement through this limited 'locovore' lens is only acknowledging the individual-focused sub-movement, which is one facet of a much larger and more complex movement. Werkheiser and Noll continue to

explain how individual consumers, voting with their dollars, characterize the individual-focused sub-movement. This is the intersection of the local food movement and what some call ‘lifestyle politics’ where individuals’ buying habits are their primary lever for social change (2014). In the individual-focused sub-movement, people are defined as consumers and food as a simple commodity (Werkheiser and Noll 2014).

Although this consumer level of engagement does not address systemic inequities such as poverty and food insecurity, US government-subsidized industrial agriculture, which fosters obesity and other nutritional problems (Fields 2004), or trade agreements that destroy farming communities in the global south (Holtz-Gimenez 2006), it does have an impact. Even superficial change in individuals’ consumer habits redirects money that would have otherwise gone to grocery store chains, middlemen, and distant food processors (Werkheiser and Noll 2014). Instead, buying local keeps the money in the local community and allows farmers living wages. It also reduces the food miles that their local produce traveled and thus their carbon footprint (Altieri and Manuel Toledo 2011). These changes do add up, but they will not be the central focus of this paper.

Systems-focused sub-movements, addresses larger scale food system change. This ‘systems-focused sub-movement’ aims to change policies and laws that affect food production and distribution. This aspect of the local food movement aims to involve institutions and form organizations. Rather than focusing on individuals as the primary locus of control, it focuses on changing food systems through advocacy and policy. People are defined as citizens and activists and food as a commodity situated in a larger system. Werkheiser and Noll (2014) describe it as the intersection of the local food movement and the food security movement.

On a global scale, the food security approach has strong neo-liberal globalization components. Stakeholders such as the Food and Agriculture Organization (FAO) of the United Nations and the World Bank tend to advocate for high-input industrialized agriculture, large-scale distribution models, and GMO crops (Werkheiser and Noll 2014) which are all antithetical to the central goals of the local food movement. However, Harper points out the importance of food policies: They affect food production, supply, quality, distribution, price, and consumption. Government and institutional action and inaction have profound effects on food systems and have the potential to both increase food security and sovereignty depending on the context (Harper et al. 2009). I will be addressing the systems-focused sub-movement within the context of the Whatcom Food Network and the Food Systems Working Group.

The third sub-movement is *community-focused sub-movement*, an intersection between the local food movement and the food sovereignty movement. Werkheiser and Noll have a more nebulous definition for this sub-movement, but state that the way people grow, sell, and consume food creates and reproduces communities. Food and people are intertwined and food is a "collectivising force" which marginalized people can organize around (2014). Hendrickson describes this type of food system engagement as being self-regulated and comprised of collective actions where food is treated as a commons rather than a commodity. This fosters solidarity and sustenance rather than competition and exclusion (Hendrickson, Howard, and Constance, n.d.).

The community-focused sub-movement can be seen implemented in metropolitan and inner-urban areas. These communities, which are often ignored by local governments and as a result are experiencing depressed economies, have been using urban agriculture to reverse these trends (Poulsen et al. 2014). City-dwellers who engage in UA generally increase their dietary

diversity and nutrient dense food consumption (Burchi, Fanzo, and Frison 2011; Cabalda et al. 2011). This is in part due to increased affordable access to nutrient rich fruits and vegetables (Poulsen et al. 2015). It also improves food security for the low-income residents who participate in urban agriculture (Cabalda et al. 2011; Eigenbrod and Gruda 2015). This local food production not only increases the amount and improves the quality of food the residents have access to, but it also improves the social network of neighbors, stimulates the local economy, and improves community morale (Poulsen et al. 2014). Not all community members need to engage directly in the farming process, these benefits extend to customers who have access to affordable fresh produce.

Urban agriculture increases communities' resilience to global food commodity price fluctuations (Guercan 2014) and has been applied in a variety of communities around the world in an effort to increase vulnerable populations' nutritional security and food sovereignty (Altieri, Funes-Monzote, and Petersen 2012; Altieri and Manuel Toledo 2011; Guercan 2014; Michael Rosset et al. 2011; Wittman, Desmarais, and Wiebe 2010). Within this context, UA is framed as a component of upstream medicine or liberation medicine. It is a critical aspect of resilience and resistance to neo-liberal food systems. These examples are contrary to Kato's earlier criticisms of the local food movement being primarily a privileged social endeavor. These examples show that the local food movement can and does benefit urban poor populations. However, the ways in which food policy work is enacted and urban agriculture is integrated into communities will determine its success at meeting low-income community food needs. The work of the BFDF is situated within the community-based sub movement of the local food movement.

Food Policy Councils

Food Policy Councils are a collaboration of stakeholders who represent any or all aspects of the local food system: production, consumption, processing, distribution and waste recycling- often with anti-hunger/food justice and sustainability goals (Scherb et al. 2012). Food Policy Councils act as platforms for community dialogue about food system issues. In addition they create a coordinated advocacy body linking uncoordinated 'silo' efforts of numerous agencies such including health departments, school districts (lunch programs), food banks, public transportation, city planners, waste disposal, non-profits, etc. (Holtz-Gimenez, 2015). Holtz-Gimenez also asserts that local food policy responses to local issues are more effective than federal responses due to the wide variety of environmental, cultural, and community-specific issues in each locale (2015). There may be a national trend toward local food policy council formation. Thirteen cities in the US currently have paid food policy directors or coordinators and 130 cities in US and Canada have local food policy councils, which assist food security, sovereignty, and the local food movement (Leib and Michele 2013). These food policy councils tend to have diverse organizational structures (Mooney, Tanaka, and Ciciurkaite 2014). Surprisingly, little if any research has been conducted on food policy councils in small metropolitan towns and counties, a topic this research briefly addresses. Further research is needed.

Thesis Structure and Organization

This thesis is organized into five chapters. In Chapter 2, I present the research methodology and discuss my utilization of participatory action research and how my position as

a local farmer and organizer allowed me to navigate the community and form research partnerships. I also present the local field site and methods in the study. In Chapter 3, I introduce the three research partners. The first, Whatcom Food Network (WFN) is a county wide consortium of agencies, institutions, and organizations working to strengthen the region's food system. The second, the Birchwood Food Group (BFSSWG), is a neighborhood coalition that strives to decrease food insecurity and increase food sovereignty in an underserved neighborhood in Bellingham. The third, Western Washington University Food Security Working Group (FSWG) is an institution that seeks to change the University's food purchasing policies and practices in ways that support the region's food system. There were several other groups and organizations doing similar work in Whatcom County, but these three were the most active and accessible at the time of my research. As I explain, each organization was selected because each had a unique approach to addressing food security and sovereignty and could potentially shed light on the topic. In the fourth chapter I present my findings. For each organization I present the strengths and challenges each type of organization encounters in regard to organization composition, policy engagement, and output. I also argue that each group addresses food insecurity at a different level, and while there is overlap in the populations, all three types of organization are needed to address food insecurity precisely because food insecurity is so complex. In the fifth and final chapter, I address limitations to this research and discuss potential recommendations for other organizations that wish to successfully change local food policy.

Chapter 2: Research Methodology

This thesis contributes to a growing body of interdisciplinary applied anthropological research. My research is situated within a Participatory Action Research (PAR) framework (Stoecker 2012) which aims to benefit both the researcher and the 'researched.' My work studying how a community strengthens its own local food system is relevant to my research community and it has the potential to assist this community in achieving their goals in the coming years. Before addressing the research methodology, it is important to understand the research approach and my positionality, two factors that were important in the development and completion of this research. I then close with a discussion of how I exited the field, an important aspect of research that I feel is often overlooked in anthropological research.

Research Approach: Participatory Action Research

In accordance with the Participant Action Research philosophy, or PAR (Minkler 2000; Miterko and Bruna 2020), I collaborated with my research partners throughout the research process. Key elements of PAR are to develop a research question that is relevant to the community partners, help them with their efforts, and contribute to their group's capacity to address their own needs (Stoecker, 2005). As such, I developed the research question with community partners, volunteered hundreds of hours over the course of a year and a half helping each community partner work toward their goals, and helped them build their capacity to conduct their own evaluations and research in the future.

I was fortunate enough to utilize an advisory committee for this research. The Community Food Assessment Subcommittee of the Whatcom Food Network (Burrows and Betz 2011) served as an advisory committee to a large portion of my research. This subcommittee was

composed of members from the Food Access and Health Promotion Specialist from Washington State University Extension faculty, a Whatcom Farm-to-School Support Team representative, Sustainable Connections' Food and Farming Communications Assistant, and a Community Health Specialist from the Whatcom County Health Department. This advisory committee collaborated with me to find research goals that would both meet my thesis needs while also offering timely and useful assistance to their efforts promoting a local food policy council or plan.

In this regard, the research questions emanated from the research communities in a way in which Lamphere, in (Beck and Maida 2015), describes as an important hallmark of Community Based Participatory Research. My engagement with all three of my research partners kept their present needs at the forefront of my work and comprised the majority of my time on this thesis. Although this project did not employ CBPR approaches because that methodology would have extended my degree timeline far longer than is appropriate for a master's thesis, I leaned toward that general philosophy. Simply stated, I was committed to contributing to my research partners' causes and collaboration and reciprocity were central to my research practice.

There is much scholarly discussion regarding how to balance the professional goals of a researcher or research team with those of the community partners (Fletcher, Hammer, and Hibbert 2019). In addition to Lamphere's assertion that the research question must be pertinent to the community, Fletcher explores how to make the entire research process mutually beneficial. "Debriefing sessions" throughout the research project are one way that Fletcher's team incorporated the community's needs and feedback throughout their collaborative project. I followed suit and scheduled regular meetings with my advisory committee so that we kept each other abreast of emerging questions or concerns.

This was what I would call an "advocacy driven thesis project." My research linked these local efforts to global food sovereignty movements. It also contributed to the current discourse on how to counter the growing trend of urban food insecurity. I acted as a community engaged scholar in an advocacy-based research project.

Researcher Positionality

My positionality as a researcher reflects a shift in contemporary anthropology to applied and engaged research. As opposed to historic trends in the field, I am not a researcher who occupies a traditionally privileged position nor am I studying a traditionally underprivileged community. The power dynamics in this thesis are somewhat inverted. I am primarily studying the policy work of political power holders and local government to affect political and economic change. I am, as Laura Nader writes, 'studying up' (1972.) She argues that there is a need for more anthropological work studying the middle and upper ends of social power structures (Nader 1972) as a way to change social determinants of health and achieve greater degrees of social justice. This thesis will contribute to the important trends of adding underprivileged voices to academic discourses and 'studying up.'

I grew up in a food and housing insecure family. When I was young, my father worked as a machine maintenance man at a lumber mill in north central Washington. He worked the night shift. His day shift counterpart had his hand ripped to pieces when the machines got turned on while he was inside working on them. This spurred my father to lobby for safety switches on the machines and later a labor union. He was not successful at either endeavor. Consequently, he was fired from this job and blackballed in our small rural community. Our family had to move out of our house and into a four post and tarp lean-to structure and a tipi. We had enough food

because we still had access to good land and water and my father was an excellent hunter. We had adequate fresh produce and venison, and our lives were alright.

This changed when we moved to the metropolitan city of Seattle. Our housing situation was not adequate shelter for a small and sickly seven-year-old during a sub-zero winter in north central Washington. So, my parents and I moved in with relatives in Seattle. Although living in a house allowed me to expend fewer calories to stay warm, our food supply was far lower quality and my health suffered because of it. We were subsisting off food stamps in the 1980's. I stopped growing for three years and developed a multitude of immune system problems. By fourth grade, after I had attended five schools, my father finally found consistent work. My food supply improved immensely: I began to grow again, learned to read, and an indelible and embodied connection between food justice and health was embedded in my psyche.

Much later, just after turning 24, I became my younger sister's legal guardian for a couple of years. This experience, of being a single parent, allowed me first-hand research on how to construct a healthy diet on a food stamp budget. Due to my early nutritional and health problems, I developed what may be permanent damage to my digestive system and ability to absorb nutrients. Because of this, I cannot physically afford to eat nutrient poor or low-quality foods. So, I pieced together multiple part time jobs, got help from the Port Townsend Food Bank, grew a garden, cooked from scratch, and figured out how to maintain an all-organic and whole foods diet for my sister and me. This experience let me deeply understand some of the challenges that single parents or low-income people must overcome to feed their families nutritious food in the United States. It piqued my interest in larger scale food systems and how to improve them.

I have worked with a variety of local food justice, sustainable agriculture, and food sovereignty advocates in the Salish Sea region for 14 years. My work included running the

Bellingham Food Bank Farm, teaching bio-intensive urban agriculture classes at Wellspring High School, Fairhaven College, and the Bellingham Food Bank Farm, running Western Washington University's Outback Farm, teaching whole foods cooking classes for underserved populations, guest lecturing on sustainable agriculture and food justice topics at the University, and teaching Human Ecology courses through Fairhaven College. During all of this work and my decade of being an organic farmer, I met and forged professional relationships with many local food system stakeholders. This helped me network and connect with the research groups I present in the next chapter.

Field Research Site

Whatcom County, Washington

This research took place in Whatcom County, Washington. Whatcom County is nestled in the northwestern most corner of Washington State. The moist maritime climate, with mild temperatures and long daylight hours in the summer, make this region ideal for growing a wide variety of food crops. The craggy peaks of the Cascade Mountain Range to the East catch rain clouds as they roll in off the Puget Sound and the Salish Sea to the West. This keeps the weather in Whatcom County cool and mild, with an average range of 33 degrees Fahrenheit in the winter to 73 degrees in the summer (NOAA, 2015). Annual average precipitation is 35.83 inches, and it is dispersed throughout the year (NOAA, 2015).

In addition to the climate, the topography and soil also contribute to diverse growing conditions for numerous crops. The northern half of Whatcom County is relatively flat with some gently rolling hills. Dairy cows, berries, and pasture lands/hay dominate this area ("2012 State and County Profiles | 2012 Census of Agriculture | USDA/NASS" n.d.). The southern half

is more mountainous with a few interruptions of flood plains along the three forks of the Nooksack River. This southern area has numerous small diversified farms tucked into the rich bottomland. Of Whatcom County's 518,135 acres, 115,831 of them are engaged in agricultural use ("2012 State and County Profiles | 2012 Census of Agriculture | USDA/NASS" n.d.). The 100 or more soil types (Goldin et al., n.d.) tell of a wild geologic past, as well as provide a great range of growing opportunities (see photo below).

Photo 1: Aerial View of Whatcom County Farmland (Washington State University, n.d.)

Whatcom County boasts about its agricultural abundance. "With 140 miles of marine shoreline and 100,000 acres of highly productive farmland, Bellingham and Whatcom County, Washington are a fresh food haven**...** Farm production in Whatcom County ranks in the top three percent of all counties in the United States" (Bellingham n.d.). Farmers grow a wide variety of crops and livestock ranging from tree fruit and nuts, mixed vegetables, grains/beans/oilseeds, berries, dairy, eggs, poultry, potatoes, honey bees, feed for livestock, aquaculture, and a variety of meat livestock ("2012 State and County Profiles | 2012 Census of Agriculture | USDA/NASS" n.d.). In terms of agricultural production, the Census of Agriculture states that the county ranks first of all 17 counties in Washington State; growing over $300 million a year in products.

Although the abundance and diversity of food grown in Whatcom County create a potential for the community to enjoy food security as well as food sovereignty, there is a stark juxtaposition between this feculent agrarian landscape and a food insecure population that lives here.

Bellingham, Washington

Bellingham is a small metropolitan city with a population of 92,000 people ("U.S. Census Bureau QuickFacts: Whatcom County, Washington; Bellingham City, Washington; Washington" n.d.). The US Census (2019) states that 82.5% of the town's population identifies as white; 9.3% is Hispanic or Latino; 6.4% is Asian; 6.9% identify two or more races; 1.6% black/African American; 1.3% Native American or Alaskan Native, and 0.2% Pacific Islander/Hawaiian. Education data report that 93.8% of the population holds a high school diploma and 44.7% have bachelor's degrees or higher ("U.S. Census Bureau QuickFacts: Whatcom County, Washington; Bellingham City, Washington; Washington" n.d.).

Despite the high educational status, Bellingham's census information reported a high poverty rate; 21.8% compared to the US average of 9.8%. This is higher than Mississippi's poverty rate of 19.6% which is listed as the most impoverished state in the nation (Census 2019). According to the Whatcom County Health Department and Washington State University's Agriculture Extension Department, Bellingham residents struggle with food insecurity; in addition to high poverty, 8.6% are on EBT (food stamp assistance,) and 41% of public school students qualify for lunch program assistance (Burrows and Betz 2011). Twenty percent of the city's population utilizes the Bellingham Food Bank, which services over 4,500 families in Whatcom County a week, making this one of the busiest food banks in western Washington ("Bellingham Food Bank" n.d.). In addition to being food insecure, many of these residents are

not meeting the CDC's recommended five servings of fruits and vegetables daily as Bellingham residents only consume 23-33% of the CDC's recommendations (Burrows and Betz 2011). This indicates a combination of poor food choices and/or a lack of access to healthy food.

Birchwood Neighborhood

On the north end of Bellingham is the ethnically diverse Birchwood neighborhood. It used to be brimming with fresh produce and Victory Gardens during World War II. The neighborhood is referred to as the 'Victory Garden Neighborhood.'(Bjornson n.d.) and was once referred to as the 'breadbasket' of the city. Ironically, this historically productive food rich neighborhood was declared a food desert, a low-income area that has low food access, in in 2016 as it has more than 100 households without vehicles who live more than .5 miles from the nearest supermarket ("USDA ERS - Documentation" n.d.).

Since 1982, this neighborhood has had an Albertson's supermarket, the main source of fresh food. In the spring of 2016, Albertson's closed, leaving a vacant building and a dearth of fresh food access for the surrounding area. In addition to leaving the area without a supermarket, Albertson's also left the area without the ability to get a new supermarket. In their 1982 Declaration of Restrictions and Grant of Easements, Albertson's put a legally binding non-competition clause into their lease, disallowing any other supermarket from occupying that area for 65 years (Declaration of Restrictions, 1982). This leaves a poor neighborhood with low per-capita vehicle ownership and limited public transit with no major grocery source until the year 2047. This limited food access impacts both the Birchwood residents as well as the city of Bellingham as a whole.

Upon the inception of my research, there were a number of organizations grappling with the causes as well as solutions to food insecurity within Whatcom County in general, and Bellingham and the Birchwood community in particular. I chose to partner with the Whatcom Food Network and their Community Food Assessment sub-committee, the Birchwood Group, and the Food Systems Working Group because they were all actively engaging in promising efforts. They all sought to strengthen the local food system with food security and/or food sovereignty goals as their central pivot points.

Research Methods

This research was approved by the Western Washington University Institutional Review Board (Protocol #EX16-126). Organizations agreed to use their actual names in this research. The names of individuals, however, are changed.

I sought to answer three questions in this research. First, what is the composition and intergroup work process of each organization and how does this structure impact their work? Second, what policies, if any, are being promoted, developed, and utilized by each organization? Third, what outputs does each organization achieve with the intent to address food insecurity and sovereignty? In addressing these three questions, it was my hope to have an understanding of the strengths and challenges of each organizations' approach.

To answer these questions, this research utilized a mixed methods approach, including an organizational structure analysis, participant observation, interviews, and policy document review. Below, I discuss the methodologies individually. Additional details on the Community Food Assessment creation, and how each method intertwined, a process that may be useful for community partners, is provided in Appendix A.

I purposefully selected (Bernard 2017) organizations to work with based on my knowledge of the local organizational landscape. I also selected the three organizations because they had different structures and compositions which allowed for case study analysis and comparison. For each organization I conducted what may be considered an organizational structure analysis (Spradley 1980; Wright 2004). I began by charting each group's organizational structure. I noted the professional and social positionalities of the groups' members. While interesting, this structural information proved to be less useful and was not included in the thesis. However, through participant observation I was able to document the internal and external work practices of the group in my field notes. Where I had questions regarding chain of command, decision-making, group process and the like, I conducted informal interviews with group members. This structural analysis, though more ethnographic than I initially anticipated, helped me understand how each organization operates.

Extensive participant-observation was the primary source of data for this research. By volunteering an average of 20 hours a week, and sometimes as many as 50 hours, over a year and a half long period, I was able to collect detailed observations and better understand organizational structures. These notes also allowed me to reflect on my experiences and provide the bulk of data for my analysis. This methodology was particularly useful when examining the effectiveness of each group at meeting their food security and food sovereignty goals. I viewed effectiveness as each organization's ability to reach their own defined goals based on their mission (Riches 2002). For the WFN, I attended 3 County Council meetings, 23 WFN and CFA meetings, forums, and additional presentations and events when offered. I also researched, co-authored and presented on the updated Whatcom Community Food Assessment at the 2017 public Fall Forum. This report, nearly a thesis in itself, is provided in Appendix A. The

Birchwood Group met less often but I was able to attend meetings and events and volunteer with door-to-door surveys for the organization over the course of 9 months. With FSWG, between October of 2016 and December of 2017, I attended the majority of their meetings (n=7), chaired the Product Shifting Subcommittee, and held the organizations only voting "student at large" position. Later, while writing my thesis, I maintained remote contact with these groups and helped them with their projects on an on-going basis.

In all, I conducted forty-six interviews (*n*=46). Ten (*n*=10) were structured interviews with key food system stakeholders in the region. In addition to those I also conducted sixteen (*n*=16) semi-structured interviews (Bernard 2017), five (*n*=5) with the WFN, 5 (*n*= 5) with the Birchwood Group, and 6 (*n*=6) with the FSWG. I also conducted 20 follow up interviews which were not recorded but served to fill in gaps in my understanding. All structured interviews were recorded, transcribed fully or partially and reviewed by the interviewees to assure accuracy and their satisfaction with the final product. Transcripts were reviewed to highlight the strengths and challenges working with each organization.

To supplement data collection, I conducted a policy document review (Freeman and Maybin 2011). Broadly speaking, I explored why and how policy was being promoted and/or used by each organization. I used participant observation when I attended meetings, forums, presentations, and other gatherings that pertained to enacting, changing, promoting, developing, supporting, or utilizing local policies. I analyzed both internal and external policy documents from each research partner when they were attainable.

At the end of the data collection period, I collaborated with my research partners in the analysis. I transcribed interviews and shared them with my collaborators to check for accuracy and to clarify questions. Then I analyzed these documents, to find emergent themes. I shared my

findings with my collaborators first. Then, with permission, I published them in my thesis and in the 2017 Community Food Assessment (See Appendix A). Following completion of the first draft of this thesis, I volunteered additional time to apply the findings to future projects, though I do not address that process or products in this thesis. Following completion of the thesis it will be posted and accessible in the Western Washington University Library.

Exiting the Field

In addition to carefully building rapport with research communities as I entered the field, I found it equally important to exit research partnerships with care. The relationships that I forged, networks that I strengthened, and work that I helped with are valuable to me. Much of the work that community partner organizations were doing while I conducted my research continues to go on after the publication of my thesis. However, I had to conclude my extensive volunteer work with them in order to complete my graduate studies and earn a living. The way in which I wrapped up my work with each partner varied.

The WFN was the most organic transition. Upon completing the Community Food Assessment, the Community Food Assessment Subcommittee was dissolved. We presented our CFA findings at the 2017 Fall Forum, celebrated our good work by going out for drinks, and wished each other well on our professional journeys.

Transitioning out of the FSWG was a bit less succinct. After serving as the Chair of the Product Shifting Subcommittee for about a year, I handed off the baton to an undergraduate student who felt able to stay involved with the group for years to come. I introduced her to the other members of the subcommittee, oriented her on the group’s progress and process, and

offered my future support if she had questions or challenges. I remained connected to the group through e-mail communication and left the door open to helping in the future.

With the Birchwood Group, my involvement tapered off as the group composition morphed and actionable engagement became less clear to me. Over the time of my research, this group transitioned from being predominantly comprised of food justice advocacy professionals to being more grassroots and directed by the Birchwood neighborhood. The focus became consensus and trust building within the neighborhood members. I made several out-of-state trips which curtailed my ability to be physically present at the end of my research. This served as a natural closure. However, I maintained e-mail communication with one of the group leaders and made it clear that I was willing to help if/when there were clear ways for me to do so.

Chapter 3: Research Partners

Though there are several organizations and groups working to address food security and sovereignty in the Bellingham area, this research focuses on three organizations: the Whatcom Food Network (WFN), the Birchwood Food Security Solutions Working Group, later known as the Birchwood Food Desert Fighters (hereafter referred to as the Birchwood Food Group), and Western Washington University's Food Systems Working Group (FSWG.) I chose my research partners because they were active at the time of my research and they represent distinctly different approaches to local food security and food sovereignty work. Given current community efforts and the region's agricultural potential, increasing local food production and making that food available to food insecure populations are attainable goals. I chose my research partners with the hope that my work would help them attain these goals.

Group 1: Whatcom Food Network's Community Food Assessment Group (WFN)

The first group, Whatcom Food Network (WFN), is a collaboration of multiple member organizations working to strengthen Whatcom County's local food system (see Table 1). These organizations and agencies represent all sectors of our local food system. Their mission statement explains that they are "working to build common understanding and to facilitate collaborative efforts toward an equitable, sustainable, and healthy food system for all" ("Whatcom Food Network" n.d.). Their focus was on the entire food system in Whatcom county, including production, processing, distribution, consumption, and food waste management.

Table 1: Whatcom Food Network Member Organizations

Organization Name
Bellingham Community Food Co-op
Cloud Mountain Farm Center
Community to Community Development
Opportunity Council
Re-Sources For Sustainable Communities
Sustainable Connections
Washington Sea Grant
Washington State University Whatcom County Extension
Whatcom County Health Department
Whatcom County Planning & Development Department
Whatcom Farm-to-School Support Team

The WFN identified two general needs or points of engagement during the time of this research: engagement with public policy and creating an up-dated Community Food Assessment. Public policy change, and specifically local food policy council formation, began as my primary foci. During the summer of 2016, the Whatcom County Council considered and then adopted some of WFN's amendments to the 2017 Comprehensive Plan ("Comprehensive Plan | Whatcom County, WA - Official Website" n.d.). During my research, there was also momentum to create a local food policy council or a county-wide food policy plan. However, due to the WFN's limited staff hours and financial resources, movement forward on the policy front was not well paced for the needs of my thesis. Consequently, I shifted my focus to preparatory activities that would help move Whatcom County closer to forming a food policy council or a county-wide food policy plan that would increase food security and food sovereignty.

One such preparation was the Community Food Assessment. The WFN had an Action and Dialogue Subcommittee that was tasked with collecting data for a current Community Food Assessment (CFA). Such assessments are used to determine the direction and goals of local food

policy councils as well as other food system strengthening efforts. Within the WFN, this was the group that I spent most of my time meeting with and assisting with shared research goals.

The goal of this CFA Subcommittee was to up-date the existing CFA document that WSU first published in 2011. It was updated in 2013 and was due for another one. This document captures quantitative data from many food system indicators as well as qualitative data from stakeholder interviews. A current understanding of Whatcom County's food system was seen by the WFN as a necessary step to forming a local food policy council or food system plan. The gaps, challenges, assets, and emerging issues in the food system drive the formation as well as the focus of local food policy councils and plans. My hope was that my research assistance would hasten the formation of a local food policy council or plan in this county.

Group 2: Birchwood Food Security Solutions Working Group/Birchwood Food Desert Fighters (BFSWG/BFDFG)

The second research partner I worked with was the Birchwood Food Security Solutions Working Group, which later changed their name to the Birchwood Food Desert Fighters. The Birchwood Food Security Solutions Working Group formed in the Fall of 2016 as a response to that year's emergence of a food desert in this traditionally under-privileged part of Bellingham. The group was primarily focused on increasing food security and sovereignty in the Birchwood neighborhood. The group consists of a loose affiliation of stakeholders from a number of organizations (see Table 2). The participants of this group were fluid as it had just emerged in the fall of 2016. I participated as a support person, witness, and volunteer to this burgeoning effort.

Table 2: Birchwood Food Group

Organizations in the Birchwood Food Security Solutions Working Group
City Council
Bellingham Technical College Foundation
Bellingham Food Bank
Bellingham Racial Justice Coalition
Birchwood Community Members
Whatcom Community Foundation
Whatcom County Health Department

Group 3: Western Washington University Food Security Working Group (FSWG)

The third research partner is Western Washington University's Food Security Working Group or FSWG. This group formed in the fall of 2106 in response to WWU becoming a signatory to the Real Food Challenge. The Real Food Challenge is a national organization that uses a metrics-based approach to shift universities' food purchasing practices toward local, sustainably grown, and ethically produced food products. WWU committed to purchase 25% of its dining hall food in accordance with Real Food parameters by 2020. I worked most closely with and became the chair of the Product Shifting Subcommittee. This FSWG subgroup was tasked with selecting specific food products on WWU's menu to replace and to find viable replacement foods and vendors that satisfied the Real Food metrics.

Chapter 4: Findings

My overarching finding is that all three research partner groups had laudable food system strengthening goals. They all made good faith efforts to create actions and policies that incorporated multiple voices and vantage points and had varying successes in reaching their goals as a result of their composition and goal setting processes. There were notable differences, however, in the ways that each group successfully achieved their goals.

This chapter outlines the themes that emerged from research with the three different research partner groups. This chapter also reinforces the importance of having consistent and adequate staffing for their work. The projects that each group undertook are complex and lengthy, involve many stakeholders, and require bureaucratic fortitude. All three of the groups had challenges sustaining inadequate staff and managing volunteers' time. Despite this, they all made significant progress toward their goals. As I show, however, more progress and more timely action would have been possible had each group been properly staffed. I recommend that counties, neighborhoods, or institutions working to create inclusive food policy work in the future, set aside funding for consistent staff positions.

In this chapter I address how these three organizations address food insecurity and promote food sovereignty in the greater Bellingham area. It is broken into three subsections. The first section examines the strengths and challenges that I observed in the Whatcom Food Network's CFA subcommittee. The second section examines the Birchwood Food Group, and in the third I address the Food Security Working Group. I organized each section into three observed strengths and three observed three challenges. I examine each group's composition and policy engagement, followed by successful implementation.

Observing these three differently sized groups allows me to consider a broad range of food policy work in the metropolitan community. Although each group differs in the scope of work and foci - the WFN working at the county level, the BFDF at a neighborhood level, and the FSWG at an institutional level- they all share some commonalities. Each group is a composite of multiple stakeholders who are attempting to create cohesive policies that effectively crosslink multiple sectors of the food system. All of the groups make efforts to bring in multiple viewpoints and voices into the policy making process. Because the three research partner groups differ so much in their scale of focus, composition, policy goals, and activities, I found it particularly interesting that they shared the same basic need of consistent staffing. This indicates that staff funding ought to be strongly considered for groups working to enact any scale of food policy work going forward.

Finally, I conclude the chapter by arguing that despite the successes and challenges each group encounters, and that there may be some overlap between the populations involved, each group addresses food insecurity at a different scale, and as such, all are needed to address food insecurity in Whatcom County.

Group 1: Whatcom Food Network's Community Food Assessment Group (WFN)

This group was a consortium of professionals working within the umbrella of the Whatcom Food Network. It was established in 2008 with an anti-hunger focus, but since then has expanded and strengthened to include the transportation, labor, and waste sectors (D.S., interview, June 22, 2017). This group had been working within Whatcom County's food access sector for years. In addition to myself, the members included staff from the Whatcom Health Department, Skagit's Washing State University Extension Agency, Sustainable Connections and

Whatcom Farm to School Program. We were all relatively familiar with the various stakeholders whom we were interviewing and engaging for our research. Although there were specific policy goals set for the Whatcom Food Network, such as influencing the Whatcom County Comprehensive Plan and setting the groundwork for a local Food Policy Council, the CFA subcommittee did not have direct policy engagement goals at the time of this research. Rather, the CFA itself would serve as an informing document to subsequent policies. The main output goal of this group was to conduct qualitative and quantitative research with which to update the existing Community Food Assessment for 2017.

WFN Strengths

Overall, the Whatcom Food Network's CFA subcommittee was well-positioned to succeed; their composition was cohesive, and their output goals were clearly defined. The group had worked together in the past to achieve very similar goals. Additionally, their group culture was collaborative and amicable. This dynamic helped make incremental goal setting, labor distribution, and task completion clear and efficient. The output was clear, discrete, and contained within a set timeline. This helped keep the group on track. Cooperative group dynamics within the CFA team and unified goals within the group facilitated smooth and efficient progress. The umbrella WFN group was well-connected within the community and also had a relatively cohesive make-up. It had longer-term food system engagements which I was not able to follow as closely due to their timelines, but from my observations, they also had some significant successes.

Strength 1: Composition: Cohesive Group Composition and Paid Coordinator

The main strengths of the group composition were a cohesive culture with relatively consistent membership and established and amicable working relationships. The members of the CFA team were all female, college educated professionals, and passionate about improving food access as well as strengthening the local food shed. There was one 1/4 paid staff position through Sustainable Connections, who organized the CFA activities and was the 'backbone' of the group (S.S. interview, June 12, 2017), one subcontracted researcher, one graduate student (myself), and several other professionals who had a portion of WFN and CFA work written into their job descriptions. The demographic and mission cohesion created a culture where the entire group was aligned in their stated goals and there was no dissension. There was little time or energy spent on the group process, which allowed for the vast majority to be spent on completing discrete tasks for the final product goal.

Furthermore, most of the members of this group had been working together for multiple years prior to the most recent CFA update. The WFN has focused on anti-hunger work since receiving its initial grant in 2008. Many of the WFN and CFA team members have been engaging in Whatcom Food Network activities together for that entire time. This working history allowed the group as a whole to skip over the initial phase of getting acquainted with one another, establishing hierarchies, and developing working rapport. Instead, the members entered into their project with well-established mutual respect for one another and were able to communicate clearly and efficiently. There was no hierarchy that I observed, rather circular leadership, consensus, and collaboration were used to make decisions.

In addition to the group composition facilitating internal group harmony, it also played a positive role in the way in which our research collaborators engaged with us. The Whatcom Food

Network is well connected and established within the county which gave the CFA project credibility. Many of the WFN and CFA members hold dual positions with other respected and legitimized institutions such as Washing State University, The Community Food Co-op, and the Whatcom Health Department. “Without institutional support, there is no motivation for people to come to the table. Having a foundational organization gives [the WFN] legitimacy- pulls in other groups. It is worth volunteers’ time to participate” (D.S., interview, June 22, 2017). This facilitated community outreach and networking. Every interviewee who we petitioned agreed to participate and was glad to have the chance to add their voice to what they deemed to be a useful endeavor.

Strength 2: Collaborative Approach to Policy Development

The CFA team and document did not directly enact policy, however, its umbrella organization, the WFN, did engage on several policy projects during my research. The WFN successfully inserted language into the Whatcom County Comprehensive Plan regarding future land use pertinent to food production as well financial incentives related to food distribution. Dana Small (2017) also stated that it informed a substantial amount of language in the Washington State Food System Roundtable regarding the importance of fair agricultural labor practices and sustainability across the food system. Both of these activities were in part informed by prior Community Food Assessments. The most recent CFA will be used to inform future such endeavors.

One factor that made the WFN successful in these policy engagements was its collaborative approach to engaging the community and intentional inclusion of every sector of the food system. They gathered input from a wide range of producers, processors, labor, distributors, transportation, public health advocates, educators, and people in waste management

to inform their work. The CFA also did this. The WFN and the CFA subcommittee hosted quarterly Community Forums that were open to anybody in the food system as well as the general public. These Forums were well attended and dealt with food system issues that were pertinent to current concerns within the food system community. These were both educational presentations as well as interactive listening sessions, break-out groups, and Q&As. Dana Small reflected that the WFN is at the forefront of this work and that other counties in the region hope to emulate their model.

Strength 3: Outputs: Clearly Stated & Accomplished Goals and Objectives

The CFA group was formed for the specific purpose of updating the existing Community Food Assessment. Having a clearly stated goal at the outset, translated into spending no time or energy perseverating or debating about what outputs, actions or deliverables the group would focus on. Instead, we launched directly into dividing up and completing the tasks. These clearly defined goals provided a strong framework and allowed us to stay on track. We succeeded in co-authoring an updated Community Food Assessment within the set timeline. Upon completion, we also presented our findings at a Community Forum where it was well received.

The WFN had longer-range output goals which I started tracking and engaging with at the beginning of my research, however the timelines on these goals were not compatible with my research timelines. The most pertinent one was the potential to enact a Local Food System Plan. At the time I was completing my research with the CFA, the WFN was examining other communities' food system plans and checking with key stakeholders about next steps in moving forward. They had plans to draft a proposal for the County Council and were working on getting a website up. They were also working in tandem with burgeoning shifts in the Whatcom Health Department approach to improving community nutrition. In an effort to address structural

barriers to adequate nutrition, some community health departments, such as Whatcom County's, are shifting away from a focus on educating individuals about their personal food choices to attending to a community's food environment (A.N., interview, September 12, 2017). This addresses the availability and affordability of healthful foods such as fresh produce, whole grains, lean meats, and low-fat dairy. However, progress was slow on all of these fronts due to staffing shortages. Consequently, I had to shift focus to something that would come to fruition within my research timeframe.

WFN Challenges

The primary challenge within the WFN and CFA related to limited staffing and funding. The entire WFN, including the CFA subcommittee, was made up of committed individuals who had full-time jobs outside of the WFN. They dedicated substantial time and energy to WFN projects, some of which was paid for by their employers. However, the workload required most of the members to regularly volunteer additional hours. This, in conjunction with staff and volunteer turn-over, affected the efficiency of the group as a whole, in addition to staff and volunteer burn-out. These things made it difficult to move policy work forward in a timely manner. They also created challenges maintaining continuity with projects as well as connection with community stakeholders. These things ultimately had adverse effects on the final WFN outputs.

Challenge 1: Composition: Membership Turnover

Staff and volunteer turn-over was a continual concern for the group. I observed and my respondents spoke to the challenges of the WFN and CFA subcommittee fluctuating over time.

During my involvement, there were staff shifts within the Washington State University and Whatcom Health Department that took staffing hours or entire positions away from the CFA team. One team member got promoted out of her position at the Health Department and her new position demanded too much of her time to accommodate her previous CFA work. This required her to hand off her portion of the CFA research and community engagement to others on the team. This type of staff shifting, and project transfers happened somewhat regularly. Team members would begin projects and then have to hand them off to new-comers or ask existing members to take pieces of their project. The result was some difficulty maintaining momentum and cultural knowledge pertinent to specific projects. It also interrupted connection with community participants. This turn-over and interruption in continuity was a substantial challenge for the group (S.S., interview, June 12, 2017).

Staff and volunteer burn-out was a related challenge. I witnessed this during my involvement with the group and some of my respondents reported that it was a long-standing issue. Some of the members' job descriptions, within other organizations, included their CFA and WFN work. However, those allotted paid hours only covered a small portion of their CFA and WFN time. This required them to consistently volunteer substantial amounts of their personal time which contributed to staff and volunteer overwork and burn-out. Several respondents reflected that near WFN's conception there was substantial attrition, even of the leadership team. They attributed this to a lack of central and consistent leadership and organization, scheduling challenges, staff shortages and a lack of actionable items on which the group could focus its efforts (L.R., interview, February 17, 2017). The time commitment was overwhelming, and they wanted more value for their time spent in meetings "a better return on their investments" (L.R., February 17, 2017). Several respondents voiced their desire for more

organizational support in the form of more paid staffing hours or positions (S.S., interview, June 12, 2017; D.S., interview, June 22, 2017; M.S., interview June 19, 2017).

Another concern regarding group composition was homogeneity of both the WFN as a whole and the CFA subcommittee. All of the members I met passed as white, were well educated, and were working aged professionals. One respondent, who had been a part of the WFN in the past, reported that class and racial privilege inhibited some of the WFN's early food justice efforts due to challenges connecting with the underserved populations they were trying to assist. During my research, I observed one instance where a labor representative became frustrated with the way in which her interview response was incorporated into the final CFA document. She did not feel that her input was adequately represented or that migrant labor concerns were strongly enough advocated (K.B., interview, February 7, 2017). This may have been partly a result of class and racial privilege of the WFN and CFA team members. It was also due to the WFN and CFA team's effort to maintain a neutral and non-political stance in the greater Whatcom County community. This was during a time of strong tensions around fair labor practices and the historic unionizing of migrant agricultural workers in the region. The WFN members were aware of class and racial privilege and were openly discussing how to address their ill effects within the group.

Challenge 2: Policy Engagement & Overburdened Staff

The challenges pertaining to group composition directly contributed to the challenges regarding policy engagement. Because of staff shortages, the WFN did not have the resources within acting committees to do much work on policy. When I began my research with this group, there was momentum to put together a Local Food Policy Council. However, lack of staff and volunteer time as well as policy engaging expertise shifted the focus to a Food Policy Plan. Even

with this pared down goal, the group had challenges moving it forward. At the time I exited my research partnership with the WFN, all of the group members had full time jobs and not enough time to devote to the Food Policy Plan. The project only had one designated quarter-time staff position. The group was slowly endeavoring to get buy-in and trust from community stakeholders, however the outline for the Food System Plan was on hold by the time I concluded my research.

These limited personnel hours also created challenges when the WFN engaged with outside bureaucracies. Tight deadlines for proposal submissions as well as time-consuming bureaucratic delays, as were experienced while contributing to the Whatcom County Comprehensive Plan, taxed already overburdened staff. The time expenses associated with bureaucracy was a significant deterrent to policy engagement.

Challenge 3: Limited Resources and Lack of Unified Approach

While the CFA team successfully completed their output, the up-dated Community Food Assessment, it required large amounts of unpaid work from its members to do so on time. Adequate staffing will be key in maintaining the longevity of the Community Food Assessment project going forward. The CFA is useful in large part because it is a series of food system snapshots over time. At the end of my research multiple CFA team members were transitioning into new positions, some of which did not allocate time for their future work with the WFN. There was concern amongst the members about who would continue the research going forward.

The larger WFN group completed one major output and was working on a second, during my research. The group completed, submitted, and had their Whatcom County Comprehensive Plan amendments adopted by the County Council. This was a significant undertaking and success. The staff challenges regarding this process were addressed in the

previous section. The second output was the burgeoning Food Policy Plan. Again, the primary challenge was chronic staffing shortage. Another related challenge that several interviewees spoke to regarding WFN output challenges, was a lack of a unified approach for the group. All parties involved were passionate about strengthening the local food system, but the specific sectors and projects to focus on are myriad. Given that funding and staff time were quite limited, the group needed to agree upon and focus on limited outputs. It appeared that finding consensus on a unified approach was an on-going concern.

WFN Summary

Overall, I witnessed the WFN and the CFA subcommittee working diligently to achieve their goals. They successfully engaged numerous stakeholders in complex food system conversations and completed labor intensive outputs despite chronic labor shortages. When I was exiting my research relationship, both the Whatcom Food Network and Health Department were looking to hire new positions that would help remedy their chronic staffing and labor shortages. Both organizations were hoping for more personnel funding so they could build stronger relationships with community stakeholders and carry out their projects with more efficacy. Maintaining a unified approach and achievable goals will serve the WFN well especially if they continue to work with very limited resources.

Group 2: Birchwood Food Security Solutions Working Group (BFDFG)

The Birchwood Food Group had just formed when I joined and was going through substantial transformation during my research. It began as the Birchwood Food Security Working Group (BFSWG) which consisted of professionals from a variety of local non-profit and public agencies. Then the group transitioned to the Birchwood Food Desert Fighters Group

(BFDFG) which was primarily made up of Birchwood residents and local grassroots organizations. Both iterations' primary focus was to address the newly created food desert in the Birchwood neighborhood.

The BFSWG solely focused on improving food access and food security whereas the BFDFG additionally sought to address structural change that would support long-term food sovereignty and self-determinism for the residents (E.F., interview, April 29, 2017; K.B., interview, February 7, 2017). Both iterations of the Birchwood Food Group worked to improve affordable food purchasing options for neighborhood residents. In addition to these efforts, the BFDF members were also discussing neighborhood capacity building that would lead to an equitable and sustainable food system. The BFDF wanted to end corporate grocery market chains' control of food systems and eventually become a food sovereign community.

The Birchwood Food Security Solutions Working Group, as a whole, was too new at the time of my engagement to have undertaken concrete policy engagement. Their burgeoning policy goals included changing WTA ridership rules and routes, changing municipal tax incentives and future leasing agreements with corporate entities operating within city limits, and finding a way to overturn the non-compete clause that was creating the neighborhood's food desert. The BFDF group viewed the creation of their neighborhood's food desert as part of a deliberate corporate practice that plagued numerous low-income, racially diverse, and marginalized neighborhoods across the country. They hoped to be able to help their own neighborhood overcome this challenge as well as create precedence for pushing back against systematic food desert creation.

BFDFG Strengths

The Birchwood Food Security Solutions Working Group, in both iterations, had several strengths. There was a strong potential for improving the neighborhood's food security. Nested within this opportunity was also community capacity building, community organizing, and participatory democracy. The BFDF group was particularly dedicated to making the problem-solving process an opportunity for community empowerment and increasing long term food sovereignty for the neighborhood. Both the BFSWG and BFDF had strengths in their composition, policy engaging goals and approaches, as well as outputs. However, these strengths tended to be considerably different for the two iterations of the group. The BFSWG was composed of well networked professionals who had experience working within governmental structures and securing funds for sizable anti-hunger projects. They were poised to undertake discrete projects that would address immediate food security issues. In contrast the BFDF was composed of neighborhood residents and was an entirely grassroots endeavor. They were more focused on inclusive decision making, community organizing, and visions for long-term food sovereignty solutions.

Strength1: Professional Leadership and Community Stakeholders

The Birchwood Food Group as a whole had multiple strengths in regard to its composition. The BFSWG began as a consortium of professionals from a number of community organizations including the Whatcom Health Department, the Whatcom Community Foundation, the Racial Justice Coalition, Bellingham Food Bank, and a City Council member. This group formed in response to the immediate food insecurity problems arising from the Birchwood food desert. The members had many years of experience overseeing non-profit organizations, writing grants, community organizing, and overseeing anti-hunger projects. Many of them had worked with each other in the past, were well networked within the local community and political

bodies, had experience navigating bureaucracies, and generally had the resources and experience necessary to succeed in reaching their goals.

The BFDF group rose out of the BFSWG as that original group wanted more input from the people directly affected by the food desert. The BFDF had an organic membership and a non-centralized leadership format. This gave the group flexibility as it came up with action items. "Solutions coming from people living in the affected areas have the longest staying power; the people who are directly affected have more investment" (E.F., interview, April 29, 2017). Birchwood is the most ethnically diverse community in Bellingham and has historically been so. Because of this, the Racial Justice Coalition initiated the Food Desert Fighters group. The BFDF's membership is composed of and led by Birchwood residents, many of whom are from traditionally marginalized populations who are not often included in the political process. Although the food desert was the central focus of the group, the food desert itself was viewed as a symptom of a larger underlying social and economic ailment. Simply mitigating the symptom was not a sufficient goal for the BFDF. This passion and vision for greater social and economic justice inspired the BFDF to address larger structural inequalities and injustices that affect their neighborhood. One respondent succinctly stated that "Food is a basic right. It should not be controlled by the market" (T.M. interview June 23, 2017). The entire process provided the neighborhood an opportunity to network, practice participatory democracy, and build their community organizing capacity to address present and future needs.

Strength 2: Passionately Backed Attainable Goals

During my research, the Birchwood Food Group was at the very beginning stages of identifying what municipal or institutional policies to work on. The BFSWG sought immediate

solutions to food insecurity through supporting a small neighborhood grocery store expansion, pop-up food banks, and/or changing WTA bus routes and policies to better facilitate grocery store or food bank access. All of these efforts would work around rather than seek to change the 65 year non-compete clause that Albertson's had secured with the city. This clause prevented another grocery store from leasing that site until 2047. There was discussion about challenging this non-compete clause or addressing the city's policies around granting such generous leases to corporate entities in the future. "The city needs to have a way to weigh costs and benefits of accommodating these corporate entities…Tax breaks and infrastructure investments need to make sense to the community" (B.P. interview, April 29, 2017). However, these projects did not seem feasible as short-term goals for the group. Instead, they opted to focus on more discrete and quickly attainable food security goals. For the small neighborhood grocery store expansion, they were looking for ways to do this without interfering with the specifics of the non-compete clause. The pop-up or mobile food bank would also honor the non-compete clause. The Whatcom Transit Authority (WTA) had built major bus stops (with public funds) and formatted their routes around the Albertson' store. After its closure, those bus routes no longer served the function of connecting Birchwood neighborhood or Lummi Reservation residents with a grocery store. So, there was talk of petitioning the WTA to restructure their routes so their ridership could have more direct access to other grocery stores or the food bank. In addition to route modifications, there was also discussion about addressing internal WTA policies. Residents were reporting that some bus drivers were not allowing them to bring more than two grocery bags onto the bus per ride. This forced riders to make a multi-hour, multi-stop bus trip to a grocery store several times, for what would normally be a single grocery shopping trip. This latter issue seemed to be

resolved after contacting a WTA administrator. The other projects were still in their beginning phases during my time of involvement.

The BFDF were also engaged in the aforementioned short term food security projects, however their main focus was on larger structural changes that would lead to food sovereignty and community empowerment. They wanted to curb what they identified as a trend toward strictly profit-driven corporate control of food supplies (T.M., interview June 23, 2017; E.F., April 29, 2017; B.P., interview, June 2, 2017). During my research time, they were discussing ways to prevent the creation of food deserts by getting the city to stop granting leases that would inhibit other grocery stores from moving in after a corporation pulled out (B.P., interview, April 29, 2017). Since that time, the BFDF has been successful in getting the City of Bellingham to ban future non-compete clauses for grocery stores. In addition to that, they are currently working to enact a state-wide ban on such non-compete clauses. The group was also interested in civil action to change Albertson's lease agreement and have collected nearly 6,000 signatures petitioning the corporation to drop the non-compete clause. These last two policy endeavors are still underway. If they are successful, it would set powerful precedent for other communities and states working to end food desertification. Additionally, there was some discussion about addressing city zoning rules in the Birchwood neighborhood that would increase food sovereignty opportunities. The BFDF were interested in promoting more urban agriculture in the neighborhood, however they had identified some zoning rules that made this challenging. Many of these discussions were at the very beginning stages during my involvement.

Strength 3: Effective Community Outreach

The BFSWG completed a community research survey project and the BFDF focused on grassroots organizing and capacity building. The BFDF organizing resulted in constructing and maintaining 5 food sharing kiosks and a food 'share spot,' constructing 7 community vegetable gardens, and successfully petitioning the City of Bellingham to ban grocery stores' non-compete clauses in the future. The Birchwood Food Group's work increased the local community's awareness about food deserts and provided some relief for the current food insecurity issues in the neighborhood. It also laid some groundwork for preventing future food deserts.

Community research was a strong component of the Birchwood Food Group's endeavors. Jobs With Justice conducted a survey of 300 Birchwood houses, going door-to-door, and gathered 100 interviews. Jobs With Justice got residents' perspectives on the food desert, which they identified as the first step to solve the challenge. When asked about their grocery shopping routines and needs, the residents reported that the Albertson's closure impacted their food access in a number of ways (E.F., interview, April 29, 2017). Many residents reported that they wanted a grocery store back in the same location and were surprised and outraged to learn about the non-compete clause that prevented that from happening. Nursing home residents had accessed the store in motorized wheelchairs and carts. Other near-by residents had been able to walk there from their homes. The WTA #50 bus route used to stop at the grocery store, connecting Lummi reservation residents to a reliable food source. Residents also reported that after the Albertson's closure, Haggen increased their prices (B.P., interview, April 29, 2017). Albertson's had recently purchased Haggen. The combination of the Albertson's closing, inadequate public transit to other grocery stores, and the nearest Haggen raising their prices, decreased the neighborhood's overall food security and food accessibility.

Once the neighborhood's needs were clearly identified, the BFDF group undertook several grassroots food security projects. Birchwood residents built and continue to maintain 5 food sharing kiosks throughout the neighborhood. These boxes provide canned goods and fresh produce for residents in need. They are filled in an organic manner by anyone who has surplus coming out of their garden or is feeling generous with their groceries. Three years since their inception, they are still in use and are being filled and emptied multiple times a day. A pop-up 'Share Spot' serves a similar function but is an event where neighbors can meet each other and interact. A Facebook page provides status updates for both the kiosks and Share Spot. Seven community gardens were also constructed to help increase access to fresh produce.

In addition to the immediate food security projects, the BFDF also paid particular attention to community capacity building and increasing participatory democracy. The shared hardship helped to focus the community on a shared goal. One woman who responded to the Jobs with Justice survey reported giving rides to 7 families to help them make grocery shopping trips to otherwise difficult-to-access grocery stores. Within the Birchwood neighborhood, disparate ethnic, socioeconomic, and age demographics began to problem solve together (B.P. interview, April 29, 2017). One organizer stated that food sovereignty must include community solutions to community problems and that people have to demonstrate that they can come up with their own solutions and carry them through (E.F., interview, April 29, 2017 2017). "[Birchwood Food Desert Fighters] provides a very good opportunity to introduce principles of food sovereignty into the community…" (E.F., interview, April 29, 2017). The group maintained a focus on systemic and political problem solving while simultaneously addressing the neighborhood's short-term food security needs.

BFDFG Challenges

As with the WFN, the Birchwood Food Group also struggled with staff and volunteer shortages and turn-over. Their projects required substantial long-term commitment and follow through, which necessitated large amounts of sustained volunteer labor. However, unlike the WFN, there was not a core group of paid professionals with a discrete and well-defined goal. At its inception, the initial BFSWG did consist of paid professionals, however this group took the backstage as the BFDF stepped in. The BFDF was entirely volunteer run and community directed. They were trying to create an inclusive group process with a highly diverse membership that was not accustomed to this type of work. In addition to volunteer burnout, the Birchwood Food Group also had some challenges keeping volunteers engaged due to the initially slow and unfocused grassroots organizing process as well as community segregation issues. In the beginning, they did not have consistent group membership, leadership, nor a well-defined set of goals. These factors deterred some people from continuing with the group and at times slowed down the process and outputs (M.C., interview, May 1, 2017; S.S., interview, June 12, 2017; B.P., interview, June 2, 2017; interview, April 29, 2017).

Challenge 1: Members Lacked Capacity and Training

Maintaining consistent membership was the Birchwood Food Group's primary compositional hurdle. Having diverse and historically marginalized voices direct the group's grass roots efforts was an important empowering practice, however it also came with some challenges. After the BFSWG made way for the BFDF, the composition as well as process changed radically. Rather than having a group of well-connected seasoned professionals steering the process, an organically organized group of mostly inexperienced community members took the helm. There were some challenges with communication and meeting structure. One of the

core BFDF members reported that many of the people who are involved have a lot going; kids, jobs, etc. and this made it hard to gather everyone together for meetings. Additionally, some Birchwood community members don't have computer access and/or don't follow e-mail threads (T.M. interview June 23, 2017). The result was that three members ended up doing the vast majority of the work. At the first BFDF meeting, the Birchwood community members were asked to sit together, while outsiders were asked to sit at a separate table. This did not feel inviting to some people who had more political and community organizing experience and wanted to be helpful (B.P. interview, April 29, 2017). The slow nature of the grassroots process was discouraging to some people and caused them to drop out of the efforts (E.F., interview, April 29, 2017). Several interviewees cited inefficiency as the reason they stepped out. The lack of centralized leadership, organization, clear trackable action items, and the slow pace were not compatible with multiple professionals who were working within non-profit and community organizations (M.C. interview, May 1, 2017; S.S. interview, June 12, 2017). There was substantial attrition in the beginning.

Community segregation was another compositional challenge. One of the potential strengths of the Birchwood Food Group, the diversity of the community, also brought challenges to organizing. At the time of my research, low-income white people were well represented in the BFDF process, but other communities were not as present. The group was aware that including all the communities' voices was key to the success of their work. One organizer stated that the solutions need to provide for the whole community with culturally appropriate solutions. They also pointed out that… "people don't want to be tokenized, talked down to, not allowed input, and don't want to be appropriated etcetera" (T.M. interview June 23, 2017). Spanish, Punjabi, and Vietnamese are the three most commonly spoken languages in the Birchwood neighborhood,

apart from English. The group Community to Community had reached out to the Latinx community and connected with some key players. However, other non-white or non-Hispanic communities had not yet become part of the process. In addition to a wide range of cultural groups, there was also a wide range of people from political and economic positions. One respondent stated, "There are white supremacists here, and there are white liberals who are unconscious of biases" (B.P. interview, April 29, 2017). The neighborhood has been undergoing gentrification and the economic divide has become evident. "There is a real divide in Birchwood neighborhood; lots of homeowners along streets- mostly single family and then there are a lot of apartments…these groups do not tend to mix much" (B.P. interview, April 29, 2017). The BFDF had been reaching out to different cultural organizations and a variety of groups in hopes of gaining trust and connection across the diverse demographics of the neighborhood.

Challenge 2: Little Experience Developing Policy

During my research, I observed three main challenges for the Birchwood Food Group's burgeoning policy efforts. First, inconsistent group membership stalled progress as it tried to agree upon and then operationalize policy work. Secondly, the slow nature of inclusive grassroots organizing made the process of coming up with a unified set of policy goals quite lengthy. Lastly, the inexperience of the BFDF group members posed challenges to the group's initial efficacy. Membership turnover kept the group from launching into policy work early on, as organizing the group took considerable effort. The integration process of the first and second iterations of the group, as well as the inclusion of disparate cultural, economic, and political stakeholders slowed initial policy engagement as members worked to agree upon specific goals. Once goals were set, there was the additional challenge of the BFDF being composed of people with little political experience or the privilege to be able to fully engage in local political

processes. Substantial political savvy and time commitments were required for members to attend and influence City and County Council meetings, petition local government agencies, or interface with lengthy bureaucratic processes. For example, council meetings were held during business hours when many Birchwood residents were at work making it nearly impossible for them to attend. Many of the Birchwood volunteers worked, had families, had transportation challenges, and/or were not fluent English speakers. "Working within bureaucracy is confusing, time-consuming, disconnecting, boring, and technical. This excludes working people with limited time, poor people with limited education or English proficiency, or ordinary citizens who are not well-connected to business owners or government officials. Council meetings do not encourage citizen engagement." (E.F., interview, April 29, 2017) However, despite all of these sizable challenges, the group persisted long after my research and was able to make substantial progress on multiple policy endeavors, some of which may have far-reaching impacts on Whatcom County as well as Washington State.

Challenge 3: Few Community Relationships and Trust

The challenges discussed in the previous section regarding policy engagements also held true for other outputs. The primary challenge that respondents spoke to regarding outputs was the slow nature of the grassroots process. Because building relationships and trust between previously disparate populations takes time, identifying and then moving forward on action items was slow. One respondent said that the community needed time to buy into the process and that grassroots organizing is slower than getting a single issue on a ballot. He stated that "…[P]eople have been screwed over so many times, or they are exhausted by being told what to do… [and some of these] people are not used to participating in decisions about their lives" (E.F., interview, April 29, 2017). Although not having clear and discrete output goals early on in the

process was demoralizing to some, the process of inclusive decision making was in itself a major output. Eventually this initial investment in the group process paid off and the group successfully completed a number of projects.

BFDFG Summary

The Birchwood Food Security Solutions Working Group undertook a wide range of interlacing social and food justice issues. Although, in the beginning, the group struggled with membership turnover, was not highly organized, nor did it have a clear agenda, the perseverance and passion of the volunteers resulted in multiple successes. The group was able to push through the initial challenges of not having a centralized or paid staff base and being comprised of a highly diverse and generally unseasoned membership. They were able to organize and agree upon a number of projects. In addition to community capacity building, they also completed a large community survey, built and maintained 5 food sharing kiosks, constructed 7 community gardens, successfully petitioned the WTA to change their grocery bag limit for their ridership, and successfully petitioned the city to stop granting non-compete clauses for grocery stores in the future. Additionally, they laid the groundwork for potential state level policy changes that would prevent future food desert-causing non-compete clauses to be granted to grocery stores. While undertaking all of these projects the BFDF recognized that by working in a community of people who have historically been excluded from political processes, it was deeply important to be inclusive and create room for a wide range of skills and abilities. Ultimately it took the group longer to achieve policy goals or measurable outputs, but the capacity building groundwork paid off and the neighborhood is now better positioned for future problem solving.

Group 3: Western Washington University Food Security Working Group (FSWG)

The Food Security Working Group (FSWG) was a collaboration of Western Washington University faculty, staff, students, and dining service representatives. The singular goal of FSWG was to uphold Western's commitment to fulfill the Real Food Challenge, which Western was a signatory. The Real Food Challenge is a metrics-based approach to help US universities shift their food sourcing practices in ways that increase local, organic, fair trade, and humanely sourced food products served in their dining halls. The policy goals of FSWG were clearly defined and discrete. The committee aimed to shift 25% of the food purchased for the dining service to meet the Real Food Challenge parameters by 2020. In doing so, the group also wanted to set up purchasing policy guidelines for WWU going forward so that it could adapt to changing circumstances while still maintaining this Real Food metric into the future.

FSWG Strengths

FSWG had a number of assets. Its diverse make-up brought a wide variety of voices and skills to the table. Even with this wide range of stakeholders, there was some cohesion provided by being held within the framework of the Real Food Challenge. The group was also legitimized by WWU's president signing onto the Real Food Challenge and creating the space for it to operate within the University. This made it possible for their decisions to be heeded by the school and the dining services. Support from a large well-defined movement gave FSWG a strong container in which to work and succeed. Their policy endeavors and outputs had well-defined scopes and were discrete. My engagement with the group ended before many of them came to fruition, but the group was on track to succeed.

Strength1: Trained Faculty and Institutional Support

This group was made up of several University faculty and about a dozen students. It included stakeholders from across the campus, which provided the group with a wide range of perspectives. The majority of the students were from the Students For Sustainable Food group, which had pushed for the school to sign onto the Real Food Challenge. Although this group had historically been adversarial to the Dining Services and their supplier Aramark, FSWG was a place where all parties were committed to achieving the Real Food Challenge goals together. Aramark was on board with the Real Food Challenge goals as they had experience working with other schools who also signed onto RFC. WWU staff were also cooperative. Being part of a larger nation-wide movement allowed connection to other people who were working on similar issues. One respondent reported that this was good for morale as well as networking potentials and allowed the group to leverage resources across the country without having to reinvent the wheel (K.D., interview, May 3, 2017).

Strength 2: Institutional and Corporate Support for Policy Development

FSWG sought to influence institutional and corporate food policy. Within the University, its primary goal was to put into place purchasing guidelines so that the school had a template for meeting RFC goals going forward. This RFC policy would be incorporated into WWU's Sustainability Action Plan and Multi-year Action Plan. Some students hoped to critique and nudge the Sustainability Action Plan goals to go further. On a corporate level, there were several ways in which the group aimed to influence policy. Some students believed that Aramark would eventually change their internal corporate guidelines for food purchasing, on a national scale, if enough of their university customers were RFC signatories (R.R-P., interview, May 3, 2017). There was also work being done to influence practices and policies of regional food businesses.

Given the buying power of campus, WWU was able to influence things such inclusions of organic, local, etc. ingredients and had the potential to also influence labor requirements, or exclusions of pesticides (K.D., interview, May 3, 2017). They were exploring how to use their buying power for enduring volume purchases of Real Food. FSWG was also helping some local small producers get into the supply chain and expand their customer base by becoming compliant with some internal corporate policies regarding safety and purchasing guidelines. They assisted Cloud Mountain Farm with their GAP certification. This 3rd party inspection and liability certification will allow Cloud Mountain Farm to sell to WWU and other institutional buyers in future (S.W., interview, May 11, 2017). All of these projects had potential to shift considerable amounts of food procuring funds in ways that would strengthen the local food system.

Strength 3: Stacked Goals

FSWG's singular output goal was to operationalize Western Washington University's commitment to purchase 25% of the Dining Service's food in accordance with the RFC. This goal was tangible, measurable, and very standardized. (R.R.-P., interview, May 3, 2017). The RFC provided a leadership component, a framework, and a calculator. Several respondents lauded this structure and the calculator, noting that these things prevent the university from having to re-invent wheel (K.W., interview, May 11, 2017; K.G., interview May 1, 2017; R.R-P., interview, May 3, 2017; I.H., interview, May 10, 2017). The ambition, history, clear goals, and a clear plan of the national RFC made it easier for students to plug in quickly. The calculator was particularly appreciated by some. "A good calculator is already set-up; national standards are in place- all that work has been done for us. It is a good mold to work within" (K.G., interview May 1, 2017). Within this structure, there was flexibility for prioritizing and adapting food purchasing

decisions to the region, season, and to the specific needs of Western without changing the fundamental values (R.R-P interview, May 3, 2017).

There were a number of small output goals nested within this entire process. WWU's purchasing power was being shifted to help localize the food system, support more social justice for food producers, and increase agricultural sustainability. FSWG was also working to increase student awareness of how they interact within food systems, increase customer satisfaction of Dining Services' offerings (S.W., interview, May 3, 2017), and to establish an enduring process for WWU to continue meeting these goals into the future. FSWG was working to support regional producers and up and coming farmers and bolster the local economy by contracting with them. It was also working to reduce the environmental impacts of their food sources by reducing food transportation miles and increasing the amount of food produced without harmful chemical inputs and environmental impacts. On the consumer side, the group was hoping to change campus consumption patterns through an organized educational campaign that would shift student behaviors and choices to reflect conscious consideration regarding the providence of their food. The group was also looking to address food insecurity of college students. Apart from inflation, the goal was to keep food costs similar to what they are now while also increasing consumer satisfaction as measured by polls. Lastly, as the food system and students will be changing over time, the group aimed to set transparent guidelines and put evaluative tools in place that would ensure the processes will continue into future. By the time I exited my position within the group, subcommittees to address all of these projects were up and running and there were a number of successes. However, the group had several years to go before reaching their final major output.

In addition to the RFC output goals, FSWG also provided opportunities for capacity building within the student body. Students were stepping into leadership roles and the power differentials between faculty and staff were not silencing student voices (K.D., interview, May 3, 2017). Being part of FSWG was educating students about going through bureaucratic channels to make lasting change. This work was increasing student involvement in and knowledge of WWU food system and food systems in general and building infrastructure for students to have more say in their food sources in the future. The campus teach-in allowed WWU students to work with students from other schools and build coalitions (K.G., interview, May 1, 2017).

FSWG Challenges

The Food Security Working Group's challenges included membership turn-over, slow progress and bureaucratic delays, and friction between different interest groups within FSWG. As with the other two groups, FSWG relied heavily on volunteer labor. The time commitment required for full-time students and faculty members was burdensome. This paired with lengthy bureaucratic processes and slow progress on measurable outputs, exacerbated volunteer turn-over. This turn-over further slowed progress. It was a self-perpetuating cycle. Additionally, the slow progress frustrated the Students For Sustainable Food group who became less amenable to working with their former advisory, Aramark. As the bureaucratic process stretched out, student positions within FSWG cycled in and out, and the clock ticked, there was more pressure to withdraw from the contract with Aramark, which undermined the morale of FSWG as a whole.

Challenge 1: Student Turnover

The faculty positions and a couple of the student positions were fixed and had votes, whereas the majority of student positions were strictly advisory and numerous students cycled

through them. This continual turn-over created a number of challenges. Even with considerable time and energy spent on handing off batons from one student to the next, knowledge was lost in the process. The time it took to get new members up to speed, reduced the amount of time and energy for making measurable progress toward the larger FSWG and RFC goals. Also, infrequent meetings contributed to the challenge of keeping momentum going. "Making sure everyone remained committed and available for meetings was a reoccurring challenge" (K.G. interview May 1, 2017). During my period of involvement, I witnessed numerous students come and go and the overarching sense of cooperative problem solving diminish as the group became increasingly frustrated by the slow progress. One respondent bemoaned that "Relationships were collaborative in the past" (S.W., interview, May 3, 2017). The historic adversarial relationship between Students For Sustainable Food and Dining Services/Aramark resurfaced. Some Students for Sustainable Food members started to push the agenda of divesting from Aramark entirely. This was in response to some national concerns about Aramark mistreating inmates and employees. Upon my departure from the group, this topic had become quite heated across campus and was a source of friction within FSWG.

Challenge 2: Changes in Institutional Policy

FSWG faced some challenges while interfacing with both institutional (WWU) and corporate policies. The main institutional challenges were navigating students' desire to end Western's contract with Aramark and finding ways to most effectively use the RFC tools to create meaningful and lasting change to WWU's internal policies. The corporate policy work challenges surrounded supply chain management and food safety regulations.

Briefly, the institutional policy changes are as follows. While still engaging in the FSWG, WWU students were also pushing to end the University's contract with Aramark and transition

to a self-operating system for the Dining Services. These students were concerned about recent national news that Aramark was profiting in unethical ways from the prison industrial complex by serving spoiled food and inadequate portions to prisoners. There was also concern about the corporation exploiting employees. "This development is causing tension among the group members… I'm not sure how/when we will have this open conversation with [the Aramark Rep.] and the rest of Dining but I think that RFC goals can progress in a good direction while folks are advocating for self op" (R.R-P., interview, May 3, 2017). The other major concern with regard to internal WWU policy was that "[the RFC] could become a path of box checking" (K.D., interview, May 3, 2017). Some members were concerned that there was a potential for FSWG's focus to be on the easiest way to meet RFC metrics rather than using it to substantially shift the food system. One contentious example was a debate as to whether or not the RFC could count Edaleen dairy (despite it being a CAFO) so that WWU could gain more Real Food percentage points. This was a complex conversation.

In regard to corporate policy engagement challenges, they pivoted around food safety regulations and food supply scale. Aramark had internal corporate policies regarding safety and purchasing guidelines with 3rd party inspection and liability considerations already in place. These were influenced by state and federal regulations as well as Aramark's internal corporate policies regarding cost and scale of food purchases. The litigious culture surrounding food safety regulation created barriers for both farmers and Aramark, as they were being held to more and more stringent standards. Risk management issues are burdensome, especially for small scale providers. The administrative work required to uphold food safety regulations as well as maintain multiple contracts with small purveyors was prohibitive for both the suppliers as well as Aramark. Students for Sustainable Foods wanted to purchase from smaller local vendors and

reduce reliance on factory farms and CFOs. Aramark and Dining Services representatives wanted the WWU community to better understand the challenges associated with. FSWG was working to influence policy that would help change this by helping smaller farms attain their GAP certification. There was tension between the students' desire to substantially shift WWU's purchasing practices, the state and corporate policy surrounding food safety, and Aramark's willingness to increase the administrative costs of purchasing from more small vendors.

Challenge 3: Membership Turnover and Bureaucratic Delays

Membership turnover and bureaucratic delays slowed FSWG's progress in delivering timely outputs. The challenges caused by continual volunteer turn-over were discussed in previous sections. As for bureaucratic delays, they were centered around WWU's competing internal policy documents on sustainability. WWU had two different Real Food Challenge documents; one that used the 2015 RFC metrics and one that used the current ones. This caused some discord when the group was working to come up with specific procurement changes. For example, the 2015 metrics allowed the local Edaleen Dairy to count in the RFC calculator. In 2017, Edaleen Dairy no longer counted because it qualified as a CAFO (Concentrated Animal Feeding Operation). Some members wanted to keep counting Edaleen while others were opposed. Additionally, Western was also working on finalizing the Sustainability Action Plan at the time of my research. This document used a different metric tool; AASHE (Association for Advancement of Sustainability in Higher Education) standards. Some of my interviewees thought that WWU sustainability efforts were taking place in silos which was duplicating work and causing confusion.

There were also some complaints and concerns about the RFC metrics, which made it challenging for the group to maintain a unified focus. One respondent stated "My frustration is

that we're a little too focused on the RFC piece... We're not giving enough credence to local purchasing opportunities" (S.W., interview, May 3, 2017). Some of Western's efforts did not count on the RFC calculator even though they adhered to its intent in some meaningful ways. Another respondent voiced "One criticism is that WWU did not do a whole lot of vetting of other tools. The focus was 'should we sign on to Real Food or not' rather than shopping around for a variety of tools" (K.W., interview, May 11, 2017). There was also concern about the inherent inflexibility of RFC structure. One respondent stated that the geographic constraints of Bellingham make WWU's task of procuring locally sourced food challenging. Paraphrased; There is an international border to North, mountain range to East, ocean to West which limits food sourcing options. However, WWU is held to the same standards as other schools in more agriculturally rich areas" (S.W., interview, May 3, 2017).

FSWG Summary

Overall, FSWG was still able to move forward with their mission despite their challenges. They successfully organized the working structure of the group, formed subcommittees to address the individual tasks encompassed within the 25% Real Food goal, were able to form partnerships with local farmers, and begin the process of product shifting. The group is still intact and working to achieve their 2020 goals. There has been significant student turnover within that time, but the faculty and staff members that were involved at the beginning are still involved. Although the RFC structure had some challenges, having an established metric and structure to work within made it possible for students to come and go without the entire group having to restructure for each iteration. Being part of a larger movement and having the legitimacy and resources of the University helped to keep the progress moving forward.

Conclusion

This research explores how three different types of organizations, each with a different structure, attempted to impact and address food insecurity in Whatcom County. Each group expressed some strengths while also exhibiting some challenges that were impacting their effectiveness (see Table 3). Each group addresses food insecurity at a different level, and while there is overlap in the populations, all three types of organizations are needed to address food insecurity due to its complex nature.

Table 3: Summary of Strengths and Challenges

Group	Type	Strength 1	Strength 2	Strength 3
WFN	County coalition	Cohesive group composition and paid coordinator	Collaborative approach to policy development	Clearly stated and accomplished goals and objectives
BFSSWG	Neighborhood coalition	Professional leadership and community stakeholders	Passionately backed attainable goals	Effective community outreach
FSWG	Institution	Trained faculty and institutional support	Institutional and corporate support for policy development	Stacked goals
		Challenge 1	**Challenge 2**	**Challenge 3**
WFN	County coalition	Membership turnover	Policy engagement and overburdened staff	Limited resources and lack of unified approach
BFSSWG	Neighborhood coalition	Members lacked capacity and training	Little experience developing policy	Few community relationships and limited trust
FSWG	Institution	Student turnover	Changes in intuitional policy	Membership and bureaucratic delays

In summary, the WFN's effectiveness, or their ability to reach their own defined goals based on their mission, was high. Their group cohesion and centralized paid staff coordinator, in conjunction with their collaborative approach to policy development, worked in their favor. Additionally, having clearly stated and well-defined goals allowed them to successfully execute them within their timelines. The primary challenge the WFN had was staff and volunteer attrition and turnover. This made it difficult to maintain continuity with projects, exacerbated the remaining staff and volunteers' excessive workloads, and slowed the group's ability to take on larger policy engagements. They were able to overcome these challenges, however, and deliver their intended outputs.

The Birchwood Food Group's effectiveness was also high. One of their strengths as well as challenges was their diverse membership. Although it proved to encumber their progress at the beginning, having a mixture of grassroots community members and seasoned organizers and professionals ended up being an asset. The community's passion about increasing food security in the neighborhood carried them through years of work and resulted in multiple projects being successfully completed. Strong community outreach was in large part responsible for these successes. Their challenges, especially at the beginning were: a lack of grassroots community leaders' experience and organizing capacity, little experience developing policy, and a lack of cohesion and trust among the various stakeholders. Despite these early challenges, the group persevered and was able to meaningfully contribute to their food security efforts.

For FSWG, they too made significant progress meeting their stated goals. Working within the structure of a supportive institution with trained faculty members gave the group a solid container. The Real Food Challenge metric was also a helpful institutional and corporate container that provided tools for policy development. The group's goals were multi-functional

and stacked neatly within the Dining Services', University's, and National Real Food Challenge's goals which helped them leverage their efforts more efficiently. The primary challenge the group faced was student turn over. This slowed progress by interrupting the continuity of group culture. Changes in institutional policies also slowed down progress and outputs, as did bureaucratic delays. In addition to slowing the process both of these things contributed to student attrition, as a result of frustration. The group carried on despite these challenges and is still working to carry out their goals presently.

Despite their various strengths and weaknesses, each group is essential to address food policy in the region. They approach food insecurity at different levels, all of which need to be attended to. While there may be overlap in the populations they serve, all three types of organization are needed to address food insecurity precisely because food insecurity is so complex.

The WFN is successful at county wide engagement that incorporates every sector of the local food system. Their deep history in the community and legitimacy gained through partnerships with established organizations, institutions, and nonprofits gives them a place at the table when influencing things such as the Whatcom County Comprehensive Plan and the Washington State Food Systems Round Table. They are able to bring numerous stakeholders together to assess the current state of the local food system and inform potential donors about viable community partnerships and collaborations.

The BFSSWG fills in where the WFN fails in terms of specific action items to directly address food insecurity and injustice. The Birchwood Food Group was not concerned about maintaining a politically neutral stance, and thus was able to launch directly into on-the-ground

efforts to counter the effects of the Birchwood food desert. They were able to focus on a more discrete food system weakness and come up with direct action items to respond.

The FSWG, though small in scope, is a micro level organization that is successful at directly changing the food buying practices of a large institution. These procurement practices will infuse considerable capital into the local food system over time. They also contribute to a larger national movement of universities shifting their food purchasing practices in ways that could 'trickle up' and substantially change the practices of large-scale national and international corporations.

Chapter 5: Conclusion

This thesis is the culmination of nearly two years of Participant Action Research with three research partners in Bellingham Washington. I assisted in and observed the work of the Whatcom Food Network's (WFN) Community Food Assessment team, the Birchwood neighborhood's Birchwood Food Security Working Group, which morphed into the Birchwood Food Desert Fighters, and Western Washington University's Food Systems Working Group. All of these groups work to increase food security and/or food sovereignty within the greater Bellingham area. Their efforts included data gathering, increasing direct food access to underserved populations, and policy work on county, city, corporate, and institutional levels.

While volunteering with and observing all of these groups, I was curious to see how they were going about their food system strengthening work. I paid particular attention to their composition, specific policy efforts, and their final outputs. I sought to understand what worked well for the groups and what their challenges were. My goal was that this information would be useful to these groups as well as future ones who hope to engage in similar undertakings.

First, this research seeks to examine the composition and intergroup work process of each organization to better understand how these structures impact the way they work. Second, this research seeks to understand what policies are being promoted, developed, and utilized by each. Third, this research seeks to understand the outputs of each organization as they address food insecurity and sovereignty, and thus try to strengthen the local food system. Using participant action research, I compare the process and products or outputs of three different organizations and advocacy groups that are working to this end. In doing so, I hope to shed light on ways in which similar organizations, that are also striving to strengthen their local food systems, could learn from these groups.

Limitations

I encountered three main limitations while conducting this research. First, the sheer workload required for what I took on was excessive. The scope of work under a PAR methodology was high for one group, let alone three. Secondly, the timelines of my graduate program and my research partners' work were not in sync. I recognized that the summer fieldwork season encouraged by my master's program did not match up with community meetings, the growing season, and other community activities. As such, I extended my time to completion by including an additional year of field research. Thirdly, my positionality prohibited me from engaging with one of my research partners as much as I would have preferred. Despite these limitations, we did succeed at moving forward a number of food system strengthening efforts.

The decision to work with three research partners in a multi-site ethnography while assiduously adhering to Participant Action Research ideals, turned out to be too much of a workload. I ended up volunteering hundreds of hours toward my research partners' various projects and needs and interviewing dozens of respondents. My extensive work with the WFN on their CFA update amounted to researching and writing the equivalent to a second thesis. In addition to the heavy workload of my volunteerism, sorting through the voluminous data I gathered during my research was no mean task. If I were to replicate this research, I would opt to engage with only one research partner. I would also set more well-defined boundaries around how much time I would give to them and their endeavors. This would allow me to have more time for analyzing, writing, and completing my own goals. In short, I took on too much to be able to complete this work in a two-year master's program.

Another major limitation was my timeline, in relation to my research partners' project timelines. All of the work that my research partners were engaged in was on-going. Apart from my work with the CFA, it was challenging for me to find natural entry and exit points that corresponded to beginnings and ends of my partners' projects. Both the Birchwood Food Group and FSWG were still deeply involved in their projects when I had to exit my research position. This made it difficult for me to gather data on the conclusion of some outputs. I had to rely on second-hand observations to report on many of those groups' outcomes.

Thirdly, my positionality limited my access to the Birchwood Food Group. Although all of my previous work and connections helped me gain trust and acceptance with the WFN and the FSWG, they did not help much with the second iteration of the Birchwood Food Group. That group was quite committed to being for and by that community. At the time I was working with the BFDF I was living in a wealthy neighborhood that had been vocally opposing some affordable housing efforts being put forth by lower income Bellingham residents. By living where I did, I was met with some suspicion and not integrated into their process as deeply as would have been necessary to get clearer insights on the group's inner workings.

Recommendations for Future Food Policy Work

By paying attention to the efforts of previous groups, communities will be able to increase the effectiveness and efficiency of their work. There were some notable commonalities between the regional, neighborhood, and institutional food policy groups I worked with. The general recommendations I have for future food policy work, regardless of scale, is to have consistent staffing, clearly defined goals, and pair grassroots community-lead organizers with seasoned and well-networked ones.

The most consistent recurring theme I observed with all of my research partners, was chronic staff and volunteer shortage. I strongly recommend that staff funding be built into any efforts to strengthen food systems. Changing municipal or institutional food policies requires long-term commitment and significant labor. This work requires coalition building and *extensive* networking, both of which need continuity to create and maintain. All of the groups I worked with relied heavily on volunteer labor, which tended to have a high turn-over rate. For timely policy progress to take place, consistent group membership is a must.

Another important ingredient for timely outcomes, are clearly defined goals. The groups who had those were able to meet their policy and output targets more quickly than those who did not start out with clear goals. Having clear tasks for the onset made it easier to connect volunteers into existing work. This has the effect of keeping people engaged, keeping morale high, and leading to what appeared to be lower levels of volunteer attrition.

Seasoned leadership also helped with these concerns. Grassroots leadership is very important and gives voice to those often silenced in political spheres. However, a mix of experienced leaders and engaged community members may be able to better organize, operationalize, and execute complex community goals in a timely manner than just one or the other.

I also have recommendations specific to different sized groups that may wish to pursue their own future efforts. To regionally-focused groups, I encourage you to build a cohesive team with a paid coordinator and adequate staffing and funding. This, in addition to collaborative policy development and clearly defined goals is key to navigating numerous stakeholders across multiple food system sectors. For neighborhood groups who are fueled by passionate stakeholders, you can do excellent work when you have a supportive and collaborative mixture

of grassroots and professional or seasoned leadership. This, combined with strong community outreach and attainable goals, is very powerful. And to institutional groups, I wish to explain that you too need consistent staffing and membership, which can be highly effective when embedded within a supportive institutional or corporate structure. If students are a significant portion of the group, it is important to find ways to maintain the knowledge and culture of the group as students graduate out of their positions. This will help keep momentum and morale up.

Broader Consideration for Food Sovereignty Work

As food security becomes an increasing concern for more and more people, communities will need to improve their food sovereignty going forward. Both in the United States as well as globally, growing poverty rates and increasing food prices are preventing people from accessing adequate and healthy food (Tim Wheeler, Joachim Von Braun 2013). Limited economic as well as logistical access to high quality and nutritious foods, i.e. food deserts, are also contributing to lowered food security in the United States (Clendenning, Dressler, and Richards 2016). These things are contributing to rampant diet-related illness in developed countries and lowering our over-all community health (Ikerd 2011).

Additionally, social order requires food security (Soffiantini 2020). Our current centralized food production and distribution system has numerous vulnerabilities that threaten food security for everyone, not just the poor. The impacts of supply chain interruptions caused by a myriad of disasters including pandemics (Laborde et al. 2020; Aday and Aday n.d.), extreme climate fluctuations and weather events and subsequent crop failures (Tim Wheeler, Joachim Von Braun 2013; Betts et al. 2018; Lewis 2017), transportation problems (Mithun Ali et al. 2019), and food storage breakdowns (Liddiard et al. 2017) can all be lessened by strengthening decentralized local food systems (Giordano, Thierry; Taylor, Katrin; Touadi, Jean-

Leonard n.d.). Global environmental degradation linked to petroleum-dependent industrial agriculture (Altieri and Manuel Toledo 2011) can also be addressed by decentralized sustainable agriculture (Hendrickson, Howard, and Constance, n.d.). This is the heart of food sovereignty. In short, social justice, community health, environmental sustainability, and even national security depend upon stable food systems.

Fostering decentralized, locally controlled food systems that operate with food sovereignty as their guiding principle is possible with committed and skilled local advocacy work. In the wake of the Covid-19 pandemic, supply chain interruptions, the catastrophic West Coast fires, and economic and climate volatility, more and more people are paying attention to the vulnerabilities and inequalities of our centralized and profit-driven food system. This increased awareness provides a ripe opportunity to focus more energy on our community organizing and local food system strengthening work at every level and in every sector. As we look to the future in Whatcom County and elsewhere, it is perhaps prudent to conclude with a reminder that "Everyone on the planet needs to eat nutritious foods every day to live a healthy and productive life… food should not be treated like other commodities, and the people who produce food, along with a stable agroecosystem, should be protected as critical to society" (Hendrickson, Howard, and Constance, n.d.).

Appendices

Appendix A: Whatcom Community Food Assessment

I dovetailed ten (*n=10*) structured interviews as both research for my thesis as well as qualitative data collection for the WFN's Community Food Assessment (which was the primary output for that group). For these interviewees, the CFA team and I chose people and groups with substantial expertise within each sector of our local food system. We tried to get a wide range of voices and perspectives. These structured interviews asked local food system stakeholders about gaps, challenges, assets, collaborations, and emerging issues in Whatcom County's food system.

The CFA creation was a highly iterative process. The CFA team and I wanted the interviewees to be represented fairly and to capture the most accurate picture of each food system sector that we could. First, I recorded the interviews and had them transcribed. Then I returned the transcriptions to the interviewees to review and incorporated their edits into a bullet-point report that I wrote for each one. After that, I returned those reports to the interviewees and incorporated additional edits. Finally, I returned this edited report to each interviewee, and if they were satisfied with it, I submitted this final report to the whole CFA committee. This was so that the interviewees were protected as per the University's IRB requirements.

From these reports, the CFA team drafted Sector Summaries. These summaries were shared with WFN steering committee members representative of each sector. These steering committee members added details and made edits. Then each edited Sector Summary was shared with a Ground Truthing group appropriate for that sector to further fill in gaps (See CFA document below). These groups added more details and made further edits. These steps alerted us to anything that my interviewees may have missed regarding their sector of the food system. After that the entire WFN Steering Committee reviewed each Sector Summary and made

additional edits. Lastly, I returned each Sector Summary to my initial interviewee to confirm that the document accurately represented their sector. They shared comments on the completed Sector Summary with the WFN. The final product of this process made up the qualitative portion of the CFA up-date, which was published in January 2018 (following page). I also helped to conduct an environmental scan of best practices regarding quantitative data indicators that other communities use for their community food assessments. I shared this research with the WFN and CFA group but did not include it in this thesis.

The published CFA, created as part of this Participatory Action Research, begins on the following page.

Whatcom Food Network

Whatcom Community Food Assessment

2017 UPDATE REPORT

December 2017

Prepared by Whatcom Food Network CFA
Update Subcommittee

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Acknowledgments

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Introduction

WHAT IS A COMMUNITY FOOD ASSESSMENT?

A community food assessment (CFA) is a way to understand how a local food system is working from multiple viewpoints within each sector and across all sectors – land, water, farming, fishing, labor, processing and distribution, consumption, and waste. It provides a snapshot of the challenges and opportunities within our local food system and can be used to set goals, and improve or develop programs such as farmland protection, water conservation plans, producer education, food system infrastructure development, food security initiatives, and policy advocacy. Because the process of compiling the CFA is inclusive, valuing input from diverse participants, the CFA promotes community involvement, leadership opportunities, discussion, education, and collaboration to address identified food-related issues.

Each community's CFA is different as there are no universal formulas or rules. We'd like to disclaim that the 2017 Whatcom CFA Update is not comprehensive and it is not perfect. The Whatcom Food Network (WFN) Update Subcommittee gathered input from individuals and groups representing as many points of view on as many topics as possible, given the resources available, and made an effort to present information in an accurate, fair, and unbiased manner.

If you have comments or questions about the content, please email whatcomcommunityfoodnetwork@gmail.com.

BACKGROUND AND PURPOSE

The first Whatcom Community Food Assessment was published in early 2011, primarily using qualitative and quantitative data gathered in 2007-2009. In 2013, the Whatcom Food Network undertook the first CFA update and committed to continuing updates every 3-4 years. The 2017 CFA Update presents key developments since 2013 and provides a snapshot of the current status of each food system sector.

The CFA aims to illuminate the current challenges and opportunities in Whatcom County's food system. As the Whatcom Food Network's primary goal is to increase communication, coordination, and collaboration among the many organizations that comprise our local food system, there also is a section in each sector summary that lists collaborative projects involving multiple organizations working together to address food system challenges. The CFA also offers research reports and other resources for those who want more information about the status of each sector, and lists of organizations working within each sector. Finally, the CFA tracks indicators of progress in the Whatcom Food Network's major goal areas: Social Justice, Thriving Economy, and Environmental Stewardship which can be viewed online at www.whatcomfoodnetwork.org.

It is important to note that this CFA Update is organized by sector for the sake of clarity. However, this can tend to obscure the significant extent to which the parts of the food system interact and impact one another. The food system, like any system, is largely impacted by the relationships and interdependence of each different part within the whole.

OUTPUTS

The 2017 CFA Update resulted in three specific outputs:

1. Key informant perceptions of significant developments since the 2013 CFA Update, and current challenges, opportunities, collaborations, and resources in each food system sector. This information is presented in the body of this report.
2. Updated/new indicators to illustrate change over time in the major WFN goal areas. This information is presented in the online version of the CFA.
3. An online version of the CFA Update on the new Whatcom Food Network website.

Methodology

Gathering information and writing the sector summaries in this Community Food Assessment was an iterative process involving many people working in each of the eight sectors of the food system: land, water, farming, fishing, labor, processing & distribution, consumption, and waste.

Key Informant Interviews: The process began with key informant interviews. With input from sector stakeholders, the CFA Subcommittee identified 1-2 key informants to represent each sector. A total of 12 interviews were conducted to gather stakeholder perceptions of the status of their food system sector at a single point in time. The CFA Subcommittee used the interviews to draft sector summary reports for each of the eight food system sectors.

Input from WFN Steering Committee Members: WFN Steering Committee members (both past and present) helped to complete or fill gaps about key developments, challenges, collaborations, opportunities, resources, and indicators.

Ground-Truthing with Organizations: The CFA Subcommittee then met with existing groups representing each food system sector to ground-truth the sector summaries. Input from these groups was incorporated into each sector summary, and the revised draft was sent back to a representative of the ground-truthing group for review and typically more revisions. (The one exception to this process was the labor sector as there was not a suitable group available. Instead, we asked additional individuals to review this sector summary).

WFN Steering Committee Review: Finally, the WFN Steering Committee members reviewed the sector summaries and made additional suggestions.

A more detailed description of the methodology, including the key informant interview questions, is presented in Appendix A. The list of key informants, ground-truthing groups, and the WFN Steering Committee is in Appendix B.

The process for producing each sector summary:

1. Conduct 1-2 key informant interviews per sector
2. Draft sector summary
3. Review by WFN Steering Committee member(s) who represent the sector
4. Edit
5. Review by an existing group or organization that represents the sector
6. Edit
7. Review by representative of the ground-truthing group
8. Edit
9. Review by WFN Steering Committee
10. Edit

Summary of Findings

KEY THEMES

KEY THEMES

Many of the challenges and opportunities presented in the individual sector summaries are relevant to several sectors, but most are presented in just one section of the CFA in order to reduce repetition. Given the interconnections between the sectors of the food system, it is valuable to survey the status of the food system as a whole and identify major themes that emerge. Looking across the food system sector summaries at the current major challenges to the Whatcom County food system and efforts to address them, the CFA Subcommittee identified five major themes.

I. Food and the Environment
II. Economic Sustainability
III. Social Sustainability
IV. Policies and Regulations
V. Collaboration and Partnerships

I. FOOD AND THE ENVIRONMENT

Climate Change
In nearly every food system sector, environmental factors affecting or resulting from food production were identified as major challenges. The most pervasive factor is climate change. The impacts of climate change are increasingly felt by food producers as unpredictable weather affects growing and harvest seasons, rainfall and snow pack, air temperatures, pest insect populations, ocean water temperatures and acidity, and river instream flow levels and temperatures.

Water issues
Water issues are a major environmental focus in many sectors – land, water, farming, fishing, and waste. Water access, water quality, and water quantity are all essential for farming, shellfish, and fish populations. The competing demands for this limited resource continue to be a source of tension, though there are many programs and collaborations working to address water challenges.

Food Waste Reduction and Management
Food waste reduction and management is another sector where food and environmental issues intersect. With organic waste making up more than half of our community's waste stream, organizations are providing more education and technical assistance than ever to encourage widespread adoption of waste reduction practices and use of food composting services among food producers and consumers.

II. ECONOMIC SUSTAINABILITY

Global Competition
A common theme echoed by key informants throughout the food system is that the economics of food production is extremely challenging given the price consumers are able and willing to pay for local food in a global food marketplace. Operating costs for farmers, fishers, processors, distributors, and food businesses are increasing with more stringent requirements to comply with food safety and environmental regulations, and higher minimum wages for workers. At the same time, local food producers must compete with cheap food from larger companies and foreign countries that have lower production costs.

Consumer Awareness
Successful efforts to educate consumers about the value of local food, and to promote businesses that produce and sell local food, have contributed to increased demand, at least among those consumers with the time and financial resources to purchase food with these considerations in mind.

Increasing Efficiencies
Progress in developing local food aggregation and distribution systems, access to capital for scaling up production, and new opportunities for consumers to purchase local products are both generating and responding to increased demand.

III. SOCIAL SUSTAINABILITY

Food Insecurity
The numbers of people using Whatcom County food banks and the quantities of food distributed reached an all-time high in 2015. The cost of a meal has continued to increase as well, while wages have not kept pace with the cost of living. Food deserts have also increased with recent closures of local grocery stores in areas with high rates of poverty. Proposed reductions, in 2017, to the Federal budget for the Supplemental Nutrition Assistance (SNAP) program would compound these issues, dramatically reducing food access for low-income families. Already, families with incomes too high to qualify for SNAP but too low to meet their food needs, are using food banks to fill the gap.

Farm Labor
Relationships between groups advocating for farm owners/managers and those advocating for farm workers are chronically tense. From the commercial farming perspective, the need is for predictable, fair, just, cost-effective ways to provide enough legal laborers to farms. From the farmworker perspective, workers are still not getting their basic needs met for livable wages, medical care, training, safe working conditions, and affirmation of their value in the food system. The livelihood of both farm owners and workers depends on the economic viability of farms and will require ongoing dialog to reach agreements that meet the needs of both labor and management.

IV. POLICIES & REGULATIONS

Food System Policies
Big challenges and opportunities to affect change exist in food system regulations, codes, policies and plans. In the case of food production, balance is needed between the costs/time to deal with regulations and the benefits that may result in terms of improved food safety, environmental protection, access to enough laborers, and working conditions for those laborers.

Immigration Rules
Current immigration policies make it challenging for immigrants, particularly Latino and Latina farmworkers, to legally and justly work in the U.S. Recent efforts to change immigration policies, crack down on undocumented workers, and require Congressional review of the Deferred Action for Child Arrivals (DACA) program, have generated fear, the potential for deportations, and increased uncertainty and unpredictability for workers in the food system.

Water Rights
Whatcom County's Agricultural Strategic Plan aims to create and preserve agricultural land. One complication which must be addressed is the disconnect between the acreage needed for agriculture and the availability of water rights to accompany that land. Right now, it is difficult for many farmers to obtain an adequate, legal supply of water. Although not related to agriculture, the Washington State Supreme Court's 2016 "Hirst decision," which stipulates that any new private residential wells may not impair senior water rights, including instream flows, is drawing additional attention to questions of water rights. Many feel that current water usage policies and practices will need to change. The Hirst decision, the 2016 Coordinated Water System Plan, and the many groups collaborating to address water quality, quantity, access, and habitat restoration will ideally generate solutions to the water access challenges in Whatcom County.

V. COLLABORATION & PARTNERSHIPS

The creation and implementation of many new projects and partnerships between organizations within and across food system sectors is an indicator of progress toward the Whatcom Food Network's primary goal of increasing communication, coordination, and collaboration within the food system. Overall, food processing and distribution infrastructure is evolving, consumers have increased access to local products, including education about the value of local food and how to grow, prepare, and procure it. In addition, the private sector has created new cooperative enterprises and partnerships. The lists of collaborations in each sector summary of this CFA highlight these partnerships.

Sector Summaries LAND

KEY DEVELOPMENTS:

- Land prices and development pressure continue to increase.
- Whatcom Conservation District received a National Estuary Program Grant from the EPA and a Conservation Innovation Grant from USDA to develop and refine innovative manure management tools that are the subject of a multi-state collaborative project and international adoption.
- A total of 899 acres of farmland are now protected by Whatcom County's Purchase of Development Rights Program.

KEY CHALLENGES:

Farmland is a constrained resource – The rich agricultural land of Whatcom County is becoming more difficult to obtain and maintain as farmland for many reasons:

- Increasing population and development pressures are driving demand for land and increasing the value of available property making farmland harder to find, conserve, and afford.
- Foreign investment in agricultural land (especially from Canada and India) has driven up land prices. In many cases, the cost of the land itself now far exceeds the ability to pay it off by farming.
- Raspberry growers in Whatcom County are subject to land pressures given narrow environmental conditions suitable for growing raspberries, and the increasingly high price of lands with these growing conditions.
- Blueberries can be grown on more marginal land, or on converted dairy land. However, blueberries have been over-planted in the past few years and the market has now been saturated, leading to lower prices.
- Dairies are especially impacted by land pressures because they need land for manure management. The price to buy or rent land for manure management is too high to be economically viable, but so is the cost of trucking manure to more affordable land in Skagit County.

Legal access to land with irrigation water – Access to land with adequate water for irrigation and livestock watering is limited because of seasonal shortages of water in places where it is needed, and also because farms may not have legal water rights. Significant farm acreage currently is irrigated without legal water rights, making these farms vulnerable to losing water access.

A need for more data – There are many questions under study that require further research to determine best practices for maintaining the health of farmland and water. These include questions about nutrient application setbacks as affected by vegetative buffers, and pesticide application rates and the impacts of these chemicals.

Balancing land conservation with habitat restoration - Federal lawmakers may authorize the Army Corps of Engineers to pursue a $451.6 million project to convert hundreds of acres of privately-owned farmland near the mouth of the Nooksack River into fish habitat, which is opposed by the Farm Bureau and local farm advocacy groups.

CURRENT COLLABORATIONS:

Whatcom County Agricultural Advisory Committee (AAC) is composed of representative large and small-scale food producers, conservation organizations, educators, and others who provide the Whatcom County Council with reviews and recommendations on issues that affect agriculture.

Purchase of Development Rights (PDR) Oversight Committee provides oversight and evaluation for the Whatcom County PDR program, advising the County Council in the selection of eligible lands offered for permanent protection from conversion through PDR acquisition. To date, 899 acres of working farmland have been protected.

Whatcom County Ag-Watershed Pilot Project – This grant project was funded in 2012 by a National Estuary Program Watershed Protection and Restoration Grant to Whatcom County Planning and Development Services. Project partners included the Whatcom Conservation District, Washington Department of Fish & Wildlife, and Whatcom Farm Friends (now Whatcom Family Farmers). The goal of the project was to reward the things farmers already do to maintain, enhance, or protect large-scale watershed processes while strengthening agriculture in Whatcom County. The project was completed in Dec. 2016 and resulted in many informative documents and recommendations about how to enhance both agricultural land and watershed health (see overview and summary of results).

Watershed Improvement Districts (WIDs) are groups of farmers organized by watershed to represent the water needs of the agricultural community. There are six WIDs in Whatcom County: Bertrand, North Lynden, South Lynden, Drayton, Laurel, and Sumas.

Whatcom Land Trust, Whatcom County, and the City of Bellingham have partnered to identify and establish conservation easements to protect properties with conservation value from development. To date, over 20,000 acres have been preserved throughout Whatcom County.

Puget Sound Conservation District Caucus -The 12 Puget Sound Conservation Districts (including Whatcom) aims to bring uniformity to guidance and plans for the region in the areas of storm water, restoration, livestock stewardship, and more. By working together as a caucus, they hope to increase the breadth and quality of available technical assistance.

OPPORTUNITIES:

Incentive Programs to encourage farmland conservation – The Ag-Watershed Pilot Project enabled implementation and study of innovative incentive programs designed to encourage conservation actions and protect farmland from development. These strategies are summarized in the Nov. 2016 report "Options for Recognizing Agricultural & Watershed Values of Voluntary Enhancement Actions" Examples include:

- Conservation Reserve Enhancement Program (CREP) – A program managed by the Whatcom Conservation District which pays landowners to establish buffers of native trees and plants along fish-bearing streams and rivers.
- Purchase of Development Rights – The PDR program is a voluntary program that compensates property owners for the value of their unexercised residential development potential and enacts an agricultural conservation easement to preserve farmland in Whatcom County.
- Whatcom County Open Space Current Use Program – Landowners can submit an application to Whatcom County to classify their property as "Open Space: Farm and Agricultural Conservation Land." Property taxes are reduced for land with this classification.

Whatcom County Comprehensive Plan Update 2016 – New language in the economics section of the Comprehensive Plan adopted in 2016 recommends the development of a Whatcom County Food System Plan to grow the health and vitality of the local food system. A committee of the Whatcom Food Network is working with key stakeholders to develop a Food System Framework for a Plan to be shared with City and County Councils.

Advancements in farming application and practices – The Whatcom Conservation District received a Conservation Innovation Grant from USDA to develop a manure Application Risk Management System in 2015. Tools such as the Manure Spreading Advisory (MSA) and Application Risk Management system (ARM) have led to national and international collaboration and support, including being contracted with the Queen of England through the BC Ministry of Agriculture, and a collaboration with Virginia Tech and South Dakota State University to combine local MSA & ARM tools with theirs.

Land with Potential to Be Farmed – While it is difficult to find affordable agricultural acreage in Whatcom County, there are untapped land resources, especially in urban and suburban areas, that could potentially be farmed with the proper match of crop to soil type and water availability. Policies to offset the cost of water, soil quality improvements, and the cost of renting land in urban areas are potential incentives.

WATER

KEY DEVELOPMENTS

- The dairy sector has made improvements in reducing runoff from farms.
- The Portage Bay Partnership agreement was signed in January 2017.
- The Washington State Supreme Court issued a ruling in the case of Whatcom County v. Western Washington Growth Management Hearings Board which requires that new development permit applications requiring potable water demonstrate that any new private residential wells will not impair senior water rights, including instream flows.
- Whatcom County experienced lower than average rainfall for the summers of 2015, 2016, and 2017.
- In 2014, the Portage Bay Shellfish Recovery Plan was published. The plan outlines the primary sources of bacteria and actions to improve water quality.
- The Whatcom County Coordinated Water System Plan was updated in 2016.
- Drayton Harbor opens to shellfish harvest after years of closure in 2016.

KEY CHALLENGES:

Water quantity - Ensuring sufficient water for land-based agriculture irrigation, stock drinking water, and facility wash down, as well as instream flow needs for fisheries, is an on-going challenge and source of tension between farmers and fisheries. Freshwater supply limitations include climate change projections which indicate a future of dry summers, more intense rainfall events in the winter, and decreasing snow pack, as seen in 2015, 2016, and 2017.

Water quality – Ground and surface water quality problems are serious in Whatcom County due to many types of contamination from multiple sources including fecal coliform from leaking septic systems, sewer lines, urban and rural storm water runoff, and agricultural runoff. Climate change also is impacting water quality with ocean acidification and warming water temperatures which negatively affect marine life.

Water rights - It is difficult for farmers to obtain an adequate, legal water supply in the form of a state-issued "water right" because:

- The Nooksack basin is closed to new water rights due to the Nooksack Instream Resources Protection Program (also known as the Nooksack Instream Flow Rule). The Bellingham Herald and other sources have reported that at least 50% of current agricultural operations in Whatcom County either do not have a water right or they are not operating in compliance with its provisions.
- In Oct. 2016, the Washington State Supreme Court issued a ruling in the case of Whatcom County v. Western Washington Growth Management Hearings Board, commonly referred to as the "Hirst decision," which requires that new residential development permit applications requiring potable water demonstrate that any new private wells will not impair senior water rights, including instream flows. There is still a lot of work to be done for the County to develop new policies and practices to come into compliance with the Court ruling and resolve conflicts over water use applications.

CURRENT COLLABORATIONS:

Portage Bay Partnership – The Partnership is focused on opening the Portage Bay shellfish beds, which have been closed part of the year since September 2014 due to higher than allowed levels of bacterial contamination. Recognizing this contamination is from multiple sources, this historic Partnership established a process whereby farmers and Lummi Nation leaders will work together to address all sources. Two Lynden dairy farms, Edaleen Dairy and Twin Brook Creamery, are the first to develop Water Quality Improvement Plans. The plans will identify specific ways individual participating farms can improve environmental performance and reduce bacterial contamination. It is anticipated that the remaining five farmers that are part of the Partnership agreement will develop their plans and other farmers in the county will join in.

Whatcom Watersheds Information Network – A network of organizations and individuals interested in marine and freshwater ecosystems education and outreach. They host an annual outreach event called Whatcom Water Weeks that has been held every September since 2012.

Marine Resource Committee – Hosts their annual Speaker Series and symposiums which brings research to the community on key topics such as challenges surrounding water supply, climate change, and food supply for both marine and land-based systems. The focus is on adaptation to these challenges.

WRIA Management Team and Water Supply Group (Initiating Governments: the Lummi Nation, the Nooksack Tribe, the City of Bellingham, Public Utility District No. 1 of Whatcom County, and Whatcom County) are working on tracking the linkage between groundwater and surface water, how wells impact surface water, and how to understand and reduce these impacts.

Shellfish Protection Districts – In 2014, the Portage Bay Shellfish Recovery Plan was published. The plan outlines the primary sources of bacteria and actions to improve water quality.

Puget Sound Recovery Program **and** **Puget Sound Partnership** – The Partnership is working with watershed groups, which contribute creativity, knowledge, and motivation to implementing lasting solutions to the complex challenges facing salmon and Puget Sound.

WSU and Washington Sea Grant – Washington Sea Grant (WSG) has served the Pacific Northwest and the nation by funding marine research and working with communities, managers, businesses and the public to strengthen understanding and sustainable use of ocean and coastal resources. Based at the University of Washington, WSG is part of a national network of 33 Sea Grant colleges and institutions located in U.S. coastal and Great Lakes states and territories.

City of Bellingham and WSU offer instruction and technical support for rainwater catchment for sustainable landscaping. Water storage cisterns are being installed as a model project for the City of Bellingham with the goal to have rainwater collection for urban agriculture and landscape management become a more legitimate and normalized practice.

Lake Whatcom Management Program – In 1998 the City of Bellingham, Whatcom County, and Water District 10, now the Lake Whatcom Water and Sewer District, by Interlocal Agreement established the elements of the Lake Whatcom Management Program. The entities have funded and implemented projects annually to improve and protect the water quality of Lake Whatcom which is the drinking water reservoir for the City and the District. Project partners have included WSU Extension, the Sudden Valley Community Association, and property owners.

Birch Bay Watershed and Aquatic Resources Management District (BBWARM) has a Citizen Advisory Committee with five members appointed by the Whatcom County Flood Control Zone District Board of Supervisors (County Council).

Abbotsford/Sumas International Task Force – A coordinated effort between British Columbia and Washington to ensure groundwater protection in the aquifer region across the common border between Canada and the United States based on the 1992 Environmental Cooperation Agreement.

Ag Water Board – All six Watershed Improvement Districts (WIDs) cooperate through an Interlocal Agreement to work together with coordination of the Ag Water Board. They focus on county-wide issues that transcend the boundaries of the individual WIDs involving water supply, drainage, and water quality protection.

OPPORTUNITIES:

Model Restoration Effort – The Drayton Harbor Community Oyster Farm was a pioneering, multi-dimensional effort started in 2001to restore clean water and shellfish harvesting in Drayton Harbor. The waters of the harbor prohibited all shellfish harvest due to chronic bacterial contamination. In order to harvest oysters from this historic and productive shellfish growing area, the community tackled pollution sources and achieved measurable water quality improvements. In 2014, the Drayton Harbor Community Oyster Farm transitioned into a commercial venture called Drayton Harbor Oyster Co. LLC. In 2016, Drayton Harbor opens for shellfish harvest after years of closure.

WA State Water Right Law – All significant surface and groundwater use had required a water right with an exemption for wells that draw 5,000 gallons or less per day for new residential development not served by a public water system. The Hirst decision acknowledged that exempt residential wells could impair senior water users' ability to access water, which violates Washington State's central tenant of water law of "first in time, first in right." In response to the decision, Whatcom County decided to allow new rural residential development not served by public water systems only if land owners could prove their exempt wells would not negatively impact senior water users. The Department of Ecology and Whatcom County are tracking the implications of this decision on development rights and thus land value. The purchasing of land through the Development Right Program may be affected and the impact on agriculture in uncertain. Ideally, this ruling will have a positive impact on instream flows and salmon populations.

Storm water Facilities – Whatcom County updated storm water regulations in 2016 to comply with the County's National Pollution Discharge Elimination System (NPDES) Phase II permit. The updated code provides parameters for low, medium, and high-intensity developments to determine whether the developments will require storm water site plans.

FARMING

All scales of agricultural production are included in this sector.

KEY DEVELOPMENTS:

- Land prices continue to increase.
- The Food Safety Management Act (FSMA) continues to phase in with increased compliance every year, impacting farm businesses and the standards of buyers and sellers.
- The Department of Ecology updated the Concentrated Animal Feeding Operation (CAFO) permit.
- Whatcom Farm Friends dissolves and Whatcom Family Farmers was established.
- New low-interest loan and matching loan programs give farmers who sell to local markets improved access to capital and a way to build credit.
- In August 2017, the Whatcom Business Alliance and Western Washington University published "The Whatcom County Agribusiness Sector Analysis."
- Whatcom Conservation district launches the 1st Discovery Farm on West Coast

KEY CHALLENGES:

System-wide challenges
Success in the farming sector is dependent upon many other sectors of the food system

- Access to land for both large and small acreage farms is a long-term issue. As the population of Whatcom County continues to increase, ongoing development reduces total acreage available for farming, increases constraints on water access, and inflates land prices.
- Water access and water quality are major issues currently affecting local food production.
- Competition from Other Countries – Local food producers and processors are competing with products entering the U.S. market from other countries such as Mexico, Serbia, and Chile. In the U.S., the cost of production is much higher than in other countries because of the higher costs for labor and land, stricter environmental rules, and a much stricter policy on food security. As other countries don't have these costs, they can charge less for their products and out-compete local growers in the bidding process to sell to grocery chains. Foreign imports are especially impacting berry growers.
- Access to Labor – It can be challenging for farms to find enough workers who are skilled, reliable, and available when needed (often on a seasonal basis). Another challenge is being able to afford to pay laborers a living wage and ensure them affordable housing.
- Sufficient infrastructure for processing and distribution and access to viable markets are other essential ingredients for sustaining local and regional agricultural systems.
- Artificially Low Price of Food – People have become accustomed to food prices that are artificially low (because of factors such as crop subsidies and imports from other countries) and do not reflect the actual cost of food production. Given the real production costs for local farmers, most do not have the financial solvency to absorb increased costs for their businesses such as increased wages for labor, food safety, and environmental regulations. They cannot pass all these costs on to consumers and still compete in the market.
- Farm Size and Economic Viability – As demand for local and organic produce has increased, so has pressure to increase production, increase efficiencies, and lower prices.
  - Large farms produce consistently high volumes, but because they tend to focus on a single crop, they are more vulnerable to commodity price fluctuations.

- Small farms are typically more diversified in their crop mix, but they need to increase production efficiency and product consistency to effectively expand market opportunities beyond farmers markets and Community Supported Agriculture (CSA) shares.
- It is very challenging for small farms to compete in terms of price with large farms and food imported from other states/countries.
- A big part of the financial challenge for farms is paying labor costs. With the planned increase in minimum wage, farms are increasingly challenged to pay workers and still make ends meet. While all agree that farmworkers should make a living wage, many farmers are struggling to make a living as well.

Food Safety and Environmental Regulation
New regulations increase challenges in management and operations for local farms

- The economic viability of a farm affects the extent to which it can meet increasingly stringent regulatory requirements for how food is grown, handled, and marketed.
- Regulations for food handling vary between countries creating additional challenges for farms selling outside the U.S.
- For smaller farms, it may be cumbersome and expensive to meet the requirements for Good Agricultural Practice (GAP) certification, and though it is voluntary, more buyers are requiring it.
- Food Safety Modernization Act requirements are unfolding over time with compliance increasing for processors and producers every year.
- Local dairy producers are currently grappling with the new Concentrated Animal Feeding Operation (CAFO) permit required by the Department of Ecology.

Environmental Factors

- **Climate Change** – While there may be some benefits of climate change for local agriculture, there are many challenges as a result of global warming including increasingly hot summers, low snow pack combined with more winter rain, increased pest pressures, and reduced seasonal availability of water resources.
- **Exotic Pests** – Whatcom County's location between major shipping terminals in Seattle and British Columbia, as well as its proximity to agricultural operations in Idaho, Oregon, and California, exposes local farms to exotic pests (e.g., soil-born, migratory insects, diseases) such as spotted wing drosophila and the marmorated stink bug. Whatcom's berry industry is especially vulnerable to these new pests. With concerted attention over the past few years, pest management and soil health are improving.

Public Misperceptions

- People are largely disconnected from how food is produced.
- Larger farms and dairies are perceived as willfully and negatively impacting the environment, while the reality is that Washington State has some of the country's toughest environmental rules to mitigate negative environmental impacts.

Cultivating New Leaders

The average age of Whatcom County farmers is 57, and there are not enough young farmers stepping into leadership positions (e.g., representation in Washington DC or on Commissions) to help address the future of local agriculture. It should be noted that there are young people who are choosing to farm as a career path and they would benefit from community support in acquiring land and agricultural financing.

Trade Regulations

U.S. withdrawal from the Trans-Pacific Partnership will have large impacts, yet unknown. The uncertainty of international trade agreements creates another instability in the system.

CURRENT COLLABORATIONS:

Cooperative Enterprises – Over the past few years, regional food producers, with support from Northwest Agriculture Business Center, have formed two cooperative enterprises which are helping small farms expand their markets. The Puget Sound Food Hub is now a farmer-owned cooperative marketing, aggregating, and distributing locally produced food to institutions, restaurants, and retailers. The farmer-owned and managed North Cascade Meat Producers Cooperative offers USDA processing and a mobile slaughter unit, as well as a North Cascade Meat grass-fed brand marketing program.

Businesses Aggregating Local Food – Farms offering CSA shares frequently pool their crops to increase the efficiency of their farms while offering shareholders a greater variety of items. Several businesses aggregate products from many farms and deliver to customers' homes (e.g., Acme Farms + Kitchen, Dandelion Organic, and Sound Harvest Delivery).

Watershed Improvement Districts – Whatcom County now has six Watershed Improvement Districts (WIDs) representing a significant number of agricultural producers and acreage. These WIDs collaborate through the Ag Water Board to provide a unified and organized voice for food producers in the County.

Agricultural Advisory Committee (AAC) provides review and recommendations to the Whatcom County Council on issues that affect agriculture. The AAC also provides a forum for farmers and others interested in enhancing and promoting the long-term viability of Whatcom County agriculture.

Whatcom Family Farmers is an outreach and advocacy group that focuses on advocating for farmers on a variety of issues and engages in educating the community on key topics such as water quality, water quantity, labor, and trade.

Portage Bay Partnership – Whatcom Family Farmers and the Lummi Nation signed a promising agreement in January 2017 to address the multiple sources of water pollution in the lower Nooksack Basin which are affecting Portage Bay shellfish beds. This includes a cooperative approach to developing facility-specific plans for containing sources of water pollution from dairies.

Access to Capital – The Community Food Co-op Farm Fund, the Sustainable Whatcom Fund of the Whatcom Community Foundation, and Industrial Credit Union (ICU) partner to provide grant funding and low-interest loans to help local sustainable farms scale up production to serve wholesale markets.

Coordinated response to changing food safety regulations – Collaborations between non-profit organizations, WSU Extension, and Washington State Department of Agriculture are in place to educate farmers about responding to new and evolving food safety regulations.

WSU Collaborations – Stakeholders from British Columbia and WSU have helped berry growers adopt soil health improvement practices. WSU, grower commissions, private entities, trade entities, and public officials have worked together to gain international market access for frozen berries. WSU has helped coordinate collaboration among many players to reduce reliance on fumigation and tackle disease management.

Discovery Farm – Whatcom Conservation District manages the West Coast's first Discovery Farm, a promising model in which a group of farmers identifies a challenge that can be addressed through science, such as manure application setbacks. This model generates buy-in among farmers for adopting beneficial farming practices.

Washington Red Raspberry Commission – Though this is a regional organization, many raspberry farmers from Whatcom County serve in this group, providing technical assistance, research, and marketing support for raspberry farmers.

OPPORTUNITIES:

Increasing Education and Outreach – Sustainable Connections (SC), Cloud Mountain Farm Center (CMFC), WSU Extension, Northwest Agriculture Business Center, Whatcom Conservation District and other organizations are increasing education and networking opportunities for growers. These include: SC's Food to Bank On and the Whatcom County Farm Tour, annual meetings such as the Washington Small Fruit Conference; CMFC's farmer internship and farm incubator programs; WSU's Cultivating Success program; on-farm workshops and technical assistance; and education for future farmers (e.g., FFA, 4-H, Whatcom County Youth Fair, Northwest Washington Fair).

Mitigating Environmental Impacts – Farmers have undertaken efforts to minimize negative environmental impacts of farming with new initiatives including the Conservation Reserve Enhancement Program (CREP), Discovery Farms, and the Portage Bay Partnership.

Internet Marketing – Younger farmers are especially savvy in using internet marketing to expand their reach to a wider array of customers. There are many classes available to help farmers of all ages utilize digital marketing techniques.

Food Hubs – For smaller acreage growers, using food hubs to aggregate and distribute produce is more efficient and can greatly expand their markets, allowing access to institutional buyers and increasing economic viability.

Increased Food Storage and Processing Capacity, which was identified as a need in the previous Community Food Assessments, is expected to come online within the next five years.

Urban and Suburban Agriculture – There is undeveloped land suitable for growing food in Whatcom County's urban and suburban areas. For example, some parts of Bellingham and Ferndale have zoning and lot sizes large enough to support urban farm businesses. Urban agriculture also offers opportunities to engage at-risk populations in growing food to benefit both the community and themselves (e.g., Growing Veterans and Northwest Youth Services' We Grow Garden).

A better understanding of economic impacts - Western Washington University's Center for Economic and Business Research (CEBR) recently completed a Whatcom County Agribusiness Sector Analysis. This report describes the local agribusiness sector, including not only those jobs and wages directly relating to food production, but also those supported by spending by people in farming related jobs. This data has the potential to help with planning and development efforts.

FISHING

KEY DEVELOPMENTS:

- Local fisheries are experiencing sporadic harvests and declining fishing opportunities – Fraser River sockeye and pink salmon failures in recent years were due in part to warmer ocean temperatures.
- Drayton Harbor is open to oyster harvest after years of closure.
- Crab fisheries are steady.
- First annual Bellingham SeaFeast event happened in 2016 and repeated in 2017, drawing 12,000 people.
- Puget Sound Food Hub begins accepting and selling seafood.
- Portage Bay Partnership created.
- Atlantic Salmon farming operation's net pen breaks, releasing 305,000 non-native fish into Puget Sound in August 2017.
- The Working Waterfront Coalition was established in 2014.
- Several studies were published about the economic importance and impact of local maritime industries.

KEY CHALLENGES:

Anthropogenic Environmental Impacts on Fish/ Shellfish Populations

- **Climate change** is causing warmer water temperatures in fresh and saltwater leading to shifts in salmon migration patterns. Sockeye, the highest value salmon, are now migrating further north through Canadian waters rather than state waters resulting in negative impacts on local fishermen. Climate change also is leading to lower summer flows and more frequent and larger floods, further limiting imperiled Nooksack salmon populations.

- **Ocean acidification and water pollution** (e.g., runoff from agriculture, development, and other sources; microplastics) are causing habitat degradation and loss of species. Riverine and nearshore water quality issues impact the ability to harvest shellfish as beds are periodically closed because of contamination from a variety of sources.

Declining local fishing opportunities

- **Productive runs of salmon are declining** – Pink salmon runs, which occur every odd-numbered year, have become less predictable, and Fraser River sockeye runs are now productive only one in every four years.

- **Responsible management of fisheries has limited or eliminated harvest of some species** – Stocks of some species are critically low and fishing is limited or eliminated for their protection, such as Nooksack spring Chinook, which are listed on the Endangered Species Act (ESA). The ESA listing also constrains harvest of multiple other populations to protect the listed fish which might be inadvertently harvested along with the target stock.

- In general, overfishing is not a problem for West Coast and Alaska fisheries, as most federal and state fisheries are well-managed. There are other parts of the country where it can be a problem, and certainly, on a global scale, there are many fisheries that are over fished. In concert with this, in the U.S., many fisheries experience intense competition for allowable catch between commercial and recreational fishermen.

Lack of coordination and collaboration – Within the fishing industry, coordination and collaboration on a statewide basis is lacking, which makes it difficult for fishermen to advocate for their common interests. However, local Whatcom County fishermen are ably served by the Whatcom Commercial Fishermen's Association and the Working Waterfront Coalition of Whatcom County.

Limited local seafood direct marketing distribution channels – It takes time away from the water for commercial fishermen to drive product from coastal locations where it is caught to population centers to distribute. It is more convenient, though less lucrative, for fishermen to sell to processors.

Financial pressures – Traditional sources of financing such as banks are reluctant to provide capital to invest in fishing gear because fisheries lack significant equity to serve as collateral, and because of the nature of vessel titles and liens. In addition, local seafood markets are highly variable, meaning that fishermen's income fluctuates a lot.

Lack of technical support and subsidies – Fisheries lack the types of technical support and subsidies available to land-based agriculture (e.g., University Extension services, loans, crop insurance), though Sustainable Connections does offer marketing and market growth assistance to seafood businesses.

Atlantic Salmon Spill – In August 2017, a fishnet near Cypress Island broke, resulting in more than 305,000 farmed Atlantic salmon released unintentionally in Samish Bay. The impact of this spill is unknown, but area tribes and environmental groups are concerned the salmon, which are not native to the region, may impact Pacific salmon populations which are protected under the Endangered Species Act. Investigators and scientists are working to gauge the threat they pose to native species. It will take months, or years, to measure the impact of the spill.

CURRENT COLLABORATIONS:

Portage Bay Partnership is an agreement signed in January 2017 between Lummi Nation and Whatcom Family Farmers to work together to reduce water contamination from dairy farms and other sources and restore and protect shellfish beds.

Water Resource Inventory Area 1 (WRIA 1) Watershed Management Program covers watershed planning issues including water quality, water quantity, instream flow, and fish habitat. Together, the WRIA 1 Watershed Management and Salmon Recovery Programs promote salmon recovery through voluntary habitat restoration, responsible harvest, and regulatory protection. These programs fall under a unified decision-making structure governed by the WRIA 1 Salmon Recovery Board and Watershed Joint Board.

Producer Cooperatives – Whatcom County is home to North America's oldest fishermen's cooperative – Seafood Producers Cooperative. In addition, Lummi Island Wild Co-op LLC is rated on the top ten most sustainable fisheries in the world with solar-powered reef net gear located off Lummi Island. Lummi Island Wild currently is helping Lummi Nation locate reef net gear at Cherry Point as well.

Shellfish Protection Districts – Three shellfish protection districts have been established in Whatcom County. Natural Resource staff provide technical assistance and collaborate with advisory groups, tribes, state and federal agencies, and citizen groups to recover water quality and shellfish growing areas.

Whatcom County Marine Resources Committee (MRC) is a citizen-based committee focused on resource conservation and habitat protection within the Northwest Straits.

Working Waterfront Coalition of Whatcom County promotes the vitality and economic benefits of our working waterfronts. Members are Whatcom County-based companies and non-profits whose main focus is maritime activities.

Whatcom Commercial Fishermen's Association supports and encourages commercial fishing businesses.

Events highlighting local fisheries – The Port of Bellingham and community groups host annual events, including the Wild Seafood Exchange and Bellingham SeaFeast, to help fishermen expand direct marketing opportunities and sales, and showcase the industry.

WSU Extension and Washington Sea Grant have a long-standing partnership providing water resource education in Whatcom County.

Marine Rental Policy – In 2017, the Working Waterfront Coalition joined Port staff on a committee to draft a new marine rental policy that offers advantageous rates to attract and hold qualifying maritime companies.

OPPORTUNITIES:

Whatcom County is an active and productive hub for fishing – Many fisheries are anchored in this region and benefit from local investment in infrastructure to support the fishing industry, including the deep-water port, fish processing, and cold storage facilities. Whatcom County fisheries include:

- In county – Salmon, Dungeness crab, and shellfish mariculture
- State inside water fisheries – Boats based in Whatcom fish in state waters for salmon, crab, and spot prawns, much of which is landed locally
- State coastal fisheries – Salmon, tuna, Dungeness crab, spot prawns, pink shrimp, groundfish, and sardines
- Out of state fisheries – Many local boats participate in fisheries in other states (e.g., Alaska), which provide millions of dollars and pounds of fish to the local economy
- Offshore fisheries – Some local boats venture as far as the South Pacific trolling albacore tuna. Much of that fish is landed locally and supports a significant processing sector.
- Seafood exports generate substantial income for Whatcom businesses.

Increase fish production and consumption – Consumers are motivated to purchase and eat more seafood for the perceived health benefits. Currently, 60-70% of seafood is eaten in restaurants. As seafood consumption increases, it is critical to ensure sustainable practices are maintained to avoid depleting fish stocks. The market can be expanded by including different types of fish and educating consumers about how to select sustainably raised and harvested fish/shellfish, and how to prepare it in the home kitchen.

- Some see aquaculture as an opportunity to increase fish and shellfish availability, and to increase local food security. With regard to farming salmon, however, Whatcom County and Lummi Nation have taken a position against farming salmon in net pens because of potential harm to native salmon runs from disease, parasites, and water pollution associated with these operations.

Waterfront re-development – Plans are in place and work is underway to create a mixed-use site that preserves the working waterfront and offers opportunities for direct sales (e.g., a public access pier for boats selling locally caught fish).

More economic data – Recent studies have been published that shed light on the economic importance and impact of maritime industries including: Whatcom County Marine Trade Impacts report, The Economic Impacts of Commercial Fishing Fleet at the Port of Bellingham, and the WA State Economic Impact of the Maritime Industry Study. This research can help guide effective development.

LABOR

Labor is designated as a distinct sector of the food system to underscore the significance of workers as the engine that makes the whole system go. While called out as a distinct sector, labor intersects nearly all the other food system sectors – farming, fishing, processing, distribution, consumption, and waste – as it includes people working in such diverse jobs as farmworkers, seafood packers, retail and restaurant staff. "Workers" or "laborers" are distinguished from business "owners" who control the business, and sometimes also manage the business.

This summary of the labor sector attempts to present the perspectives of both workers and owners; perspectives which are often very different and frequently at odds.

More research is needed to understand the full scope of the labor sector within Whatcom County's food system.

KEY DEVELOPMENTS:

- Washington State passed Initiative 1433 which increased the minimum wage to $11 an hour in 2017, and it will increase to $13.15 by 2020. Employers also are required to provide workers with paid sick leave starting in 2018.
- Changing U.S. immigration policies raise concerns about meeting the needs of food businesses for dependable, skilled workers.
- Conflicts between farm owners and workers have increased tensions and also resulted in the formation of the third independent farmworkers union formed in WA State.
- An H2A guest worker died on Sarbanand Farm in August 2017.

KEY CHALLENGES:

Wages and Benefits – Washington State passed Initiative 1433 which increased the minimum wage to $11 an hour in 2017, and it will increase to $13.15 by 2020. Employers also are required to provide workers with paid sick leave starting in 2018. Increased wages and benefits are clearly positive for workers, but also pose a significant financial challenge for food businesses with very tight profit margins.

Tension between farmworkers, advocacy groups, and farm owners/managers – Tension between business owners and workers (and the unions that advocate for them) is a chronic issue, but over the past two years, relations have been particularly contentious in the local farming sector. Two high-profile conflicts stand out involving Sakuma Brothers Farms in Mt. Vernon and Sarbanand Farms in Sumas. The Sakuma Brothers conflict, which included a boycott of Driscoll's (the major California berry company Sakuma sells to), resulted in a contract agreement with the farmworker union Familias Unidas por la Justicia (FUJ), in June 2016. The Sarbanand Farm conflict erupted with protests following the death of an H2A guest worker in August 2017. At this time, advocacy groups for farm owners/managers and farmworker advocates disagree about the basic facts of the case (beyond the death of the worker), and their perspectives appear diametrically opposed.

Changing U.S. Immigration Policies – The food system has relied on immigrant labor for a long time. With changing immigration rules, undocumented workers who have lived and worked in the area for many years, raising families here, are now facing increased threats of deportation.
The Deferred Action for Childhood Arrivals (DACA) program is a policy which offers temporary relief from deportation for undocumented immigrants who came to the U.S. before the age of 16. This policy is now being reviewed and may be rescinded. Nearly 18,000 DACA recipients live in Washington State, many of whom work in the food system, or have a close relative who does. While there has been no official change in enforcement policies yet, there is enhanced scrutiny and screening of undocumented workers which elevates the fear of deportation among DACA recipients and their family members, as well as among the employers who rely on them. As these policies sunset or are changed, it raises the question of how to be flexible and adapt to a new labor environment.

Labor shortages – There are concerns that changing immigration rules could create labor shortages, and some local farms report they are currently experiencing difficulties finding enough skilled, reliable workers. One way food businesses are addressing concerns about labor shortages is by automating various parts of production to reduce the need for human labor (e.g., milking machines, berry picking, and processing equipment).

H2A "Guest Worker Program"- A controversial option to address labor issues by contracting with foreign workers on a temporary, seasonal basis. However, both local food workers and business owners see problems with this option. From the worker perspective, both the H-2A program and automation are threats to the livelihood of domestic laborers. In addition, foreign workers who contract through the H-2A program have little recourse and are vulnerable to deportation if they have conflict with their employer. Advocacy groups also note that, as the H-2A program has grown, there has not been a corresponding increase in government oversight to monitor working conditions. From the business owner perspective, the H-2A program requires time-consuming paperwork and is very costly because employers are required to pay wages, housing, transportation, medical care, and provide access to food for guest workers. Locally, only Sarbanand Farms, which is owned by a large California company, has used significant numbers of guest workers.

Seasonal Work – The seasonal nature of many jobs in the food system creates a challenge for both employers and workers. Farming and fishing require lots of workers for parts of the year to grow, harvest, and process the food. It is challenging to find workers interested in doing short-term, intensive work without any promise of employment the other months of the year.

CURRENT COLLABORATIONS:

Labor unions connecting with community organizations

- United Food and Commercial Workers (UFCW) Local 21 has been connecting with faith communities, racial/ economic justice communities, immigration rights groups, LGBTQ organizations, and youth-focused organizations who share values in order to help each other meet their respective goals.
- Community to Community Development (C2C) supported, trained, and worked with FUJ to negotiate for their first contract.

Worker-owned cooperatives – C2C and FUJ continue working together to provide training to help farmworkers develop worker-owned cooperatives.

Year-round Employment for Farmworkers – To address the challenges that seasonal work schedules create for both farm owners and workers, Ralph's Greenhouse and other Skagit Valley farms are coordinating their crop harvest schedules so that workers can stay in the area and have year-round employment, rather than moving around for temporary jobs.

OPPORTUNITIES:

Find common ground – There is a symbiotic relationship between food business owners and workers as each needs the other and both will lose if the business fails. Recognizing their mutual dependence presents an opportunity to address the differences in perspective that are so divisive, and to seek common ground to ensure that both economic goals and human needs are addressed.

Immigration reform – The temporary and changing nature of immigration policies creates instability in the labor sector. Immigration reform is needed at the national level to ensure enough skilled workers to sustain our local food economy. In addition, it could relieve some stress in the system locally to encourage and provide support for workers and their family members to obtain legal status to live and work in the U.S.

Increased consumer awareness – There is an ongoing need to educate consumers about the significant labor involved in food production, and increase their knowledge and appreciation of local food and willingness to ask and pay for it. As consumers become increasingly aware of the need to support local food businesses, through marketing campaigns such as Eat Local First, they make more thoughtful, values-based food purchasing decisions.

Domestic Fair Trade certification – C2C, the Agricultural Justice Project, and other partners have established a Domestic Fair Trade labeling protocol for local farms and other food system businesses to alert buyers to fair treatment of workers, fair pricing for farmers, and fair business practices. There is an opportunity to build momentum around the use of this label by local food businesses.

The positive impact of cooperatives – Co-ops have been driving positive changes in the food industry. Consumer co-ops, distribution co-ops, and producer co-ops are businesses that are owned jointly by the members, who share the profits or benefits. There are many food-related cooperatives in Whatcom County, and this business model is gaining momentum as a way to strengthen the local economy and advance fair labor practices.

PROCESSING & DISTRIBUTION

KEY DEVELOPMENTS:

- A study was undertaken to determine the feasibility of building a "food campus" with food processing capacity in Whatcom County.
- North Cascades Meat Producer's Co-op creates and launches mobile slaughter services.
- In 2016, Northwest Agriculture Business Center (NABC) and farmers from Whatcom and Skagit County transitioned the Puget Sound Food Hub from NABC management to a farmer-owned cooperative, with over one million in sales.
- In 2014, Osprey Hill Farm opened Osprey Hill Butchery in Acme.
- Burk Ridge Farms and their USDA processing facility and mobile slaughter unit close.
- In November 2013, voters approved a bond that includes building a central kitchen for Bellingham Public Schools to enable more scratch cooking with fresh and local foods. The project is underway and the expected completion date is 2019.

KEY CHALLENGES:

Scale and Economic Viability – For both processing and distribution, a big key to economic viability, and a major challenge, is properly scaling the size of operations, or having access to affordable co-packing services. Hand-crafted, value-added products may be feasible for small-scale growers to produce, but only reach a slim percentage of the public. For processed products to reach a wide market and be priced at a level that people are willing and able to afford, requires a proportional match between available raw product, labor costs, and the capacity of food processing infrastructure, which is difficult for local growers and processors to attain. The berry and dairy industries continue to be the most successful in producing and processing at an economically-viable scale because they have the necessary volume of raw product and access to processing facilities.

Competition with Large-Scale Domestic and Foreign Processors – There are large-scale food processors outside Whatcom County (e.g., NORPAC and Stahlbush Island Farms in Oregon) that have established economies of scale for producing frozen and canned foods. In addition, food processing has increasingly moved offshore to countries that have much lower labor costs and fewer regulations than U.S. processors. Whatcom County producers cannot currently compete with the prices of large-scale processors.

Competition with Large-Scale Food Distributors – As with food processing, the major distribution companies, such as Food Services of America, have created a level of infrastructure for distributing food that local distribution companies cannot yet offer cost-effectively on a smaller scale.
Customer Base – Market analysis is needed to determine whether there is an adequate number of people and institutions with the purchasing power in Whatcom County to support high-volume (i.e., cost-effective) processing and distribution facilities. If not, producers must be able to access markets along the I-5 corridor to generate adequate income.

CURRENT COLLABORATIONS:

Food Campus – The Whatcom Community Foundation and Bellingham Public Schools, along with several community organizations (e.g., Sustainable Connections, Bellingham Food Bank), are engaged in discussion and study to determine the feasibility of building a "food campus" with food processing capacity. The hypothetical food campus could also serve as a food business incubator, job training site, food hub, etc. designed to increase access to locally produced foods.

Puget Sound Food Hub Cooperative – In 2016, Northwest Agriculture Business Center (NABC) and farmers from Whatcom and Skagit County transitioned the Puget Sound Food Hub from NABC management to a farmer-owned cooperative (more below). NABC also works with producers to facilitate farmers' value-added product development and increase processing and distribution infrastructure in Whatcom County.

OPPORTUNITIES:

Creating Innovative Value-added Products – Creating new products to reach identified market niches is a way for small-scale processors to build potentially viable businesses. Examples: In 2014, Osprey Hill Farm opened Osprey Hill Butchery in Acme, a licensed facility for butchering chickens and turkeys; more recently, several local dairies have built cheese production facilities and shops for retail sales; and Cloud Mountain Farm Center has purchased equipment to significantly increase its production of salad greens while lowering production and processing costs.

Sharing Processing Facilities – The berry industry has well-developed processing facilities that may sit idle during months when berries are not in season. There is a possibility of adapting these facilities for vegetable processing for part of the year. Similarly, commercial kitchen spaces and processing equipment can be shared by multiple food businesses. Examples: The Dahlquist Kitchen is a fully-equipped commissary kitchen in Bellingham available for food businesses to rent; Bellingham Pasta Company and Evolve Chocolate share a production facility, and Cloud Mountain Farm Center is leasing farmland to graduates of its Farmer Internship Program as well as offering affordable rental of its facility for processing leafy greens.

Scaling-up Local Food Production – There is potential for local food producers to sell through major food distribution companies. This requires growers to increase production, attain food safety certifications, and produce consistent volumes of quality product.

Developing Cooperatives – The Puget Sound Food Hub Farmers' Cooperative provides 50+ member producers with marketing, sales, aggregation and distribution services. The PSFH has food storage, refrigerator and freezer space, several trucks, and an online ordering/payment system so that producers can spend more time growing food and less time with direct marketing. Island Grown Farmers Co-op provides USDA-inspected mobile animal slaughter services, and the North Cascades Meat Producers Co-op provides USDA-inspected mobile livestock slaughter and processing services, as well as a branded marketing and sales program.

Businesses Aggregating & Distributing Local Foods – Several businesses aggregate products from many farms and deliver to customers' homes (e.g., Acme Farms + Kitchen, Dandelion Organic, and Sound Harvest Delivery). There are new businesses popping up, like Fresh Plate, to meet the consumer demand for healthy, fresh, and convenient meals.

Using Volunteer Labor – County food banks already rely on volunteers for gleaning farm produce and food distribution. Given use of commercial kitchens, volunteers could process produce to increase access to fresh local foods through food banks and meal programs.

CONSUMPTION

This broad sector includes issues of food access and food supply for individuals, stores, restaurants, and institutions.

KEY DEVELOPMENTS:

- Visits to the Bellingham Food Bank have grown steadily while visits to the Whatcom County Food Banks have dropped slightly.
- Foothills Community Food Partnership developed a Foothills Food Access Plan.
- The East Whatcom Regional Resource Center in Maple Falls has begun building a new food bank to better serve the Foothills community.
- There has been a significant drop in participation in the Nutrition Program for Women Infants and Children (WIC).
- The Fresh Bucks Program was launched in 2015.
- Significant changes for Whatcom County grocery stores: Haggen is bought by Albertsons, Birchwood Albertsons closes, Bromley's Market in Sumas closes, IGA at Nugent's Corner closes, Whole Foods opens in Bellingham, and the Community Food Co-op launches its "Basics Program."
- Birchwood Food Security Working Group (aka "Birchwood Food Desert Fighters") formed to address the food desert created by the closure of Albertsons.
- WWU adopts Real Food Goal.
- The Northwest WA Chefs Collective was launched in 2014.
- The Harvest of the Month program, a Whatcom Farm to School initiative, was launched community-wide with the help of Sustainable Connections.
- Organic and local products have a well-established market that continues to grow.

KEY CHALLENGES:

For Organizations

- The federal budget negotiations happening at the time of this writing in 2017 threaten massive cuts to the Supplemental Nutrition Assistance Program (SNAP), the domestic hunger safety net on which nearly one in seven Washingtonians depend. School meals and many social services also are threatened with significant budget cuts, and proposals to use a state block grant structure, restrict eligibility, and reduce benefits.
- While the quantity of healthy, fresh, and local food available to food banks has increased over the past few years, availability of local produce is variable and seasonal. Some food banks lack the funding, infrastructure, and human resources to procure, store, and distribute much fresh food.

For Food Businesses

- Seasonal fluctuations in the availability of locally-grown produce require cooks and consumers to be flexible and adapt their expectations to the growing cycle. This is still a challenge for many chefs/restaurant owners.
- It requires additional work and expense for wholesale buyers (schools, grocery stores, restaurants) to purchase the locally-produced foods that they would like to provide to customers.

For the Public

- There is not equitable access to healthy food for our whole community.
- Low-income families may not have money to pay for the food they need, or cooking facilities, skills, or time to prepare healthy meals.
- While more and more people see the value of local agriculture, there is still a large segment of the population that does not understand the value of local food, or is not willing or able to pay higher prices for local food.
- There is no universal definition for the term local. It has been used in inconsistent and sometimes misleading ways. In addition, there is disagreement over how it should be defined both by the public and in many sectors.

CURRENT COLLABORATIONS

Whatcom Farm-to-School – All eight Whatcom school districts and many community organizations are working to increase the amount of fresh and local food served in schools, and to educate students and families about the value of healthy eating. School districts and several community organizations collaborate to produce and distribute education and outreach materials and facilitate activities for the Harvest of the Month program, highlighting a fruit/vegetable which grows locally each month. In 2017, Whatcom Farm to School became one of four organizations serving as a "Supporting Partner" to the Washington State Dept. of Agriculture, the National Farm to School (F2S) Network lead agency for Washington State. As a Supporting Partner, Whatcom Farm to School is helping to guide the formation of a statewide F2S network in order to increase coordination, communication, and collaboration among F2S programs across the state.

Foothills Community Food Partnership – The East Whatcom Regional Resource Center, Foothills Food Bank, Whatcom County Health Dept., Mt. Baker School District, and other partner organizations have developed a Foothills Food Access Plan and are implementing an array of strategies to increase access to fresh and local food for low-income residents in the Foothills region.

Twin Sisters Farmers Market is a collaborative of several small farms which formed in 2015 to serve the Foothills area. This mobile market operates in two locations in Whatcom County June-October.

Fresh Bucks – This program, funded by a USDA-FINI grant, is a partnership between the Opportunity Council; the Bellingham, Ferndale and Twin Sisters Farmers Markets; the Community Food Co-op; Sustainable Whatcom Fund of the Whatcom Community Foundation; Sustainable Connections; and the Whatcom County Health Department. Low-income participants' SNAP/ EBT (food stamps) funds are matched dollar for dollar up to $10 for produce purchases at farmers markets and the Community Food Co-op. Sustainable Connections provides community cooking classes (including Demo Days at the Market, educational cooking demonstrations featuring local produce items) in different locations from May-October.

Northwest WA Chef's Collective – This group of Whatcom County chefs was convened in 2014 by Sustainable Connections and meets regularly to share ideas for how to promote local farmers, fishers, and food producers. The Chef's Collective works on projects to educate the public about seasonal eating including Chef in the Market – monthly demonstrations at the Bellingham Farmers Market showing how to prepare simple delicious dishes showcasing local ingredients.

Food Bank Projects Increase Access to Fresh Produce – Food banks partner with local retailers and farmers to gather and distribute edible food that would otherwise go to waste. Bellingham Food Bank projects that increase low-income families' access to fresh produce include Small Potatoes Gleaning, in which volunteers gather surplus food from local farms; contracts with local growers to supply in-season produce; victory gardens; and the Garden Project, which builds home gardens and teaches families to grow their own food.

Food Bank - School District Food Pantry Partnership – Bellingham Food Bank is collaborating with Bellingham Public Schools to provide a school-based food pantry at Alderwood Elementary, and another for the Cordata community at Christ the King Church. Foothills Food Bank and Mt. Baker Schools are providing a winter and spring pantry in order to serve food-insecure residents in the Foothills area.

Eat Local First Collaborative Marketing Campaign - Sustainable Connections' Eat Local First (ELF) Campaign has expanded significantly over recent years, including dozens of local businesses who commit to increasing the amount of local food they source and participating in a collective marketing campaign that reaches thousands of people each year. ELF seeks to raise consumers' awareness of the positive impacts of local food purchasing on the economy, environment, and food security of our region and includes activities such as Eat Local Month and the Whatcom Farm Tour.

Birchwood Food Security Working Group – When Albertsons closed its store in the Birchwood neighborhood in May 2016, Jobs with Justice surveyed 300 households in Birchwood (in English and Spanish) about where they shop, how they access current grocery stores, and what the impact on the community has been with the loss of Albertsons. Community to Community and the Racial Justice Coalition are working with The Birchwood Food Desert Fighters, a group that includes senior citizens, low-income and disabled residents of the Birchwood Neighborhood, to address the food insecurity created by the exit of the Albertsons store.

Good and Cheap Cooking Classes – The United Way of Whatcom County, Whatcom Community College, and the Community Food Co-op have developed a class series based on the Good and Cheap cookbook for people experiencing food insecurity, as well as those who are not.

Farm Fresh Workplaces – Sustainable Connections facilitates arrangements between farms and local businesses in which employees can purchase a Community Supported Agriculture (CSA) share, and have boxes of fresh produce delivered from the farm directly to their workplace each week during the harvest season. Some businesses subsidize the cost of CSA shares as part of their employee wellness program. Recently they have begun focusing on helping large local organizations, like St. Joseph Hospital, sign up for workplace CSA's.

OPPORTUNITIES

Whatcom County Comprehensive Plan – New language in the Economics section of the "Comp Plan" recommends development of a Whatcom County Food System Plan to grow the health and vitality of the local food system. A Whatcom Food Network committee is taking the first steps, working with key stakeholders to develop a Food System Framework for a plan to be shared with City and County Councils.

Education and Outreach to Encourage Healthy Eating – Many local organizations are expanding their education and outreach activities to encourage healthy eating. These include: SNAP-Ed; Common Threads' school gardening and cooking lessons; the Community Food Co-op, which produced the Real Food Show that travels to schools and events; and Sustainable Connections, which offers local food cooking demos and food education in the Bellingham Farmers Market.

Bellingham School District Central Kitchen – A Bellingham School District Bond passed in 2013 is funding development of a central kitchen with increased capacity for cooking with fresh local foods. The kitchen, which is scheduled for completion in 2019, will serve the district and potentially other institutional buyers.

School Meals and Snacks – There are many sources of federal funding for institutional meal programs (though cuts to this funding are a real possibility with the next federal budget). Locally, school districts have been expanding their use of federal funding to offer additional meals and snacks in schools with the highest percentages of low-income students. For example, Lummi Nation School provides free breakfast and lunch for all students, and the Bellingham district has added free breakfast in the classroom to all students in Bellingham's six Title I schools, as well as a dinner program at Shuksan Middle School.

Focus on healthy eating environments and social justice – There is a growing understanding, and education and outreach around how changes to the social environment can have long-term impacts on eating behavior and community health, with the Whatcom County Health Department undertaking an intentional shift in this direction.

New Food Bank Infrastructure – East Whatcom Regional Resource Center in Maple Falls is building a new food bank to better serve the Foothills community.
Expand County Farmers Markets – There is an opportunity and need to grow county farmers markets to serve more low-income and under served communities. Mobile farmers markets, such as Twin Sisters Market, are another way to bring fresh produce to people living in the county's food deserts.

WWU adopts Real Food Goal – In 2016, administrators and student food activists at Western Washington University agreed to the goal of having the university spend at least 25% of its dining hall food budget on locally-sourced, sustainable farm products by 2020. The commitment is part of a nationwide Real Food Challenge to shift $1 billion of university food budgets by 2020 to local farms that raise food in environmentally sound ways, treat workers fairly, and are humane to animals.

Increased affordability – The Community Food Co-op has launched the Basics Program, increasing the number of lower-priced items for sale, as part of a collective endeavor with National Cooperative Grocers to offer a wider range of affordably-priced products.

Connecting local growers and local food buyers – Local groups are working to connect food buyers with local food producers, including Sustainable Connections which offers one on one marketing consultation for food businesses, organized the annual Farm to Table Trade Meeting, the largest food and farm business conference north of Seattle, the Chefs Collective which hosts farmer/chef connection events, and Whatcom Farm to School.

WASTE

KEY DEVELOPMENTS:

- In January 2015, the City of Bellingham renewed its contract with Sanitary Service Company (SSC) for the collection and hauling of residential waste.
- There has been slow but steady growth of SSC's FoodPlus! Program.
- Sustainable Connections received a USDA grant and will launch the Toward Zero Waste Food Redistribution Initiative.
- Sustainable Connections' Toward Zero Waste Campaign surpassed the 500 business mark, helping hundreds of businesses decrease waste across Whatcom County.
- In 2016, Whatcom County updated the Solid and Hazardous Waste Management Plan.
- Nooksack Valley Recycling stops accepting commercial recycling in certain areas of Whatcom County
- The Whatcom Conservation District obtained a Resource Conservation Partnership Program grant to fund emerging waste treatment processes on farms resulting in a pilot of the Janicki Corp. Omni Processor which has potential to process cow manure into energy, fertilizer, and clean water.

KEY CHALLENGES:

Increase in Wasted Food/Organic Waste – The EPA estimates that more food reaches landfills and incinerators than any other single material in our waste stream. Organic waste makes up more than half of the content in our community's waste stream. The "all you can eat" mentality in our country is resulting in a lot of waste of prepared foods through buffets, grocery store outlets, delis, etc. There are many challenges to reducing and composting this waste.

- **Regulations** – Some regulations in place to protect food safety and promote good nutrition also lead to food waste. Examples: Health Department (food safety) rules restrict recovery of prepared food beyond the 1.5 hour hold time, after which it must be discarded; USDA School Food Guidelines require specific portions and categories of foods be served to children who get school meals, even if the students do not want to consume those items (e.g., milk, fruits, vegetables).
- **Food service businesses** are reluctant to implement waste-reduction measures and/or use food composting services due to the following concerns:
  - **Labor costs** for training employees in businesses with high turnover
  - **Hesitancy to reduce meal portion sizes** out of fear of jeopardizing customer satisfaction
  - **A small return on investment** – Savings from trash reduction are fairly small since food waste is dense and does not account for much volume in dumpsters.

Shifts in residential waste disposal have reduced incentives for renters to use recycling/food composting.

- In the past, triple net lease agreements required renters to pay a proportional amount of utilities which created an incentive for tenants to save money by recycling and composting. Flat rate fees are now more common, reducing the incentive for tenants to engage in these programs.
- Updated building codes require "approved garbage enclosures" and older buildings may not have enough space to accommodate several cans for separating organics and other waste.

Contamination – A major challenge in composting food waste is that it frequently is contaminated with non-compostable items (e.g., plastic packaging or utensils mixed in with food). Adding to the contamination problem are items labeled as compostable that cannot actually be composted in local facilities.

Challenges with Collection Services – Curbside collection of organic waste is not available in some of the rural areas of eastern Whatcom County for residents, and collection of recycling is not available in some areas of the County as well.

Tax breaks for food donations don't benefit small-scale farmers – Current tax code provides a tax break for large-scale farms/food producers for donations of food to charitable organizations. The same benefit does not apply to small-scale farmers so there is less incentive to donate.

Agricultural Plastics – Some farmers rely on a large variety and amount of plastic products on the farm including seed trays, drip tape, mulch film, water pipes, and hoop house covers. There is currently no way to recycle these products and it must go to the landfill.

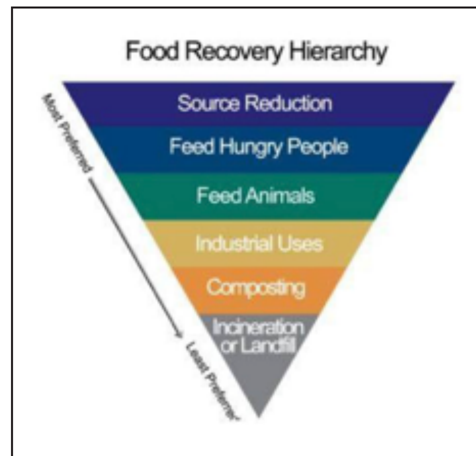
CURRENT COLLABORATIONS

Commercial Waste Reduction Education and Technical Assistance – Whatcom County has provided funding for a collaborative group of organizations to support waste reduction through technical assistance and education for three audiences: Sustainable Connections and Sanitary Service Company (SSC) provide technical assistance, audits, and education for commercial businesses; WSU's Master Composter/Recycler program provides adult composting and recycling education, and RE Sources' Sustainable Schools program provides youth education and technical assistance for schools.

Solid Waste Advisory Committee (SWAC) – The committee consists of a minimum of nine members representing a balance of interests including, but not limited to citizens, public interest groups, business, the waste management industry, and local elected public officials.

OPPORTUNITIES

Education and outreach – The first step in the Food Recovery Hierarchy is reducing waste that is generated. Large and long-term educational campaigns are emerging to change the culture around food waste. However, continued efforts to raise awareness are needed to reduce organic material/food waste from the waste stream.



- Food waste audits – Conducting waste audits for businesses, schools, and restaurants will help them understand what and how much food goes into the waste stream. Encouraging employee retraining, menu planning adjustments, and policy changes will prevent up-stream waste in the food service sector.
- Reducing use of packaged food – There is an opportunity to educate consumers about choosing food items that have minimal packaging (e.g., avoiding single-serving items, buying in bulk, choosing recyclable packaging).
- **Toward Zero Waste Campaign** – This campaign, run by Sustainable Connections, has been well-established for many years. It offers free technical assistance to Whatcom County businesses, events, and organizations, including Whatcom County Public Schools. In 2017, the campaign surpassed 500 businesses served and also began a Toward Zero Waste campaign in schools.

Toward Zero Waste Food Redistribution Initiative – Feeding hungry people is the second tier in the food recovery hierarchy. The Food Redistribution Initiative (FRI) is a new educational campaign and food waste diversion program that will be launched by Sustainable connections in 2018 and is funded by the Department of Ecology. The goal of FRI is to divert more than 40,000 pounds of prepared food that restaurants and event services currently send to the landfill each year and redistribute it to organizations serving hot meals.

Creating energy and other products from waste – In the region, Farm Power Northwest has established a working anaerobic manure digester (biodigester) that turns cow manure into electricity and fertilizer free of pathogens and odor. The Lynden plant generates 750 kilowatts/ hour – enough electricity to power 500 homes as well as heat a 3.5 acres greenhouse. The Janicki Omni Processor is a machine designed to process fecal waste in an environmentally-sound way. There is potential to use this technology to process cow manure into energy, fertilizer, and clean water. Pilot testing is underway.

Small-scale anaerobic digesters. There is potential to adapt digester technology for use by restaurants, cafeterias, breweries, distilleries, wineries, livestock, and crop farms to help manage organic waste onsite while generating renewable energy, organic fertilizer, and soil enhancing inputs. This would allow recycled organic matter to be returned to the soil as sequestered carbon close to home. Currently, technological challenges, rules, and regulations present barriers to realizing this potential (e.g., WAC section 173-350-250 rules that post-consumer organic waste is not allowed in anaerobic digesters).

Residential. Property managers could be approached about changing the language in rental leases to facilitate waste reduction and proper waste disposal.

Ugly Food Campaign - Vast quantities of edible but "less than perfect" fruit and vegetables get culled before market. Campaigns to use cosmetically-imperfect produce are emerging to increase awareness and desirability for "ugly produce."

Appendix

A. KEY INFORMANT INTERVIEW QUESTIONS & METHODOLOGY

Key informants were asked to respond to the following questions:

1. Organizational Goals & Strategies

a. What food system issues are you trying to work on? What changes are you trying to make? Impacts you're trying to have?

b. What does success look like? What are you striving toward? What indicators do you use to measure success?

c. What do you think is working well for you? The most promising practices, projects, or activities?

d. What other current practices, projects, or activities that other organizations in this food system sector are working on might be important for us to know about?

2. Key Partners

a. Which organizations or individuals do you work with most closely in the food system?

b. Have there been any important collaborative projects within your food system sector over the past three years? Please describe.

3. Emerging Issues & Opportunities

a. What are some emerging issues in your sector of the food system?

b. What are the biggest upcoming or current opportunities that you know about in this sector?

4. What has changed in your sector since the 2013 CFA Report?

a. Positively?

b. Negatively?

5. Gaps in the Food System

a. What unmet needs, challenges, or barriers do you see in this sector of the food system?

i. Individual needs, organizational needs, data gaps, lack of activities focused on particular goals.

6. Important Resources

a. Are there plans/documents in place which Whatcom County organizations like yours are using to guide food system work?

b. Are there internal organizational plans/documents that guide your work?

c. Are there resources/documents/reports you have produced or that you are aware of that are particularly helpful in your work or that you think may be of value to others working toward related goals?

i. Would you be willing to share some or all of these?

A Western Washington University Anthropology Department graduate student conducted ten semi-structured interviews between August 2016 and April 2017. Two more interviews were conducted by Whatcom Food Network Community Food Assessment Update Subcommittee members. Each interview ranged from approximately 45-75 minutes in length. Eleven of the interviews were conducted in-person at the respondent's place of work or another convenient location. One interview was conducted over the phone.

Seven interviews were audio-recorded and then professionally transcribed. Next, these transcriptions were returned to the interviewees for review. Once approved by the interviewees, these 18 to 24-page transcribed interviews were distilled into short summaries. These interview summaries were then sent to the interviewee for approval.

For the interviews that were not audio-recorded, the interviewer typed notes as the respondent talked. These notes were then used to write the interview summary, which followed the same protocol as the transcribed interview reports. This process was conducted in accordance with Western Washington University's IRB rules and guidelines. Once the interviewee granted approval, the summary reports were shared with the CFA Subcommittee.

B. PARTICIPANTS

Key Informants Interviewed for this Report

- George Boggs, Executive Director of Whatcom Conservation District: LAND
- Sue Blake, Water Resource Educator of WSU Whatcom County Extension: WATER
- Mike Finger, Owner of Cedarville Farm, President of Puget Sound Food Hub, Board Member of Bellingham Farmer's Market: FARMING
- Chris Benedict, Agricultural Agent of WSU Whatcom County Extension: FARMING
- Pete Granger, Washington Sea Grant Seafood Industry Specialist and commercial fisherman: FISHING
- Kristen Beifus, Community Organizer UFCW 21: LABOR
- Clayton Burrows, Executive Director of Growing Washington: PROCESSING/DISTRIBUTION
- Jeff Voltz, Project Manager of Northwest Agriculture Business Center: PROCESSING/DISTRIBUTION
- Astrid Newell, Community Health Manager of Whatcom County Health Department: CONSUMPTION, Food Access/Security
- Jim Ashby, General Manager of Bellingham Food Co-op: CONSUMPTION, Wholesale/Retail
- Rodd Pemble, Recycling Manager of Sanitary Services Company: WASTE
- Mark Peterson, Sustainable Business Manager of Sustainable Connections: WASTE

Groundtruthing Groups & Individuals That Reviewed Sector Summaries:

- Whatcom County Purchase of Development Rights Oversight Committee (PDROC): LAND
- Whatcom County Ag. Water Board: WATER
- Co-op Farm Fund Committee: FARMING
- Whatcom County Ag. Advisory Committee: FARMING
- Whatcom Family Farmers: FARMING & LABOR
- Marine Resources Committee: FISHING
- Community to Community Development: LABOR
- Anna Martin, Osprey Hill Farm: LABOR
- Executive Chef Christy Fox, northwater Restaurant: LABOR
- Puget Sound Food Hub Board: PROCESSING/ DISTRIBUTION
- Anti-Hunger Coalition: CONSUMPTION, Food Access/ Security
- Northwest WA Chef's Collective: CONSUMPTION, Wholesale/Retail
- Solid Waste Advisory Committee: WASTE

Whatcom Food Network Steering Committee Members (Past & Present) Who Reviewed CFA:

- Karin Beringer, Whatcom County Planning Department
- Karlee Deatherage, RE Sources for Sustainable Communities
- Chris Elder, Whatcom County Planning Department
- Pete Granger, SeaGrant
- Rosalinda Guillen, Community to Community Development
- Kent Kok, Community to Community Development
- Melissa Morin, Whatcom County Health Department
- Holly O'Neil, Evergreen Land Trust
- Adrienne Renz, Community Food Co-op
- Laura Ridenour, LMR Consulting
- Diane Smith, WSU Extension
- Lisa Sohni, Opportunity Council
- Mardi Solomon, Whatcom Farm to School
- Sara Southerland, Sustainable Connections
- Caprice Teske, Bellingham Farmers Market
- Cheryl Thorton, Cloud Mountain Farm Center
- Jeff Voltz, NABC

Extraordinary Community Partner Reviewers

- Hank Kastner
- Jennifer Moon

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References

"2012 State and County Profiles | 2012 Census of Agriculture | USDA/NASS." n.d. Accessed October 1, 2020. https://www.nass.usda.gov/Publications/AgCensus/2012/Online_Resources/County_Profiles/.

Aday, Serpil, and Mehmet Seckin Aday. n.d. "Impacts of COVID-19 on Food Supply Chain." *Food Quality and Safety*. Accessed September 22, 2020. https://doi.org/10.1093/fqsafe/fyaa024.

Altieri, Miguel A., Fernando R. Funes-Monzote, and Paulo Petersen. 2012. "Agroecologically Efficient Agricultural Systems for Smallholder Farmers: Contributions to Food Sovereignty." *Agronomy for Sustainable Development* 32 (1): 1–13. https://doi.org/10.1007/s13593-011-0065-6.

Altieri, Miguel A., and Victor Manuel Toledo. 2011. "The Agroecological Revolution in Latin America: Rescuing Nature, Ensuring Food Sovereignty and Empowering Peasants." *Journal of Peasant Studies* 38 (3): 587–612. https://doi.org/10.1080/03066150.2011.582947.

Altieri, Miguel A., Clara I. Nicholls, Alejandro Henao, and Marcos A. Lana. 2015. "Agroecology and the Design of Climate Change-Resilient Farming Systems." *Agronomy for Sustainable Development* 35 (3): 869–90. https://doi.org/10.1007/s13593-015-0285-2.

Ames, Bruce N., and Bruce N. Ames. 2010. "Prevention of Mutation, Cancer, and Other Age-Associated Diseases by Optimizing Micronutrient Intake, Prevention of Mutation, Cancer, and Other Age-Associated Diseases by Optimizing Micronutrient Intake." *Journal of Nucleic Acids, Journal of Nucleic Acids* 2010, 2010 (September): e725071. https://doi.org/10.4061/2010/725071, 10.4061/2010/725071.

Beck, Sam, and Carl A. Maida. 2015. *Public Anthropology in a Borderless World*. Berghahn Books.

"Bellingham Food Bank." n.d. Bellingham Food Bank. Accessed October 1, 2020. https://www.bellinghamfoodbank.org/.

Bellingham, Visit. n.d. "Agriculture - Bellingham Whatcom County Tourism." *Https://Www.Bellingham.Org/* (blog). Accessed October 1, 2020. https://www.bellingham.org/things-to-do/farms-agriculture/.

Bellows, Anne C., and Michael W. Hamm. 2003. "International Effects on and Inspiration for Community Food Security Policies and Practices in the USA." *Critical Public Health* 13 (2): 107–23. https://doi.org/10.1080/0958159031000097652.

Bernard, H. Russell. 2017. *Research Methods in Anthropology: Qualitative and Quantitative Approaches*. Rowman & Littlefield.

Betts, Richard A., Lorenzo Alfieri, Catherine Bradshaw, John Caesar, Luc Feyen, Pierre Friedlingstein, Laila Gohar, et al. 2018. "Changes in Climate Extremes, Fresh Water Availability and Vulnerability to Food Insecurity Projected at 1.5°C and 2°C Global Warming with a Higher-Resolution Global Climate Model." *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences* 376 (2119): 20160452. https://doi.org/10.1098/rsta.2016.0452.

Bjornson, Marie. n.d. "Birchwood." *Move to Bellingham* (blog). Accessed November 30, 2020. https://movetobellingham.net/neighborhoods/birchwood/.

Borras, Arnel M., and Faisal Ali Mohamed. 2020. "Health Inequities and the Shifting Paradigms of Food Security, Food Insecurity, and Food Sovereignty." *International Journal of Health Services* 50 (3): 299–313. https://doi.org/10.1177/0020731420913184.

Botreau, Hélène, and Marc J. Cohen. 2019. *Ten Years After the Global Food Price Crisis, Rural Women Still Bear the Brunt of Poverty and Hunger*. Oxfam. https://oxfamilibrary.openrepository.com/handle/10546/620708.

Burchi, Francesco, Jessica Fanzo, and Emile Frison. 2011. "The Role of Food and Nutrition System Approaches in Tackling Hidden Hunger." *International Journal of Environmental Research and Public Health* 8 (12): 358–73. https://doi.org/10.3390/ijerph8020358.

Burrows, Colleen, and Drew Betz. 2011. *Whatcom County Community Food Assessment*. WSU Whatcom County Extensions. Retrieved from http://whatcom. wsu. edu/ag/cfa. http://whatcom.wsu.edu/ag/cfa/docs/CFA2011/CommunityFoodAssessment_all_v7.pdf.

Cabalda, Aegina B., Pura Rayco-Solon, Juan Antonio A. Solon, and Florentino S. Solon. 2011. "Home Gardening Is Associated with Filipino Preschool Children's Dietary Diversity." *Journal of the American Dietetic Association* 111 (5): 711–15. https://doi.org/10.1016/j.jada.2011.02.005.

Campling, Liam, and Jens Lerche. 2016. "Introduction to the Special Issue The Political Economy of Agrarian Change: Essays in Appreciation of Henry Bernstein." *Journal of Agrarian Change* 16 (3): 365–369. https://doi.org/10.1111/joac.12180.

Christian, Parul, and Christine P. Stewart. 2010. "Maternal Micronutrient Deficiency, Fetal Development, and the Risk of Chronic Disease." *The Journal of Nutrition* 140 (3): 437–45. https://doi.org/10.3945/jn.109.116327.

Clendenning, Jessica, Wolfram H. Dressler, and Carol Richards. 2016. "Food Justice or Food Sovereignty? Understanding the Rise of Urban Food Movements in the USA." *Agriculture and Human Values* 33 (1): 165–77. https://doi.org/10.1007/s10460-015-9625-8.

"Comprehensive Plan | Whatcom County, WA - Official Website." n.d. Accessed October 1, 2020. https://www.whatcomcounty.us/887/Comprehensive-Plan.

Crush, Jonathan S., and G Bruce Frayne. 2011. "Urban Food Insecurity and the New International Food Security Agenda." *Development Southern Africa* 28 (4): 527–44. https://doi.org/10.1080/0376835X.2011.605571.

Declaration of Restrictions and Grant of Easements. 1982. #146 Bellingham, Bellingham WA.

DeLind, Laura B. 2002. "Place, Work, and Civic Agriculture: Common Fields for Cultivation." *Agriculture and Human Values* 19 (3): 217–24. http://link.springer.com/journal/volumesAndIssues/10460.

Eigenbrod, Christine, and Nazim Gruda. 2015. "Urban Vegetable for Food Security in Cities. A Review." *Agronomy for Sustainable Development* 35 (2): 483–98. https://doi.org/10.1007/s13593-014-0273-y.

Elmes, Michael B. 2018. "Economic Inequality, Food Insecurity, and the Erosion of Equality of Capabilities in the United States." *Business & Society* 57 (6): 1045–74. https://doi.org/10.1177/0007650316676238.

Fields, Scott. 2004. "The Fat of the Land: Do Agricultural Subsidies Foster Poor Health?" *Environmental Health Perspectives* 112 (14): A820–23.

Fletcher, Fay, Brent Hammer, and Alicia Hibbert. 2019. "'We Know We Are Doing Something Good, But What Is It?': The Challenge of Negotiating Between Service Delivery and Research in a CBPR Project." *Journal of Community Engagement and Scholarship* 7 (2). https://digitalcommons.northgeorgia.edu/jces/vol7/iss2/3.

Food and Agriculture Organization of the United Nations. 2001. *The State of Food and Agriculture 2001*. Rome, Italy: FAU.

———. 2013. *Food Security and Sovereignty*. http://www.fao.org/3/a-ax736e.pdf.

Freeman, Richard, and Jo Maybin. 2011. "Documents, Practices and Policy." *Evidence & Policy: A Journal of Research, Debate and Practice* 7 (2): 155–70. https://doi.org/10.1332/174426411X579207.

Giordano, Thierry; Taylor, Katrin; Touadi, Jean-Leonard. n.d. "URBAN FOOD POLICIES – SHARING FOOD SYSTEM INNOVATIONS THROUGH DECENTRALIZED COOPERATION IN AFRICA | JUNCO | Journal of UNiversities and international development COoperation." Accessed September 22, 2020. https://www.ojs.unito.it/index.php/junco/article/view/2159.

Goldin, Alan, Fieldwork Alan Goldin, Barry Strickler, Sanderson Page, Dennis Robinson, Roger Stark, Andrew Card, and Reed Young. n.d. "Whatcom County Area, Washington," 316.

Guercan, Efe Can. 2014. "Cuban Agriculture and Food Sovereignty Beyond Civil-Society-Centric and Globalist Paradigms." *Latin American Perspectives* 41 (4): 129–46. https://doi.org/10.1177/0094582X13518750.

Harper, Alethea, Annie Shattuck, Eric Holt-Giménez, Alison Alkon, and Frances Lambrick. 2009. "Food Policy Councils: Lessons Learned." *Institute for Food and Development Policy*, 1–63.
Harrison, Gail G., and others. 2010. "Public Health Interventions to Combat Micronutrient Deficiencies." *Public Health Rev* 32: 256–266.
Hendrickson, Mary K, Philip H Howard, and Douglas H Constance. n.d. "Power, Food and Agriculture:," 56.
Holt-Giménez, Eric. 2015. "Racism and Capitalism: Dual Challenges for the Food Movement." *Journal of Agriculture, Food Systems, and Community Development*, March, 23–25. https://doi.org/10.5304/jafscd.2015.052.014.
Horwitz, Leora I., Carol Chang, Harmony N. Arcilla, and James R. Knickman. 2020. "Quantifying Health Systems' Investment In Social Determinants Of Health, By Sector, 2017–19." *Health Affairs* 39 (2): 192–98. https://doi.org/10.1377/hlthaff.2019.01246.
Ikerd, John E. 2011. "Local Food: Revolution and Reality." *Journal of Agricultural & Food Information* 12 (1): 49–57. https://doi.org/10.1080/10496505.2011.540557.
Iriart, Celia, Blake Boursaw, Gabriela P. Rodrigues, and Alexis J. Handal. 2013. "Obesity and Malnutrition among Hispanic Children in the United States: Double Burden on Health Inequities." *Revista Panamericana De Salud Publica-Pan American Journal of Public Health* 34 (4): 235–43.
Juby, Cindy, and Erika Elizabeth Meyer. 2011. "Child Nutrition Policies and Recommendations." *Journal of Social Work* 11 (4): 375–86. https://doi.org/10.1177/1468017310379451.
Kato, Yuki. 2013. "Not Just the Price of Food: Challenges of an Urban Agriculture Organization in Engaging Local Residents." *Sociological Inquiry* 83 (3): 369–91. https://doi.org/10.1111/soin.12008.
Kau, Andrew L., Philip P. Ahern, Nicholas W. Griffin, Andrew L. Goodman, and Jeffrey I. Gordon. 2011. "Human Nutrition, the Gut Microbiome and the Immune System." *Nature* 474 (7351): 327–36. https://doi.org/10.1038/nature10213.
Laborde, David, Will Martin, Johan Swinnen, and Rob Vos. 2020. "COVID-19 Risks to Global Food Security." *Science* 369 (6503): 500. https://doi.org/10.1126/science.abc4765.
Leib, Broad, and Emily Michele. 2013. "All (Food) Politics Is Local: Increasing Food Access through Local Government Action." https://dash.harvard.edu/handle/1/11189975.
Lewis, Kirsty. 2017. "Understanding Climate as a Driver of Food Insecurity in Ethiopia." *Climatic Change* 144 (2): 317–28. https://doi.org/10.1007/s10584-017-2036-7.
Liddiard, Rob, Baboo (Lesh) Gowreesunker, Catalina Spataru, Julia Tomei, and Gesche Huebner. 2017. "The Vulnerability of Refrigerated Food to Unstable Power Supplies." *Energy Procedia*, Proceedings of 1st International Conference onSustainable Energy and Resource Use in Food ChainsincludingSymposium on Heat Recovery and Efficient Conversion and Utilisation of Waste HeatICSEF 2017, 19-20 April 2017, Windsor UK, 123 (September): 196–203. https://doi.org/10.1016/j.egypro.2017.07.238.
McMichael, Philip. 2012. "The Land Grab and Corporate Food Regime Restructuring." *The Journal of Peasant Studies* 39 (3–4): 681–701. https://doi.org/10.1080/03066150.2012.661369.
Michael Rosset, Peter, Braulio Machin Sosa, Adilen Maria Roque Jaime, and Dana Rocio Avila Lozano. 2011. "The Campesino-to-Campesino Agroecology Movement of ANAP in Cuba: Social Process Methodology in the Construction of Sustainable Peasant Agriculture and Food Sovereignty." *Journal of Peasant Studies* 38 (1): 161–91. https://doi.org/10.1080/03066150.2010.538584.
Minkler, M. 2000. "Using Participatory Action Research to Build Healthy Communities." *Public Health Reports* 115 (2–3): 191–97.
Miterko, Peter, and Sean Bruna. 2020. "Resident Identified Strengths and Challenges of Project-Based Permanent Supportive Housing Program Implementation in a Small Metropolitan County." *Housing and Society* 0 (0): 1–22. https://doi.org/10.1080/08882746.2020.1818049.
Mithun Ali, Syed, Md. Abdul Moktadir, Golam Kabir, Jewel Chakma, Md. Jalal Uddin Rumi, and Md. Tawhidul Islam. 2019. "Framework for Evaluating Risks in Food Supply Chain: Implications in

Food Wastage Reduction." *Journal of Cleaner Production* 228 (August): 786–800. https://doi.org/10.1016/j.jclepro.2019.04.322.
Mooney, Patrick H., Keiko Tanaka, and Gabriele Ciciurkaite. 2014. "Food Policy Council Movement in North America: A Convergence of Alternative Local Agrifood Interests?" In *Alternative Agrifood Movements: Patterns of Convergence and Divergence*, 21:229–55. Research in Rural Sociology and Development. Emerald Group Publishing Limited. https://doi.org/10.1108/S1057-192220140000021023.
Morgan, Kevin. 2015. "Nourishing the City: The Rise of the Urban Food Question in the Global North." *Urban Studies* 52 (8): 1379–94. https://doi.org/10.1177/0042098014534902.
Muthayya, Sumithra, Jee Hyun Rah, Jonathan D Sugimoto, Franz F Roos, Klaus Kraemer, and Robert E Black. 2013. "The Global Hidden Hunger Indices and Maps: An Advocacy Tool for Action." *Plos One* 8 (6): e67860–e67860. https://doi.org/10.1371/journal.pone.0067860.
Nader, Laura. 1972. "Up the Anthropologist: Perspectives Gained from Studying Up." http://eric.ed.gov/?id=ED065375.
NOAA Temperature and Precipitation data for Bellingham WA. Retrieved June 6, 2016. http://w2.weather.gov/climate/xmacis.php?wfo=sew
Orsini, Francesco, Remi Kahane, Remi Nono-Womdim, and Giorgio Gianquinto. 2013. "Urban Agriculture in the Developing World: A Review." *Agronomy for Sustainable Development* 33 (4): 695–720. https://doi.org/10.1007/s13593-013-0143-z.
"Overview - Journal of Agrarian Change." n.d. Wiley Online Library. Accessed September 30, 2020. https://doi.org/10.1111/(ISSN)1471-0366.
Poulsen, Melissa N., Kristyna R. S. Hulland, Carolyn A. Gulas, Hieu Pham, Sarah L. Dalglish, Rebecca K. Wilkinson, and Peter J. Winch. 2014. "Growing an Urban Oasis: A Qualitative Study of the Perceived Benefits of Community Gardening in Baltimore, Maryland." *Culture, Agriculture, Food & Environment* 36 (2): 69–82. https://doi.org/10.1111/cuag.12035.
Poulsen, Melissa N., Philip R. McNab, Megan L. Clayton, and Roni A. Neff. 2015. "A Systematic Review of Urban Agriculture and Food Security Impacts in Low-Income Countries." *Food Policy* 55 (August): 131–46. https://doi.org/10.1016/j.foodpol.2015.07.002.
Riches, Graham. 2002. "Food Banks and Food Security: Welfare Reform, Human Rights and Social Policy. Lessons from Canada?" *Social Policy & Administration* 36 (6): 648–663. https://doi.org/10.1111/1467-9515.00309.
Scherb, Allyson, Anne Palmer, Shannon Frattaroli, and Keshia Pollack. 2012. "Exploring Food System Policy: A Survey of Food Policy Councils in the United States." *Journal of Agriculture, Food Systems, and Community Development* 2 (4): 3–14. https://doi.org/10.5304/jafscd.2012.024.007.
Soffiantini, Giulia. 2020. "Food Insecurity and Political Instability during the Arab Spring." *Global Food Security* 26 (September): 100400. https://doi.org/10.1016/j.gfs.2020.100400.
Spradley, James P. 1980. *Doing Participant Observation: Making an Ethnographic Record. Making Descriptive Observation*. Step.
Stoecker, Randy. 2012. *Research Methods for Community Change: A Project-Based Approach*. SAGE Publications.
Tim Wheeler, Joachim Von Braun. 2013. "Climate Change Impacts on Global Food Security." August 2013. http://www.sciencemag.org/content/341/6145/508.full.
Torrez, Faustino. 2011. "La Via Campesina: Peasant-Led Agrarian Reform and Food Sovereignty." *Development* 54 (1): 49–54. https://doi.org/10.1057/dev.2010.96.
Troesch, Barbara, Hans K. Biesalski, Rolf Bos, Erik Buskens, Philip C. Calder, Wim H. M. Saris, Joerg Spieldenner, Henkjan J. Verkade, Peter Weber, and Manfred Eggersdorfer. 2015. "Increased Intake of Foods with High Nutrient Density Can Help to Break the Intergenerational Cycle of Malnutrition and Obesity." *Nutrients* 7 (7): 6016–37. https://doi.org/10.3390/nu7075266.
"U.S. Census Bureau QuickFacts: Whatcom County, Washington; Bellingham City, Washington; Washington." n.d. Accessed September 30, 2020.

https://www.census.gov/quickfacts/fact/table/whatcomcountywashington,bellinghamcitywashington,WA/PST045219?
"USDA ERS - Documentation." n.d. Accessed October 1, 2020. https://www.ers.usda.gov/data-products/food-access-research-atlas/documentation.aspx#definitions.
Washington State Food System Roundtable Prospectus. 2015. "Washington State Food System Roundtable Prospectus." https://static1.squarespace.com/static/58b5cd633a0411613ccafc75/t/59824dea9f74561e646b9cf1/1501711853847/WA_FS_Prospectus_072417_FINAL.pdf.
Washington State University. n.d. "Photo of Agriculture in Whatcom County." http://whatcom.wsu.edu/ag/.
Weatherspoon, Dave D, Shelly Ver Ploeg, and Paula Dutko. 2012. "An Evaluation of Food Deserts in America," 21.
Werkheiser, Ian, and Samantha Noll. 2014. "From Food Justice to a Tool of the Status Quo: Three Sub-Movements Within Local Food." *Journal of Agricultural and Environmental Ethics* 27 (2): 201–10. https://doi.org/10.1007/s10806-013-9459-6.
"Whatcom Food Network." n.d. *Whatcom Food Network* (blog). Accessed October 1, 2020. https://whatcomfoodnetwork.org/.
Whitley, Sarah. 2013. "Changing Times in Rural America: Food Assistance and Food Insecurity in Food Deserts." *Journal of Family Social Work* 16 (1): 36–52. https://doi.org/10.1080/10522158.2012.736080.
"WHO | WHO and FAO Announce Second International Conference on Nutrition (ICN2)." n.d. WHO. World Health Organization. Accessed October 1, 2020. https://www.who.int/nutrition/topics/WHO_FAO_ICN2_videos_hiddenhunger/en/.
Windfuhr, Michael. 2005. *Food Sovereignty: Towards Democracy in Localized Food Systems*. Practical Action Working Papers. Rugby, Warwickshire, UK: ITDG Pub.
Wittman, Hannah, Annette Desmarais, and Nettie Wiebe. 2010. "The Origins and Potential of Food Sovereignty." *Food Sovereignty: Reconnecting Food, Nature and Community*, 1–14.
Wortman, Sam E., and Sarah Taylor Lovell. 2013. "Environmental Challenges Threatening the Growth of Urban Agriculture in the United States." *Journal of Environmental Quality* 42 (5): 1283–94. https://doi.org/10.2134/jeq2013.01.0031.
Wright, Susan. 2004. *The Anthropology of Organizations*. Routledge.