

Taking Action to Re-Localise the Global Food System: If Not Now, When?

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Abstract

This dissertation reports on a three-year participatory action research (PAR) initiative aimed at re-localising the food system in a specific locale in Canada. It describes the process from theory to practice of building leadership and collaboration across the food sector—farming, fishing, processing, grocery, restaurant, institutional, policy, and investment—aimed at systematically developing a local food short supply chain. Emboldened by the immediacy of the intersection of a persistent pandemic with the climate crisis, participants are using an interdisciplinary lens to create a local food system based on a values proposition that takes the attributes of physicality, relationships, and scalability into account. In this context, the author suggests that locale is what matters most in considering what “local” means within the food system. Framed in critical social theory, this research reviews the literature that traces the global impacts of the green revolution from its origins to its present day concentrated corporate control, vertical integration, and financialisation of the industrial food system. It joins with others who understand that doing nothing to transform the food system is not an option. The dissertation provides a detailed description of the role of PAR in building shared meaning and sustainability in the dynamic process of food system transformation. The author offers a schematic of a local food short supply chain using a circular economy model that embeds participant values of diversity, equity, and sustainability. The research suggests that networking locale-based food systems may become a new globalising force that re-localises food culture and sovereignty.

Keywords: food system transformation, reterritorializing food, local food short supply chain, COVID-19 pandemic, climate action, critical social theory, PAR methodology, food sovereignty

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Chapter 1: Introduction

This dissertation takes a systems approach to developing a local food economy that is grounded in socio-ecological values. It is based on a Participatory Action Research (PAR) project that is exploring the gap between conceptualising a local food system and creating one that is sustainable in the long shadow of industrialised food. The dissertation traces the work it is taking to respond to the call for food system transformation. It moves from theory to practice, from a binary understanding of local food as the assumed antidote to all that is wrong with the industrial food system, and toward intentionally underpinning the transformation actions with a local values proposition. The research participants took a leadership role in an initiative we named Closing the Supply Gap (CSG), situated in the Capital Region on the west coast of British Columbia, Canada. The twin crises of the COVID pandemic and climate change increased the awareness and motivation for food system change in this region.

Food represents a vast array of phenomena: it is essential to human life; it encompasses many categories of the earth's biological organisms; it is a cultural bond; it is an abstraction in the global commodity market place; it is a significant component of a country's economic success and measurement of Gross Domestic Product (GDP); it is personal comfort and health; it embeds personal and social power; and it is a significant instrument of climate change and action. This dissertation attempts to rotate all of these qualities through a change process that is needed to transform our relationship with food from an industrial and corporate one to a localised one that uses a short supply chain that builds local meaning and sovereignty.

Food system research and local food action have been happening for decades. Thousands of people are involved around the world, all working to redress problems with the industrial food system and reclaim localised control of food. Despite these sustained efforts, industrial food and

corporate control of the food system continue to dominate and increase in strength. Within the complexity of questions that remain unanswered in the area of local food research this dissertation focuses on the obstacles and enablers in developing a place-based food system, including the functions that represent a localised and systematised food value chain. I bring attention to the conditions for change. Using critical social theory and participatory action, I analyse how the research participants (academic and non-academic) work together to build a *place-based food system* that is a short supply chain. The research began three years ago and was close to wrapping up when COVID-19 was identified in North America. When the pandemic was declared in March 2020 I extended the duration of the research to include observations of the heightened interest and actions related to the food system that emerged as part of the population response to the crisis.

Research Context

It has been more than thirteen decades since the *Green Revolution* accelerated the transformation of world food into the entrenched industrial system we have today, and it is more than four decades since national, international, and local social movements formally organised in opposition to that system. From the outset, the Green Revolution was research-based; it was funded by private foundations, universities, and governments with aims to increase commodity crop production and food security (Borlaug, 1968; Matson, & Falcon, 2012). Important in the context of PAR is the observation that the Green Revolution was conceived and carried out by people from outside the place and food culture where they conducted their experiments.

The social movements that emerged in opposition to the introduction of global corporate control of the food system are culturally-based in resistance with aims of reclaiming local sovereignty over food and the means of food production and distribution (Slow Food, 2021; Via

Campasina, 2021; Food Secure Canada, 2021). This history established local food research in a dichotomy of binaries in which local food is reified and conflated with a high level of community sustainability values in opposition to the profit-motivated corporate focus of the industrialised global system (Born & Purcell, 2006; Hinrichs, 2000). Some contemporary research is working to escape these prescriptive binaries and reductionist concepts and, instead, explore the dynamic forces that distinguish a local food system in a crisis of global sustainability (Anderson, et al, 2019; Jarzebowski & Pietrzyck, 2018; Schmitt & Six, 2018; Vivero-Pol, et al, 2019; . Yacamán Ochoa, et al, 2019) My research is located in this animated time and environment.

Critical social theory is changing the focus and direction of *local food* research, bringing new dynamic interdisciplinary relationships to the scope of inquiry (Blay-Palmer, 2010; Matson, et al, 2012). It provides the ontological and epistemological framework that combines relevant natural and social science perspectives in this research area at the intersections of ecological, biological, geographical, economic, political, cultural, and sociological disciplines (Andrée et al. 2014; Connelly, et al, 2011; Eriksen, 2007; Hinrichs, 2016; Matson, et al, 2012; McMichael, 2009; Vivero-Pol, 2017). In this framework, my research brings academic and non-academic inquiry together to contribute to the democratisation of knowledge and create change (Agger, 2013; Fals Borgia, 2007; Heron & Reason, 2006; Rappaport, 2020; Reason & Bradbury, 2008; Roberts, 2000).

Research Problem

The literature comprises an abundance of case studies of community-based local food initiatives; these studies span the globe (Donald, 2010; Mastronardi, et al, 2015; Stahlbrand, 2017; Wegerif & Hebindk, 2016; Wright, 2014). They show that despite many efforts to address

impacts and issues associated with the global industrial food system, it is generally the case that communities are not successful in creating a robust local food economy. My literature review indicates corporate dominance is increasing while local food proponents continue to struggle to maintain a minor niche position in the control and distribution of food (Clapp, 2019; Hinrichs, 2015; McMahon, 2014). The literature provides analysis of the impact of food industrialisation on all aspects of the system from corporate-controlled plant genetics and seed patents to the relationship between industrial food production methods and the devastating loss of eco-diversity and sovereign rights over food at the national and community levels (Andrée, et al, 2014; Conway, 1997; IPCC, 2019; Matson, et al, 2012; Shiva, 2016; Vivero-Pol, 2017). A theoretical construct underlying my work is the contention that the objectification of food as a commodity is instrumental in reproducing the structures that maintain the industrial food system and its associated neo-colonial values and aims. In this context my research addresses a challenging set of research questions:

How can the participants (academic and non-academic) in this research build a *place-based food system* that embeds localised values? What are the relationships and functions that are needed to create such a value chain? What might be the intersection between the *place-based food system* and an *industrial global food system* and does it reflect local food culture and values in its place of origin? And how can research theory and methodology support the equalisation of power relations in the food system?

My Positionality

I am committed to research that shares a rich history and future with collective, inclusive social action and change. I am part of a community of food action organisers, and identify with local food culture and local food systems as a change agent in climate action. Of particular

interest to me is what role “local” plays in building a localised food system. For this reason I have situated my research in the Capital Region of British Columbia, Canada, where I live and work. This region is a defined geographic territory that has particular physical and demographic characteristics and a certain degree of sovereignty through local and Indigenous governments. It is a place that has a rich Indigenous history of people who lived in harmony with and fed themselves from the lands, waterways, forests, and animals through many, many generations. Indigenous food knowledge is alive and well among the Coast Salish tribes who continue to live and work in this region. Fishing and other wild harvesting are part of the Indigenous food supply. There is a shorter history of agricultural production, characterised by small-holdings and a variety of regenerative practices that produce a diversity of food. Despite this history and current practice almost all of the food available at this time in this territory is supplied by the industrial, corporate food system with distribution coming in from all around the globe.

I bring my decades of experience in the local food movement and its foundational values to this research. My colleagues and friends in this movement are fiercely determined to work for a better food system that is grounded in sustainability, resilience, and justice. Like almost everyone else in this movement, I depend upon the industrial food system, not by choice but because we do not have an adequate supply of local food or a system to manage and distribute it across a population in excess of 400,000 people. For these reasons, my research is conceptually located at the intersection between the local food movement and the industrial global system—a bifurcation that is not uncommon in critical social theory (Smith, 2005).

I am also active in the climate action movement. I am committed to interdisciplinary research that co-creates knowledge informed by the expertise and life experience of stakeholders aimed at social action and systems change. My methodology is participatory action research

(PAR). It brings together participants from the local food movement with corporate, small business, and institutional stakeholders, policy makers, and educators. In this design, I am the principal investigator and a participant which places me squarely as an insider researcher (Coghlan & Shani, 2015). The outline that follows describes the organisation of this dissertation for which I accept sole responsibility.

Format of the Dissertation

In Chapter Two I present a review of the literature that is most relevant to the research I have conducted. It provides a brief contemporary history of the industrialisation of the food system and research that has identified the ways in which the industrialised system is problematic, including its failed promise to address global hunger.

The literature review includes significant research into the corporate investment and financial control of all aspects of the food system through vertical integration. It examines counteractions to this system and information about the socioeconomic assumptions underpinning many re-localisation efforts. The literature identifies multiple ambiguities in the terms “local” and “locale” that are inhibiting the potential of research to support change (Born & Purcell, 2006; Sonnino & Marsden, 2005). My research builds upon values-based inquiries in the literature as a tool for coalescing participatory action across food system sectors (Hinrichs, 2010; 2016; Morrissey & Dunphy, 2015; Sonnino, 2013; Winter, 2003). This chapter lays the ground for questions that my research sets out to address; it advances emerging research into the role of a short supply chain as a mechanism for creating local values-based food system change within a defined territory (Yacamán Ochoa et al., 2019; Todorovic et al., 2018).

Chapter Three provides a discussion of the theoretical and methodological framework for my research. I present my position on why I believe that critical social theory and participatory

action research (PAR) are key to understanding the collaborative process that increases shared meaning of why localising the food system matters. Working hand in hand with critical theory, PAR is the most appropriate way of mobilising action for change based on shared values. Together they frame a shift in the power relations that have privileged corporate dominance in the food system.

Chapter Four presents the findings of the research. I discuss both the process of the research and outcomes. I provide the structure of the data and discuss the significance of collaboration as a methodological tool in relation to the findings. This chapter includes a discussion of the values framework that participants created, the infrastructure needs they identified, and the results of the Local Food Economy Symposium that involved participants from across the region. It points to new awareness that is emerging in the context of the COVID-19 pandemic and the change actions that are ongoing in a Demonstration Project that was conceived at the symposium.

In Chapter Five I provide an analysis of the entirety of the research. I tie the findings to the theoretical framework and methodology to discuss the meaning of local from a pragmatic perspective. This analysis supports my assertion that, based on the experience of this research, defining local in food system development is not an abstraction but, rather, can be determined by the dynamic intersection of values and the cultural and socioecological environment of the place where the food is produced and harvested. I summarise the responses to the primary questions that prompted the research. Further, I provide a schematic design that represents the structure of a local food short supply chain based on the participants' values proposition and collaborative input. The schematic offers a transferable model which may be used to create a local food economy that produces and reproduces system change in other locales.

The concluding chapter offers a perspective on the place of localised food systems in a global environment and calls for a new understanding that globalisation does not have to be industrial or a homogenisation of the food system. Using a one-planet lens it posits that a network of localised food systems holds the potential of being truer to the values of sustainability, resilience, and social justice than the industrial food system's failed promises. Based on my research and the immediacy of the twin crises of a persistent pandemic in the midst of climate change, I offer a vision of the globalisation of diversified local food systems that reflect a multitude of cultures and biospheres, instead of industrial homogenisation. My research suggests that networks of local food systems may be the scaling up that is needed to create the transformation that so many people are seeking in the food system.

Chapter 2: Literature Review

My aim in this literature review is to establish the need for food system change and identify literature that relates most directly to my research questions. This aim recognises that a lot of work is being done to localise food but with limited success. Although some localised food shows up in the mainstream global market place, it is controlled by the industrialised food system. And while there has been some success in branding local food through farmers markets and specialty shops, local food continues to struggle to be recognised as anything other than a niche product. It is far from constituting a system in its own right. In this review I seek evidence of a fulcrum in the research that can be used to tip the balance of power in favour of localising the food system.

Local food studies cover an extensive area of multidisciplinary research, through a variety of lenses—rural development, environment, political science, economics, sociology. While this approach has relevance for some purposes it is limited in its capacity to explore the socioecological dimensions of the contemporary food system along with the intersectional issues that define it, and the changes that are needed to create a sustainable food system. Critical social theory (Agger, 2013; Prasad, 2015; Smith, 2005; Strydom, 2011) and the emergence of interdisciplinary perspectives open the research to more complex questions and a deeper understanding of the factors at play in bringing about change. My focus is in this area of research. I use PAR as the mechanism in my research to bring localised experience, knowledge, and commitment to the long term process of change (Denizen & Lincoln, 2008; Fals Borda, 2007; Gergen & Gergen, 2000; Hinrichs, 2008; Kemmis & McTaggart, 2000; Rappaport, 2020; Reason & Bradbury, 2001). The combined dynamic of PAR and an array of qualitative data that emerges from the participants and the literature produce a complex qualitative inquiry that is

central to understanding food system transformation (Button, et al, 2015; Denizen & Lincoln, 2008; Flick & Metzler, 2014; Gergen & Gergen, 2000; Savin-Bader & Major, 2013; Kemmis, 2009; Park, 2006; May & Perry, 2014; Reason & Bradbury, 2008; Strydom, 2011)

I present the review in three sections. The first describes the industrial food system and the cumulative problems that characterise its history to present day. With the advantage of time, recent research examines the impact that the industrial food system is having on economies, ecologies, and social and cultural structures world wide. From a political perspective, some of the analysis suggests that the industrial food system is a neo-colonising force in our modern day society. In the second section I review research into theorising local food as an alternative to industrial food. This section indicates a maturing of the research with a shift toward interdisciplinary questions and methods about the meaning of local as a research concept, especially in relation to industrial food system impacts. In the third section I focus on literature that leads directly to the questions posed in my research and the changes that it posits are possible.

Problematising the Global Industrial Food System

A shift from corn as a dietary staple and cultural bond to wheat production in the Yaqui Valley of Mexico early in the 1940s is a scientific landmark in the industrialisation of food and its globalisation. Norman Borlaug (1968), a leading United States agronomist and plant geneticist, explains that the objectives were to address the imbalance between the world's food production and population growth (p. 1) by bringing an organised program of scientific research to bear on improving yield and plant quality (p. 4). He explains that he and others were able to put in motion a seven-fold increase in Mexican wheat production within two decades through the development of dwarfed bread wheat varieties, and the introduction of managed irrigation along

with heavy applications of nitrogen fertilisers (pp. 7-9). These production methods required the development and application of chemical pesticides in order to control the concomitant increase in weeds and insects (pp. 7-9). Borlaug reports that within a few years almost all farmers in the region went from being hostile to accepting the changes (p. 10).

Researchers replicated the new Mexican wheat varieties and technologies in Pakistan, making that country self-sufficient in wheat by the mid-1960s (Borlaug, 1968, pp. 13-14). The additional lessons learned in Pakistan and India were soon applied to rice in the Philippines and other grains in countries such as Egypt and Turkey (pp. 12-18). By the late 1960s the term *Green Revolution* was coined to describe this industrialisation of food (Cleaver, 1972). The Rockefeller and Ford Foundations were early funders of these industrialised food developments and ongoing supporters of the associated research (Borlaug, 1968, pp. 1-2). Over time they were joined by American investors who saw business opportunities in the manufacture of fertilisers, pesticides, and a range of farm machinery and tools (Cleaver, 1972, p. 180). In 1970 Norman Borlaug was awarded the Nobel Peace Prize for making “it possible to improve the living conditions of hundreds of millions of people in that part of the globe which today might be called as the non-affluent world” (Lionaes, 1970, np). In her presentation of the award Lionaes notes,

The world has been oscillating between fears of two catastrophes – the population explosion and the atom bomb. Both pose a mortal threat. In this intolerable situation, with the menace of doomsday hanging over us, Dr. Borlaug comes onto the stage and cuts the Gordian knot. He has given us a well-founded hope, an alternative of peace and of life – the green revolution (Lionaes, 1970, closing paragraph).

Green revolution practices and technologies have prompted a large body of research into their effects, outcomes, and impacts. A conflict between green revolution methods and their

socio-ecological impacts was noted in research by the 1980s (Glaeser, 1987). The negative effects on small-holder farming with farmers giving up to monoculture and concomitant poverty and social inequalities were recognised (Glaeser, 1987, p. 3). The new technologies of the green revolution were challenged in the conditions they created for the advancement of rural poverty (Sachs, 1987). *Ecodevelopment* was presented as an alternative strategy (Glaeser, 1987, p. 4). For example, an agro-forestry system was suggested as a way that land could be reclaimed while restoring rural power and culture in India (Glaeser, 1987, p. 5). One study coined the phrase the *doubly green revolution* (Conway, 1997), calling for measures that would increase production even further while providing environmentally sustainable alternatives to the indiscriminate use of pesticides (pp. 115-117). The impetus for this analysis was the increase in yield which was not equitably increasing access to food and was not keeping pace with population increases. Biotechnology and genetic engineering were introduced as ways of achieving the next generation of a more sustainable green revolution (Conway & Toenniessen, 1999; Glaeser, 1987).

One of the first longitudinal, interdisciplinary studies of the green revolution was conducted at its origins in the Yaqui Valley by an international group of scientists (Matson, 2012). Over fifteen years, from 1993 to 2008, they examined environmental, ecological, and socioeconomic changes that paralleled the changes in grain production (Matson, 2012). The results identified a broad range of outcomes including increased incomes, increased costs, more livestock production, significant fluctuations in world grain prices, and some new land tenure arrangements (Naylor & Falcon, 2012, pp. 109-130; Dean, 2012). In the context of both positive and negative findings, the researchers concluded: “Despite its benefits in terms of food production, green revolution–style intensification of agricultural systems can have important negative consequences for people, ecosystems, and the global environment” (Matson, et al, 2012,

p. 32). It was noted that these effects are having a greater negative impact on smaller farms (p. 128). By 2001 the Yaqui Valley crops were not economically sustainable in the global market place due to agricultural subsidies in the United States and parts of Europe (pp. 131-132).

Questions of biophysical sustainability also arose due to issues with irrigation. The researchers explain:

High rates of fertilizer use and losses to the atmosphere and groundwater; pesticide pollution; massive hydrological diversions affecting both terrestrial and marine ecosystems; wasteful irrigation practices stemming from inadequate pricing; extensive crop residue burning; and intensive tillage practices all add to a somewhat bleak picture of environmental and human health in the [Yaqui] valley (Matson, et al, 2012, p. 133).

The researchers found that less than 50 percent of the applied artificial nitrogen was used by the crops and that the rest went into the environment, causing eutrophication of oceans and reducing the quality of drinking water (Matson, et al, 2012, p. 33). They concluded that the agricultural application of artificial nitrogen accounts for 60 percent of nitrogen related greenhouse gas emissions in the atmosphere (Matson, et al, 2012, p. 33).

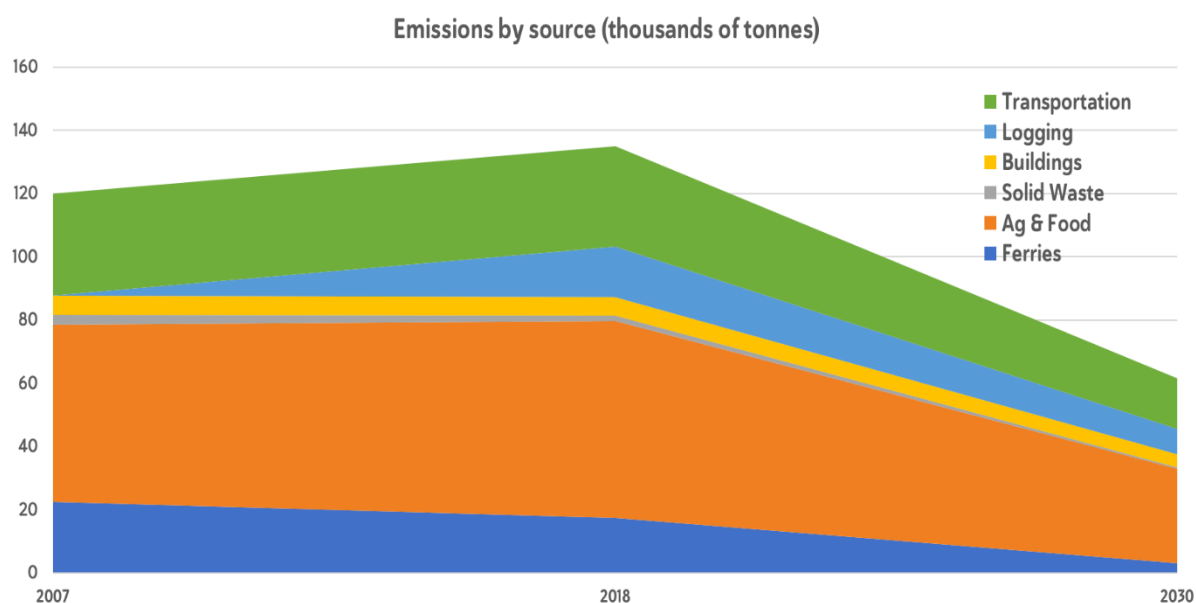
Not only is the industrial food system contributing to greenhouse gas emissions, but the trend is that food and agriculture emissions are rising at an alarming rate (Sandhu, et al, 2019). Research into the environmental and biophysical impact of the industrialisation and globalisation of food production on the earth was presented in an International Panel on Climate Change Report (IPCC) (2019). Using an interdisciplinary methodology (pp. 5-19) the IPCC research indicates that the per capita food supply has increased 30 percent since 1961 along with an 800 percent increase in nitrogen fertiliser and a 100 percent increase in water use (pp. 5-8). The research measures agricultural activities within the farmgate to account for 20 percent of all

anthropogenic emissions, including methane, nitrous oxide, and carbon dioxide (pp. 5-60). The emissions beyond the farmgate in the rest of the supply system are based on an estimate that suggests they could bring the amount to between 25 – 30 percent of total anthropogenic global emissions (pp. 5-61). The analysis examines a complex range of factors which shows the high rate of nitrogen fertilisers and methane emissions from rice fields and peatland degradation (pp. 5-62). Industrial livestock production, particularly grain-fed cattle, and manure management are also significant contributors to greenhouse gas emissions with the rate increasing in relation to the increase in economies of scale which lead to increased production, a phenomenon called the ‘rebound effect’ (pp. 5-63). The storage, processing, and transportation of food within the industrial food system also contribute to greenhouse gas emissions with the processing of sugar and oils among the highest emitters (pp. 5-65). The report discusses the complex relationships between agricultural practices, effects, and environmental and socio-economic impacts. These relationships underline the need for interdisciplinary research in order to fully understand the many socio-ecological dimensions at the intersection of industrial global food and local food.

The community where I live organised a community-based climate action planning process in 2019-2020. The plan describes six areas of concern that relate directly to this community and offers priority actions in each area (Transition Salt Spring, 2021). We are fortunate to have several researchers with climate change expertise in the community who analysed existing data from the IPCC study and other scientific papers with a view to understanding the rate of greenhouse gas emissions that can be associated with this community. Based on their analysis they concluded that food and agriculture account for more greenhouse gas emissions, directly and indirectly, than any other category of emissions that can be attributed to the situation here (Transition Salt Spring, 2021, p. 53). As Figure 1 shows this relative food

and agriculture attribution exceeds even transportation emissions due to fossil fuel. The analysis indicates that the phenomenon is not due to community-based food production but, rather, is associated with the carbon dioxide, nitrogen, and methane gases that are embedded in the high proportion of food coming from the industrial system that makes up our local diets¹. The community-based climate action plan projects that the GHG proportion attributed to the food supply in this community will remain relatively the same or increase somewhat through the next decade unless there is a major shift in the food system.

Figure 1: *Greenhouse Gas Emissions due to Food and Agriculture on Salt Spring Island, Current and Projected*



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The United Nations Food and Agriculture Organisation (FAO), in collaboration with four other United Nations organisations, has conducted research into the external costs of the current

¹ Earlier studies indicate that locally produced food accounts for less than 10 percent of the food available for purchase in this rural island community (Reichert, 2010).

industrial food system and identified health and environmental costs as major contributors.

Based on the work of a group of expert scientists they report that the environmental cost of GHG emissions (including carbon dioxide, nitrous oxide, and methane) related to current dietary patterns will “exceed USD 1.7 trillion per year by 2030” (2020, p. 93). These are costs that are not accounted for in the cost of food today, even though they are the direct result of the ways in which we produce and eat food that are harmful to environmental sustainability (p. 94). They point out that in wealthier countries, such as Canada, eating patterns tend to exceed optimal energy and they call for major changes in “the dietary practices and system-wide changes in food production, food environments and trade” (p. 93). They assert there is a better way to eat and offer four dietary regimes as alternatives which are not prescriptive and can include meat and fish choices.

In the midst of evidence that the industrial food system is causing severe ecological damage around the world, the green revolution continues to be advanced by “institutions capturing the narrative of sustainability” (Canfield, et al, 2021, p. 7). Its most recent iteration was initiated on the African continent in 2006 with a program called the Alliance for a Green Revolution in Africa (AGRA, 2009). Kofi Annan, past Secretary General of the United Nations and Nobel Peace Prize winner, was the founding chair of AGRA (Kofi Annan Foundation, 2021, np). An array of institutions, including philanthropic donors, governments, and the World Bank, are providing funding and farmer loans (AGRA, 2021, p. 66). AGRA describes its vision as “an agricultural transformation that fundamentally changes how food is produced” through industrialisation and full integration into the macroeconomy “leading to a shift in labor” (2021, p. 9).

In its 2008 Annual Report AGRA organisers articulated the goals to “reduce food insecurity by 50 percent in at least 20 [African] countries by 2020 and double the incomes of 20 million smallholder families” (2009, p. 7). In the report it also committed to “regenerating 6.3 million hectares of degraded farmland over 10 years through balanced, integrated soil fertility management” and projected that it would benefit over four million rural households (AGRA, 2009, p. 19). Acknowledging the depletion of soils in many African countries, the report indicated that African governments had agreed to increase fertiliser use by 10 times; AGRA loans in excess of four billion dollars were being made available to smallholder farmers for this purpose (pp. 20-22). AGRA reports that the non-organic fertiliser initiative would use a “micro-dosing” method for fertilising grain crops in West Africa, known as the “Coca Cola technique” (p. 19). This method involves the placement of a bottle cap of fertiliser with each seed and is claimed to be “a proven success” (p. 19). The Bill & Melinda Gates Foundation, a founding designer and investor of AGRA, placed emphasis on technological innovations as a tool for increasing productivity, and attracted the Rockefeller Foundation to join the initiative (p. 22). Like previous green revolution development, AGRA appears to incorporate an agriculturally-related research plan. For example, the Gates Foundation contributed \$15.1 million to the development and implementation of a new, integrated African Soil Information System (AfSIS) which is described as follows:

AfSIS combines the latest soil science and technology with remote satellite imagery and on-the-ground efforts to analyze thousands of soil samples from remote areas across the continent in order to provide solutions for poor farmers. The System will provide precise knowledge of soil conditions, trends and the best means to improve soil fertility” (AGRA, 2009, p. 19).

In 2020, AGRA reports that it has reached 10.1 million smallholder farmers in 11 African countries and says that “87% produced a marketable surplus in 2019/20” ...and 67% earned higher incomes vs. 2017 from the surplus (2021, p. 10). The report explains that these accomplishments were due at least in part to the “adoption of climate resilient crop varieties” and distribution through “the agro-dealer network” (2021, p. 18) which is a key component of the supply chain that AGRA has developed to increase productivity. An external researcher explains the agro-dealer network: “AGRA set up an infrastructure of 10,000 agro-dealers folding small-scale farmers into value-chains comprising agro-inputs (seeds, fertilizer, and pesticides) and contracts for delivery of produce to corporate processors and retailers” (Canfield, et al, 2021, p. 5)

Analysis of the African Green Revolution’s impacts are beginning to appear in the research literature. The critiques tend to focus on the quality of data that AGRA is making available having to do with its core goals and accountability for billions of dollars that are being spent (Wise, 2020). There is criticism that the AGRA Integrated Soil Fertility Management (ISFM) program is focused on farmers using commercially produced seeds and inorganic fertilisers at the expense of open pollination seeds, increasing organic matter, and building soils through crop rotations and intercropping (pp. 11-12). Analysis of yields across the 13 countries where AGRA has been operating indicates that the production increase has been well below the target of doubling by 2020, showing improvement of only 29% when controlling for increases in the amount of land brought into production (Wise, 2021, p. 14). Wise notes that subsidies for some crops do appear to incentivise farmers to bring more land into production for those crops. He explains the incentives are increasing monoculture which is having a negative impact on the soil while discouraging traditional crops like millet, cassava, and sorghum in favour of maize

(pp. 14-15). And maize yields, which is a commodity crop grown for export, have only increased by a total of 29 percent over 12 years (p. 14). With some variability from country to country, there is no evidence that AGRA has accomplished its goals of increasing farm incomes and reducing rural poverty and hunger; in some countries it appears that poverty and food insecurity have increased dramatically (Wise, 2021, p. 23) with nine of the 13 AGRA countries show rising levels of hunger (p. 24).

Promise of Eradicating Hunger

The United Nations' Food and Agriculture Organisation (FAO) reports that not only has the world not achieved the green revolution's goal of eradicating hunger, but food insecurity is on the rise both in absolute numbers and proportionately (2019, p. 15). The FAO reported in 2020 that over 690 million people suffered from hunger world-wide (FAO, 2020, p. 3); the new data indicate that in total an estimated two billion people do not have regular access to sufficient, nutritious food (p. 3). Some of these people are living in conflict zones where the FAO estimates 74 million people are experiencing acute food insecurity, many of whom have been living in refugee camps for years with no control or sovereignty over their basic food needs and where there is no respect for their basic rights under international humanitarian laws (FAO, 2019, pp. IV- X).

The FAO is predicting that the rate of hunger and undernourishment in the world is accelerating due to the COVID-19 pandemic (FAO, 2020, p. 8). Based on an ongoing study of the impact of COVID-19 on food experiences around the world the FAO is recommending that local and national governments and its own policy directions actively promote local food production and short supply chains as mechanisms for increasing self-sufficiency (FAO, September 2020, p. 5). The FAO High Level Panel of Experts on Food Security and Nutrition

(HLPE) has concluded that “increased food production alone is not sufficient to address this crisis” and is calling for transformation of the food system as a whole (2021, p. 13).

The FAO reports that almost 50 million children under five are wasting, and 149 million are stunted (FAO, 2019, p. 28). This is the case at the same time as more than 40 million children under five and almost 40 percent of adults (two billion) in the world are overweight (pp. 28-33). While an estimated 25 percent of the world’s population are affected by food insecurity—women more so than men—the FAO also reports that 14 percent of food globally is lost in the supply chain from harvest to retail (2019, p. 43), with North America, Europe, and Central and South Asia exceeding this rate (p. 8). All lost and wasted food is estimated to be as high as one-third of all available food—approximately 1.3 billion tonnes annually (FAO, 2016). Within this food distribution context some researchers conclude that the social phenomenon of food insecurity is a function of the market, not of production (Holt-Giménez & van Lammeren, 2019, p. 315). Based on an analysis of FAO data the research estimates that the world has enough food for one and a half times the current demand; food production has grown at almost twice the rate of population growth (Holt Giménez, 2009, p. 144). A FAO report (2019) notes that countries dependent on primary commodity exports increase the citizens’ vulnerability to food insecurity (pp. 112-113). This is one of the impacts of global loans to poor countries. Many developing countries have had little choice but to relax their agricultural trade policies and lower tariffs to the point that although most farmers are using sustainable agricultural practices, they themselves are not sustainable (Clapp, 2016, p.3). Clapp (2016) links food security and hunger to the key economic forces that are at play in the breadth and strength of the global food system. She explains that since the 1970s there has been a steady growth in the influence and control of corporations that shape the economics of the global food system and fundamentally affect the food on peoples’

plates around the world (Clapp, 2016, p. 16; Clapp, 2015, p. 305). “By the 1970s some two-thirds of the world’s population was eating only a quarter of the world’s protein” (Clapp, 2016, p. 47). And most of the protein that the rich were consuming was in the form of grain-fed meat. One billion rich people ate the same amount of protein that two billion poor people ate directly as grain (p. 47). Some research calls this phenomenon the colonisation of diets with organic salads for the rich and highly processed junk food for the poor (De Schutter, et al, 2019, p. 373). The same study of the external cost of the environmental impacts of how we produce and eat food also considers the external health costs of food (FAO, 2020). It calculates that all non-communicable diet-related diseases will cost in the range of USD 1.7 trillion per year by 2030 (FAO, 2020, p. 93). And it estimates that these costs could be reduced by 97 percent with healthy diets (p. 93). Four non-communicable diseases account for 71 percent of these costs: cardiovascular disease, cancers, diabetes, and chronic lung disease (p. 94). These externalised costs of the industrial food system affect every country in the world.

In her 1991 analysis of the green revolution’s impact on the Punjab region of India, Shiva (2016), a physicist and anti-globalisation activist, assessed what she referred to as the *violence* of the impacts. She emphasises that the analysis of positive and negative effects and impacts must be conducted within the complex social and ecological dimensions in which science operates (pp. 23-25). Shiva links green revolution developments to political forces aimed at “achieving peace and prosperity in rural India” (p. 14). She asserts that the actual outcomes are the opposite of those intended and claimed; instead they are political, ecological, and cultural disruption leading to increased conflict, reduced fertility and crop diversity, and scarcity (p. 15). Other research supports this perspective, asserting that the green revolution displaced many high protein crops with wheat and rice because they were cash crops for trade (Clapp, 2016). The

claim was that wheat produced a much higher yield even though some of that yield increase is due to the higher water content of grains like wheat thereby artificially inflating the weight without necessarily increasing nutrition (Clapp, 2016, pp. 42-43).

Financializing the Food System

The development of the global industrial food system has been supported by international financial organisations. The International Monetary Fund (IMF) and the World Bank, formed in the mid-1940s at the same time as the launch of the green revolution, have instituted adjustment programs which have forced poor countries to lower their tariffs on imports, culminating in the 1994 World Trade Organisation (WTO) Agreement on Agriculture; this agreement increased the flow of agricultural products from developed countries, negatively impacting income levels in poorer countries (Clapp, 2016, pp. 14-15). Some research points out that the WTO “trade regime deepened an agrarian crisis in the global South among small-scale farmers, who had lost price supports and food subsidies *via* Structural Adjustment loan conditions”, in favour of farm subsidies in the US and Europe (Canfield, et al, 2021, p. 4). The subsidies to American and European farmers meant that those countries could flood the market place with cheap food, jeopardising local production. That condition affects small scale farming around the world to the present.

These structural adjustments deeply favoured the global financial system, pressuring developing countries to comply with external requirements, some related to the commodification of food, as a condition of managing their loan payments (Clapp, 2016, pp. 64-67; Zerbe, 2019). The increased commodification of food has come about through the *financialization* of the food system, which relaxes regulations having to do with investment in agricultural commodity futures, an attractive feature to speculative investors. Commodification of food in the industrial

system is associated with many factors: seed patents that threaten open source seeds and in some cases make open source seeds unlawful; the rise of processed food devoid of cultural meaning; and excess packaging and long distance transportation of food (Zerbe, 2019, p. 163). In this industrial food system the expanse of the supply chain has separated people from their food in terms of physical distance as well as culturally, socially, and nutritionally (Clapp, 2016, pp. 19-20). One of the effects is increased price volatility as food is traded for its profit value only, with little regard for its embedded values (pp. 16-18). Embedding food in the industrial market place “erodes its value for society” (Vivero-Pol, et al, 2019, p. 26). An influence in this process is the effect of distance. The industrial system has successfully separated food from its place of origin with a variety of distancing mechanisms, separating production from its environment which, in turn, obscures and in many cases renders invisible the external ecological and social costs of the food system; these factors make it harder to identify the negative environmental and social impacts of the food system and where responsibility lies for them (Clapp, 2014, p. 309).

In the context of the financialization of the global food system, corporate control is increasing and it is doing so at an accelerated rate with implications for the “long-term social and ecological sustainability of food and agriculture” (Clapp & Isakson, 2018, p. 2). Financialization is institutionalised by the establishment of commodity index funds, hedge fund pressures, and corporate mergers (pp. 7-9). These factors are manifested in control of and power over the food system by an ever-smaller concentration of transnational corporations. This increasing concentration is a change within the industrial sector brought about through corporate mergers. For example, the literature shows that four firms account for 85 percent of beef processing in the world, and another four for 70 percent of ingredient crops—that is crops that are crucial across the food and processing sectors—including wheat, maize, soy, and palm oil (Clapp, 2016, pp.

102-105). In Canada, Cargill processes 60,000 head of cattle per week and more; the number jumped to as high as 70,000 animals per week in the midst of the COVID-19 pandemic (Bannon, et al, 2020). The Canadian coastal fishery, reportedly one of the finest in the world, is equally corporately controlled with 85 percent of the catch going to export through corporate contracts while 80 percent of fish sold in Canada is imported (Government of Canada, 2021).

A related effect of financialization is large-scale corporate investment in farmland and biofuel, and equity investment in food and land shares (Clapp, 2016, p. 158; Clapp, 2019). The equity investment has the effect of putting control of the means of food production—farming practices, what is grown, and who owns the food—into the hands of fewer and fewer corporations and individual power within those corporations (Clapp, 2021, p. 3). Taken together these factors are creating an enormous negative impact on access to food, farm incomes, and the protection of the natural environment (Clapp, 2016, p. 18). With the infusion of capital, based on speculation not on supply and demand, “Food came to be seen only as a vehicle to profit and capital accumulation, its social and cultural context obliterated, and its necessity for sustaining human life ignored” (Zerbe, 2019, p. 166). Anderson, et al, (2019) explain the meaning of these factors for changing the food system based on a range of sustainability values,

Concentration and consolidation of agricultural input markets block agroecological transformations and have been called “one of the most pressing concerns” related to the industrialization of agriculture. Market concentration allows large corporations to make significant profits, while pushing farmers into growing resource-intensive, environmentally destructive monocultures for very low farmgate prices (often below production cost), provoking a cycle of debt, consolidation, and industrialization that does not allow for transition. Aided by external input subsidy schemes (e.g., for fertilizer), this

dynamic has been repeatedly and empirically observed in farmers' accelerated and broadened use of fertilizers, pesticides, commercial seeds, non-locally adapted livestock genetics, and imported feed (Anderson, et al, 2019, pp. 11-12).

As financialization focuses power in the hands of fewer and fewer industrial actors it limits the capacity of local producers around the world to affect the transformation of the food system through localised practices and governance that emphasise sustainability (Anderson et al, 2019, p. 3.) As the literature shows, financialisation of the industrial food system is a significant driver of who controls food sovereignty. In the next section I discuss the fight for sovereignty between civil society and industrial actors, and its prominence on the world stage as the COVID-19 pandemic is building pressure for system changes.

Social Movement Responses and Food Sovereignty

The rise of the global local food movement highlights the tension between research that created the green revolution and centuries-old non-academic common knowledge about how to produce food in an environmental context and feed communities (Food Secure Canada, 2021; Via Campesina, 2021; Levkoe, 2014; Levkoe & Wakefield, 2014; Slow Food International, 2021; Transition Network, 2021). These citizen-based food movement organisations have arisen out of the green revolution's failed promise of food security, triggering a body of research at the intersection of food culture, social justice, food economics, and biological diversity. One of the first organisations to develop was the Slow Food movement which was established in Europe in 1986 to promote agricultural biodiversity and local food cultures, and to protect against the extinction of specific foods (Slow Food, 2021). Today, Slow Food has member organisations in more than 160 countries around the world and has named thousands of heritage foods that are

genetically unique, including 40 in Canada (e.g. Red Fife wheat, Chantecler chicken) (Slow Food, 2021).

Research also traces the formalising of a peasant organisation called La Via Campesina, established in 1993 (Via Campesina, 2021). Today, Via Campesina with headquarters in Harare, Zimbabwe, claims to represent more than 200 million peasants in 182 organisations in 81 countries (Via Campesina, 2021). In 1996 Via Campesina presented a food sovereignty manifesto at an international meeting of non-governmental organisations that was held that year in parallel with the United Nations World Food Summit in Europe. The manifesto was created in opposition to the social injustice of global food economics, food dumping, and corporate control of land, waterways, seeds, and labour (Canfield, et al, 2021, p. 4; Via Campesina, 2021). Food sovereignty is a framework for challenging the socio-political and social justice effects and impacts of the industrialised global food system (Andrée, et al, 2014). It claims not just the right to have food but the right to produce food and rights associated with meeting social needs (Menzer, 2014, pp. 58-62). It links the problems with the global food system to intersectional emancipatory issues such as women's rights, class issues, and Indigenous rights (Via Campesina, 2021). "The new transnational agrarian movements regularly integrate social, environmental, economic, and cultural concerns with demands for land reform" (Holt Giménez, 2009, p. 147). Patel (2009) traces the meaning of food sovereignty through a decade of development, asserting that food sovereignty is a pre-condition of food security.

The literature highlights the inequality within the neoliberal divide between the northern and southern hemispheres which came to a stark peak in 2008 with the rise in hunger throughout the southern hemisphere as the food supply grew and food prices and profits reached new heights in the northern hemisphere (Holt-Giménez, 2009; Holt- Giménez & Patel, 2009). The issue in the

literature is characterised not as lack of food in the southern hemisphere but that people are too poor to purchase it (Holt Giménez, 2009; p. 114). In the northern hemisphere the issue is emerging in terms of the rural-urban relationship. Some researchers are linking food sovereignty to other movements such as transition towns, ecofeminism, food policy councils, and other new forms of citizenship and have coined the term Civic Food Networks (Rent, et al, 2012).

The research raises questions about the multiplicity of meanings of food sovereignty and asks if it relates only to agriculture or does it reach to trade agreements, social justice, urban food issues, and other forms of local politicisation (McMichael, 2014, p. 346). McMichael offers a view of the multi-dimensionality of food sovereignty which he explains was born of crisis with the economics of food taking on renewed importance. He points to considerations of the social and ecological underpinnings of food as necessary dimensions for food sovereignty (p. 358-359). For example, most (75 percent) of the two billion hungry and undernourished people in the world are rural residents with an overrepresentation of women (p. 346). McMichael (2014) asserts that the food sovereignty movement is resistance to unfettered neoliberal commodification of food production and distribution (p. 346). The use of the corporate language of consumerism in this literature underlines the increase in neoliberal economics filling the space in the sociology of agriculture and food. Bonnano & Constance (2008) conclude “The growing role of corporate actors in the shaping of the production and consumption of food is one of the emerging substantive areas that require [sic] scientific and social attention in the panorama of our new fights over food” (p. 41).

Andrée, et al (2014) point to various indicators of alternative markets and values such as Fair Trade, community supported agriculture, the right to produce food, and food security over profits as bridges pulling food back from the global market place. As the disparity grows even in

the northern hemisphere, food security is linked to food sovereignty more frequently in interdisciplinary research literature (Alonso-Fradejas, et al, 2015; Claeys, & Lambek, 2014; Dale & Newman, 2006; Fonte & Cucco, 2019; Martorell & Andrée, 2019; McMahon, 2014; Patel, 2009; Rent, et al, 2012). As early as the mid-to-late 1980s the US emphasised that food security and self sufficiency are not the same thing, and the World Bank defined food security as the ability to purchase food (Canfield, et al, 2020, p. 4). The tension in the binary of food security versus food sovereignty has grown over the years at the highest levels of public policy. Over time, concerns have grown about the corporate sector exerting deeper and wider control of the food system and influence on United Nations' policy and programs including the mandate of the FAO and its Committee on Food Security (CFS). In its role, the FAO has built relationships with many civil society organisations, particularly through the CFS. At the same time other arms of the United Nations are increasing alliances with market-based food governance (Canfield, et al, 2020). These tensions came to the fore in the 2008-09 food crisis that highlighted the disparities between the impact of food shortages in the southern hemisphere and increasing corporate profits accumulating primarily in the northern hemisphere. The COVID-19 crisis is bringing this tension into sharp focus again. The force of transnational food corporations, philanthropic organisations, and other global organisations are again galvanising forces against expanded corporate control due to the COVID-19 crisis (Canfield, et al, 2020; Clapp & Moseley, 2020). In 2019, the United Nations announced a World Food Systems Summit to take place in 2021 (United Nations, 2021). The Summit promised to launch bold new actions to transform the way the world produces and consumes food, and deliver progress on all 17 UN Sustainable Development Goals; it sub-titled the event "The People's Summit" and invited broad participation through many different channels. Emerging literature, however, is building strong

criticism of Secretary-General António Guterres for allowing the World Economic Forum (WEF) to usurp the narrative of sustainable food system transformation and for the appointment of the president of AGRA, the organisation overseeing implementation of food industrialisation in Africa, as Special Envoy to specifically promote the green revolution narrative at the Summit (Canfield, et al, 2020, p. 7). The critique explains that concerns include a lack of transparency in the organisation and funding of the Summit and lack of clarity about how the contributions of farmers, scientists, activists, and other civil society participants will affect the Summit outcomes, if at all (p. 9). It asserts that the AGRA involvement is intended to “further extend the influence of the Gates Foundation on food system governance (p. 11); it points out that the Gates Foundation is the largest private foundation in the world and Bill Gates is the largest owner of US farmland (p. 11). Just days before the first Summit sessions, a research brief was issued asserting that “a powerful network of organizations, many of which are closely aligned with business and industry” (Clapp, et al, 2021, p. 1) are promoting a proposal for an IPCC-style approach for food that will create a new science-policy interface. The researchers claim that this new scientific group will undermine the already existing High Level Panel of Experts on Food Security and Nutrition (HLPEFS, 2017; 2021). In their working document, the authors indicate that the IPCC for Food does “not appear to involve broad stakeholder consultation and incorporation of different forms of knowledge (Clapp et al, 2021, p. 1). The Summit is underway as I write this dissertation so the outcomes are still a work in progress. Even at this stage, however, the organisation of the Summit prompts questions about the exertion of corporate power and control at a time when elevated food system awareness due to COVID-19 is showing the fragility of the industrial food system. The questions support the pre-summit calls for food

system transformation based on principles of food sovereignty (Clapp & Moseley, October 2020). I return to this discussion in subsequent chapters.

In summary, problematizing the global food system spans a complex body of interdisciplinary research along a range of social and physical science dimensions. It defines the problem from the perspectives of soil and water science, human rights, food culture, human health, economics, biodiversity, environmental considerations, biology, and socio-economic justice. The research follows the history of food industrialisation from the green revolution's efforts to increase global food production through to effects and impacts of commodification of food, seeds, land, and labour. In response to the local food sovereignty movement, the research challenges the food security goals of the corporatisation of the food system. It examines the intersection of financialization and corporate concentration with social justice and public good. It shows that the global food system is growing in financial value and concentration at an accelerated rate, despite the opposing actions of vast social movements at the highest levels of world governance. It is this challenge that is the impetus for an emerging generation of research, including this dissertation, into how a community creates a local food system that can operate in its own right.

The Meaning of *Local* in Food System Research

As critical social theory has become more established in the research literature, there is a notable shift from examining local food as a social movement to a more complex examination of the binary relationship between local and global food from an interdisciplinary perspective. In this context, Winter (2003), for example, poses a challenge to “avoid false dichotomies between globalised food systems and alternative consumption practices” (p. 31) in order to understand

their commonalities. In this section I review literature that increases understanding of why the meaning of local matters and what it offers that is helpful in transforming the food system.

Spaciality and Scale

In a watershed analysis, Born and Purcell (2006) challenge the ontological idea of the local-global binary and call for a more dialectic consideration of spatiality as a category of investigation in research, particularly as it relates to food systems planning. Their analysis marks a turning point in the use of critical social theory as a framework for food system research. They identify the conflation of place and scale with higher level values in local food research as problematic, calling it the *local trap*: “The local trap refers to the tendency of food activists and researchers to assume something inherent about the local scale. Local is assumed to be desirable; it is preferred a priori to larger scales” (Born & Purcell, 2006, p. 195). They posit that scale does not determine outcomes and therefore localisation is not an end in itself. They provide a detailed analysis of how the local trap manifests in local food planning, and assert “Local-scale food systems are equally likely to be just or unjust, sustainable or unsustainable, secure or insecure” (p. 195). They encourage food system planners to test the utility of scalar strategies, asserting that one of the biggest problems in food system work is not identifying scale as part of the planning regime but rather making the assumption that small scale is inherently desirable (p. 204). They argue for weaving scale into considerations of networking in the development of localised food systems (p. 205).

Other researchers have followed their lead and agree that localism does not inherently include sustainability qualities in opposition to global industrial food (Connelly, et al, 2011, pp 213-14; Berti & Mulligan, 2016). Some go so far as to say that food-localism is elitist, a romantic notion of social justice that cannot lead to sustainability (Fonte & Cucco, 2019, p. 348).

In my view, neither of these perspectives adequately takes into account the important relationship between spatiality and scale that Born and Purcell (2006) raise. It is a relationship that is of significant interest in any food system design, one I return to in Chapter 5 as an actionable factor that emerges out this research.

Power in the Local Food System

The dialectic between global and local food posits that *locale* in the food system is only sustainable to the extent that it considers the trade-offs of different values and their connection to power relations (Hinrichs, 2010, pp. 25-26). Sorting out the conflation of specific values in the binary conception of the global-local relationship is important for understanding the ambiguity inherent in these concepts and their meaning in determining the practicalities of locale (Kemmis & McTaggart, 2000). Power relations, themselves, are anything but clear cut in the research literature. As is evident in the opposition to the corporate role at the 2021 UN Summit on Food Systems, the concepts of food sovereignty and food security are loaded with complexity beginning with the role of communities. As noted previously, regardless of perspective, the green revolution was, and continues to be, predicated on external control of interventions in food production (AGRA, 2009; Borlaug, 1968; Canfield, 2021; Matson, 2012; Shiva, 2016). A non-corporate view asserts: “Food sovereignty...emphasises the right and ability of farmers and their communities to assert control over agricultural production and meet the needs of local communities” (Menzer, 2014, p. 60).

This latter assertion is hypothetical, however, given that sovereignty is ordinarily the purview of nations and needs to take into account the jurisdictional power and control of international agricultural regulations, trade agreements, codification, and the influence of transnational corporations on decisions that affect sovereignty (Clapp, 2019; Smythe, 2014). The

power struggle that drives sustainability decisions is playing out today at the United Nations Food System Summit with many researchers claiming that powerful nations and philanthropic organisations are using the appearance of participatory action to advance their control of the sustainability trade-offs (Canfield, et al, 2020; IPES, July 2021; Wise, 2021). The UN Summit planning group is promoting establishment of a new global science-policy interface for food similar to the International Panel on Climate Change while a large group of food system researchers argue that the existing UN Committee on World Food Security just needs to be strengthened. They assert that what the UN is proposing is undemocratic and is designed to privilege corporate and philanthropic interests (Langrand, July 9/updated July 14, 2021). Within a few days of convening, the International Panel of Experts on Sustainable Food Systems withdrew from the Summit stating, “We do so with regret: the world urgently needed a food systems summit, but not this Summit” (IPES July 26, 2021, p. 2).

These analyses beg the question of how local food systems can be different from the industrial system in terms of social justice values and power relations when the financialisation of food in global markets maintains control over food as a vehicle for profits and not as a requirement for human life (Zerbe, 2019, p. 166). Some of the research calls into question whether there can be food security without public food policies that are grounded in citizen engagement which democratises food sovereignty (Martorell & Andrée, 2019; Patel, 2009; Via Campasina, 1996). There is a significant amount of analysis that makes an argument for decommodifying both land ownership and food as the tools for establishing food system sovereignty (De Schutter, 2019; Vivero-Pol, 2017). There are many forms of removing food producing lands from the market place with several examples in the location of my research including farmland trusts and land conservancy covenants. There is also an effort underway with

local governments in this region to increase common ownership of food lands (CRFAIR, 2021). The impact of these efforts as a food sovereignty action is, as yet, minimal. This area of research begs a foundational question: As long as local food and its production is commodified in a global market place will the power relationship between local food and the industrial food system ever change? Hinrichs (2010) asserted a decade ago, “Ultimately, sustainable food systems will emerge from participation in every day practice. They must involve a collaborative and inevitably political process of inquiry and adjustment” (p.26). It is apparent in the literature that the commodification of land and both land-based and water-based food is entrenched in institutional structures such as trade agreements and international investment regulations that make efforts to attain food sovereignty at the community level a challenging endeavour.

Marketplace Interpretation of the Local-Global Dichotomy

There is considerable evidence in the literature that local food is only a niche alternative despite vast efforts by farmers, communities, and local food movement organisations to reduce the ever-increasing power of the industrial food system (Andrée, et al, 2014; Blay-Palmer & Koc, 2010; Connelly, et al, 2011; Donald, 2010; Sonnino & Marsden, 2005; Stroink & Nelson, 2013; U.S. Department of Agriculture, 2017; Wright, 2014). One researcher cautions, “Localization of food markets is a necessary but not sufficient condition for food sovereignty” (McMichael, 2014, p. 353-358). This claim is proving to have substance based on the evidence that is mounting in the United States with the development of local food hubs in some areas of the country. Local food hubs are designed to provide the infrastructure for distributing local food into the market place and addressing issues of small scale for farms that want to sell to retail and wholesale buyers. Many also have a social mission of increasing healthy local food to low income citizens (U.S. Department of Agriculture, 2017). They operate with various governance

and organisational structures including non-profit, cooperatives, and social enterprises (Berti & Mulligan, 2016). Despite years of growth in local food hubs in the U.S. from 46 in the year 2000 to 360 in 2017, it is reported that 97% of food still travels through centralised global market structures (Woods, et al, 2013, p. 2; Berti & Mulligan, 2016, p. 4). Similarly, despite the development of food hubs in the United Kingdom large supermarkets are still the destination of 77 percent of all food shopping trips (Berti & Mulligan, 2016, pp. 4-5). Perrett and Jackson (2015) assert that “food hubs alone cannot challenge industry norms and practices, and they can even aid the food industry in maintaining the status quo”(p. 8). They explain: “At the same time that food hubs further the development of local food supply chains and create market opportunities for farms, they can also run contrary to the bigger and longer-term goals of the local movement” (Perrett & Jackson, 2015, p. 8). They point out that U.S. food hubs are funded by government, private grants, and corporations. For example, Walmart has invested at least three million dollars in the development of food hubs as a convenient link in their supply chain to access fresh produce (2015, p. 8).

From an economic perspective, the link to global food marketing may improve business opportunities for small farmers without substantively changing the social and cultural significance of traditional foods in their original locale. The analysis of this phenomenon has led to coining the term *glocal* (Wilhelmina, et al, 2010). Glocal represents the concept that locally-based foods have been “improved” for global marketing. These foods are examples of a reproductive (non-binary) interaction between global and local food from a commodity perspective and their embeddedness in each other (p. 358). Wilhelmina, et al (2010) assert that this relationship is having a positive impact on food security among small farmers. Their assertion is another lens on the unique qualities of food as a commodity in the global

marketplace. Some researchers assert that food retains its ecology and other characteristics that tie the global food chain back to the spatial origins of the food (Morgan, et al, 2008, p. 8).

Whether or not these qualities attach food to *locale* and *place* adds yet another dimension to the discussion about the “placeless foodscape” created by transnational corporations and globalisation (Hinrichs, 2016; Winter, 2003).

From the perspective of externalised costs including loss of biodiversity and cultural diversity, however, the analysis of spatial origins is quite different. It brings into the discussion the dynamic relationship of industrial and local food that is affected by the scientific manipulation of plant genes and processing to eliminate seasonality and to standardise flavour and sizes of fruits and vegetables in the food chain (Morgan, et al, 2006, pp. 9-19; Slow Food, 2019). Unique genetic engineering has been developed to modify seeds so they accept the application of industrial pesticides. These changes imbue seeds with corporate intellectual property rights and change the localised nature and culture of food at its biological source with a view to homogenising the biology of food to give it a global identity rather than local (Clapp, 2016; Morgan, et al, 2006; Shiva, 2016; Slow Food, 2021; Via Campasina, 2021).

Some of the literature challenges a reductionist interpretation of the values assumed to be embedded in local food and calls for a generation of research that examines the marketplace in the context of multiple dimensions of social factors and actions (Krippner, 2001; Morgan, et al, 2006; Sonnino & Griggs-Trevarthen, 2013). Although not referring specifically to food systems, Krippner takes exception to the notion that the ‘high marketness’ of the global industrial market place represents reduced social relationships. She claims, “In this sense, the state, culture, and politics are contained in every market act; they do not variably exert their influence on some kinds of markets more than others” (p. 785). She challenges a reductionist understanding of

embeddedness and calls for research that examines market not as a priori but as contextually constructed in a complex of social relations (p. 780-781). Krippner's lens provides another perspective on the importance of examining the conflation of local food with sustainability and other values (Born & Purcell, 2006; Sonnino, 2013) as part of food system change and transformation. This lens is especially significant in analysing and understanding the marketplace that has redefined food as a commodity. The impact on local food is profound. Hinrichs (2000) was one of the first to draw on the work of social economists to apply marketplace concepts as analytical tools for comparing the nature and meaning of local and industrial food market transactions. She adopted the concept of *embeddedness* from the work of Block to inquire into how non-economic factors are essential to understanding that markets of all types, whether local or global, are socially constructed (p. 296). Block (2014), inspired by the economic anthropologist and sociologist Karl Polanyi, asserts that the processes which make up the economy work better when they are embedded in institutions which, whether local or global, economic or non-economic, reflect social and cultural values (Block & Somers, 2014). The challenge occurs when markets are not regulated or when regulation serves corporate control and profit, diminishing the role and influence of community values world-wide. This perspective is supported by other research that points to the economic concept of embeddedness as a valid framework for understanding the values that characterise a local food alternative to the industrial market place (Sonnino & Marsden, 2005, pp. 182-185). In this frame, the assertion is that both local and global food systems are affected by *instrumentalism* and *marketness*, values that are embedded at either end of a continuum in the market economy. In this framework, marketness represents high value placed on monetary gain and instrumentalism at the other end of the continuum reflects high value placed on social and cultural priorities (Block & Somers, 2014).

Different types of market arrangements will place at different points on the continuum. For example, grain trading on the stock market may place at the very highest level of marketness and certified organic bananas may place on the other end of the continuum closer to instrumentalism, while fair trade coffee may place somewhere in the middle. The problem with this conception, in my view, is that while it may accommodate the variability that may be assigned to food as a commodity it within the commodity marketplace, it fails to accommodate the complex tensions that intersect a every point along the continuum depending upon power relations within the system.

In summary, this section of the literature highlights the complexities of defining the term local in the current food system environment. It deconstructs the commonly held view in the local food movement that there is a binary relationship between local and global food. Using an interdisciplinary lens it questions assumptions about scale and challenges inherent values in the local food sector. And it examines the qualities of local food in the marketplace. It discusses the ambiguous role of local food hubs in localising food. Contesting the binary categorisation of local and global food relates directly to the assertion that localising food is not in itself enough to solve the problems with the industrial food system (Hinrichs, 2015). It introduces the consideration of whether local food can be global, but not industrial. In the next section I present literature that contextualises local food system change in an interdisciplinary frame.

Theorising the Localisation of the Food System

As local food research has progressed over time, it has introduced distinctions between a *placeless foodscape* and *place-based food* (Feagan, 2007; Fonte & Cucco, 2019; Morgan, et al, 2008, p. 186). This theoretical frame proposes a conceptual variance between ‘defensive localisation’ which tends to focus on protecting localised food and ‘diversity-receptive

localisation' that focuses more on global-local relationships and an openness to change (Hinrichs & Lyson, 2008 pp. 36-37). This theoretical positioning opens the door to new definitions of both local and global from a localised food system perspective, and in this sense adds an important dimension to the changes that my research is initiating. A decade and more after her first socio-economic analyses, Hinrichs asserts that distinguishing place and locale as ontological cousins, not twins, may be the key to "redressing harms associated with a global neoliberal food and agricultural system" (Hinrichs, 2016, p. 760). She explains that drawing on this geographic distinction brings a combined nature and culture lens to the interdisciplinary study of the *local* concept; it brings into focus the institutional and political forces that affect the production of food in an environmental context (p. 760). The juxtaposition of local and place combines proximity with social and ecological decision making and applies it to fixing the food system on a large scale, something that the placeless global industrial system has evaded from its locus of control.

In this same vein, Feagan (2007) points to place-based research as a necessity in understanding the localisation of food (pp. 27-28; see also Andrée, 2014; Feenstra & Hardisty, 2016; Hinrichs, 2010; Krippner, 2001; Winter, 2003; Wright, 2014). He cites research that equates shortened food supply chains, personalised provenance, and local farming practices with the quality advantages of the regionalisation of food. Recognition of place becomes a perspective for assuming the integration of natural and social benefits (Feagan, 2007, p. 26); it is the space for agro-ecological and socio-geographic research. He cites a plethora of literature that identifies food sheds, terroir, community supported agriculture², community food security, and food circles

² Community Supported Agriculture (CSA) is a marketing method used by some farmers. The farmer offers to provide a regular supply of farm products in exchange for an advance payment by individuals. Some farms offer

as just some of the concepts that link regional spatiality with environment and ecological pride of place and quality (p. 27-29). He asserts, the “attributes of environmental integrity, economic viability, and social equity all converge around particular places” (p. 28). This assertion is one that becomes the central direction of my research. He traces the disappearance of place in modernist geography and says its re-emergence in geographic research is urgent. I reflect upon this assertion along with historical and traditional food system knowledge in Chapter 5.

Feagan also points to place-based research as a necessity in understanding the localisation of food in a rural development context. He explains, the globalisation of food represents one loss in the complexity of fundamental losses of social and cultural bonds, disintegration of communities, and ecological degradation (pp. 30-33). Deeper understanding of the food system leads to conceptualising several spheres of embeddedness: social, natural, spatial, and financial (Feagan & Morris, 2009). This analysis presents a challenge for local food research that, I believe, is central to making progress in the re-localisation of the food system. Part of the challenge is not to get caught up in the binary of local versus global industrial, but, rather to explore and respect the integrity of local food in its own right with all that it might encompass including the importance of scale (Born & Purcell, p. 20)

A complex analysis of the dynamic relationship between local and place in the ontology of local food research brings into focus a taxonomy based on three domains of proximity: geographical, relations, and values (Eriksen, 2013, p. 48). Each domain adds elements to the place-based concept and together they provide a complementarity that accounts for the complexity of creating a local food chain (pp. 50-53). Case study research in Pennsylvania,

tours of the farm and other farm experiences as part of the arrangement. CSAs provide cash for farmers at the beginning of the season and an assurance of a specified amount of food grown on the farm to those who sign up.

United States (Brinkley, 2017), provides an interesting example of the embeddedness of geography, relations, and values which are complicated by the many networks that farmers engage in through a multiplicity of distribution mechanisms, including farmers markets, wholesale to grocers and restaurants, links to institutions, and participation in food bank gleaning initiatives and community-based food education. This research indicates that farm-to-farm networks are often overlooked threads in food policy (Brinkley, 2016, p. 323). It provides evidence suggesting that food localisation does not necessarily follow the linear/continuum of economic theory but, rather, functions on the basis of a complex intersection of economic-social-cultural-environmental values. Emerging metrics of the short supply chain overlap with identification of place, using indicators of geographical distance, number of intermediaries in the supply chain between the growers and the eaters, the product identity, and the degree of control of food producers/wild harvesters and others who live in the region (Schmitt, et al, 2018).

In their analysis, Sonnino and Marsden (2005) assert that local food is in a “battlefield of knowledge” involving “the power relations within and between food chains” (p. 194). Morrisey and Dunphy (2015) explore these ideas, distinguishing the supply chain from the value chain, going beyond the operational focus of supply chain processes, to include firms, distributors, and regulators (including governments) that affect their products (p. 48). They contend that the value chain encompasses the operational aspects of the supply chain, plus the monetary and power relations between and among actors in the socio-economic structures in which they are operating. My research suggests that the shortened supply chain is the mechanism for moving from place-based theory to practice, with ‘place’, *not distance*, being the *unique* spatial location of the short supply chain. It identifies how a shortened supply chain can lead the

way to changing the place of local food globally, by bringing all three domains—geography, relations, and values—to its development. I discuss this in more detail in Chapters 5 and 6.

Expanding on local food marketness theory, this research also highlights how the short supply chain sets up an interaction among values to create a marketplace, rather than fitting into one that is industrially created. In food localisation research which subscribes to economic theory that supports embedding social and cultural values in the market place and associated regulatory policies, price and social influences are the respective end points on a continuum; price is dominant in high marketness and social influences are dominant in high instrumentalism (Hinrichs, 2000, p. 297). I have identified the limitations of this theory from an interdisciplinary perspective. At the same time, it does provide a guide for considering the operation of a short local food supply chain. Hinrichs' proposition that socio-economic dimensions which are as much at play in local food system/network transactions as in the industrialised market place has spawned a plethora of analysis of embeddedness in local food research. Low marketness does not mean that price does not matter; instead it means price is not dominant but is still present as one of several factors affecting transactions. The assertion is that marketness and instrumentalism are social constructions including non-economic qualities that exist in all market transactions to a greater or lesser extent. According to Hinrichs' (2000) understanding, this continuum is an antidote to the conflation of spatial relations and social relations in food localisation (2000, p. 301). Using examples from two case studies, Hinrichs explains that while farmers markets are a mainstay of local food systems, they operate on the same values of profitability as commodity-based markets; farmers participate in farmers markets both for the monetary benefits of circumventing distributors and wholesalers and the social benefits of familiarity with community (2000, p. 298). She notes that farmers markets are not playing a

significant role in decommodifying food (Hinrichs, 2000, p. 300). This theoretical frame invites a deeper analysis of how the organising values of a localised food system can be different from those of the industrialised food system and more impactful from a sustainability perspective.

Some researchers assert that equating alternate food networks with a higher level of quality on the embeddedness continuum is in itself deterministic (Winter, 2003; p. 25). Winter reports on case studies that he conducted in five different regions in England to test the reasons why people buy local food, and finds a narrower and more conservative association than is generally assumed in the literature. He concludes:

... it is open to question whether we can equate either the turn to quality or the turn to localism as the first steps towards an alternative food economy which will challenge the dominance of globalised networks and systems of provision and herald a more ecologically sound agricultural sector (Winter, 2003, p. 31).

It is necessary to be reminded again that despite these analyses almost two decades ago, local-focused food systems still have not made strong inroads to challenging the industrial food system. As is noted in the literature, local food is still a very narrow niche market place. Reasonably, it would seem that this lack of foundational change is related to the strength of the neoliberal political and economic values and neocolonial aspirations underpinning the industrial system (Andrée, et al, 2014). The local food movement oppositional aspirations to institutionalised power structures, including those reflected in classical economics are, so far, having only limited impact (Vivero-Pol, et al, 2019). Theoretically, the short supply chain is intended to create a new *middle space* in these oppositional ideologies (Clapp, 2016, p. 7). These are the spaces in the global system where corporate concentration renders invisible the place where food is grown and where it is eaten. The corporatisation outcome is a long supply chain.

For example, Cargill which is the largest privately owned company in the world and employs people in 67 different countries (p. 108), is fully vertically integrated from seeds and fertilisers, through contracts with farmers, to grain trading, to animal feed production, to beef processing, to processing packaged meats, to shipping (Clapp, 2016, pp. 108-111). This supply chain renders the social, nutritional, cultural, and biological origins of the food invisible.

The European Union has created a Common Agriculture Policy that recognises the role of a short food supply chain as an instrument of sustainability. The policy acknowledges that small farms play a pivotal and dynamic role in building relationships and achieving environmental goals (Canfora, 2016, p. 403). It recognises the difference between large agribusiness and small scale food production and agricultural holdings, and market demand for the latter. It provides financial and legal instruments that support small producers “operating in local areas towards an environmental and social approach” (p. 403). This policy framework balances the financial considerations of the economies of scale of industrial food production with the role that the short supply chain plays in achieving public interest in reduction of greenhouse gas emissions, increased biodiversity, and systems development that builds relationships among the small scale businesses (p. 404). The policy framework at a high level of governance supports special food safety and labelling regulations for food that is produced and sold within specific regional territories (p. 405). In so doing it imbues a definition and value that is socially and politically institutionally defined as spatial.

The research has not yet advanced to the point of testing the characteristics of successful short local food supply chain models but it is building a library of components that appear to contribute to success. It asserts that building relationships is key, including citizen involvement and the development of direct relationships among producers and between producers and the

other players in the local food sector (Rent, et al, 2012). The literature asserts that these relationships contribute to food democracy in a way that is beyond the goals and scope of the industrialised food system and they have the potential of creating a supply chain that is not based on narrow marketness values but, rather, encompasses a complex of food sovereignty values (Rent, et al, 2012, p. 304).

The research infers that short food supply chains produce many positive impacts including competitive prices with those in the industrialised chain by reducing the number of firms between producers and eaters, by retaining capital and income in the local community, and by increasing employment rates. For these reasons it is theorised that they strengthen local economies and generally increase the sustainability of communities (Todorovic, et al, 2018). Case study research in the northern hemisphere indicates that key to local food system resiliency are buyer-producer relationships and attention to a distribution system that addresses the uniqueness of the small-scale (Dunning, et al, 2015; Aubry & Kebir, 2013). It asserts that the greatest barriers to setting up a successful short food supply chain is lack of knowledge about specialised internet technology, and accounting skills, and unreliable distribution (Todorovic, et al, 2018, p. 2).

A case study in Spain points to characteristics that have been core to the planning goals that participants in my research have considered in the development process: create equitable distribution of power across the supply chain, build the economic viability of small primary producers, maintain or increase the diversity and quality of products, increase diversity of markets, reduce management, marketing, and logistics costs, increase opportunities for new small producers, and adopt new technological innovations to manage logistics that are consistent with the goals and values of the supply chain (Yacamán Ochoa, et al, 2019).

In summary, research shows there are increasing and increasingly critical problems with understanding what local means in relation to the operation of the global industrialised food system. The theoretical understandings of a local food system are still emerging in the research literature with interdisciplinarity providing the holistic frame that is needed.

Summary

The advancement of the global industrial food system, which is now endemic in our food culture, is rooted in a multi-decade, multi-location research project that encompasses political, economic, and sociological objectives. The process came to be called the Green Revolution. It was initiated and tested by powerful institutions and individuals in places other than their own and has grown into a sophisticated corporately-owned structure primarily focused on the generation of profit through commodity trading and control of the system through vertical integration and vast equity holdings. In this system, that the commodity is food is irrelevant. Food is a desirable product for industry because it is used by everyone on the planet every day of the year. The literature includes perspectives on global outcomes that are severely impacting socio-ecological structures and relationships world-wide. It provides a large body of evidence indicating this system is responsible for significant negative impacts involving ecological, economic, cultural, social, and environmental degradation. A counterpoint to this highly structured system are thousands of small, mostly disconnected efforts to preserve and advance localised food. For the most part these efforts show the turn to re-localising food as a probable antidote to the problems with industrialised food.

The literature offers a detailed analysis of what local means in this context and some of the problematic assumptions that are attached to it. One of the most ground breaking analyses in this regard is the local trap of assuming that a local food system inherently reflects different values

from the industrial system, and is more sustainable. My research threads this analysis into the complex process of re-localising the food system. In the next chapter I present the structure of my research and discuss the importance of process in this only partially-mapped territory.

Chapter 3: Methodology and Research Methods

This chapter describes the theoretical framework and methodology I used to address my research goals and questions. I describe the suitability of using Participatory Action Research (PAR) to organise the convergence of academic research and collaborative localised action in the context of informed change. I discuss the dynamic relationship between the research methodology and the conditions for change, with a focus on the role the methodology plays in activating change, a quality that is an intended outcome of PAR.

In the following sections on data collection and analysis, I describe the objective-subjective reflexivity of the research methodology and the reflective processes involved in analysing the data and activating change in a PAR context. The scope of the analysis explicates the collaborative structure of the research and the power relations that position participants in a subjective-objective dialectic of change. These sections provide the framework for a discussion in Chapters 4 and 5 about the practice of PAR which is “constructed in social relations” (Kemmis & McTaggart, 2000, p. 582). An important aspect of this research methodology is to understand “the form of reason we employ when we have to act in complex situations, knowing that our actions and their consequences will be judged in terms of complex and sometimes conflicting values” (Kemmis & McTaggart, 2000, p. 583). One of the goals in my personal standpoint in this research is “to consider how things could be different in the future—so that actors may have different choices from the ones forced upon them by “the ways things are” currently” (Kemmis & McTaggart, 2000, p. 584). The objective is not just any action but, rather, transformative action that finds new ways of thinking about the conflation of global with industrial, resulting in a local-global binary, and which embed dynamic reflection and

collaborative relationships as the instruments of change (Hirsch Hadorn, et al, 2006; Kemmis & McTaggart, 2000).

Unexpectedly, the conditions for change shifted uniquely toward the end of my research project with the onset of the coronavirus disease pandemic, commonly known now as COVID-19. I extended data collection in order to include field observations of pandemic-related food activities. As I present the data in the next chapter I will discuss an apparent shift toward local food and the food system more generally that occurred simultaneously with the declaration of the pandemic. Documenting this shift precipitated adaptations in my methodology prompted by health protocols that included physical distancing and social isolation and by the sheer number of ad hoc local groups which formed to address a variety of different food-related pandemic impacts. In practice, the blending of critical ethnographic techniques into the PAR framework was the most effective way of observing the pandemic-related localised reactions and responses in the food system. I discuss how the blending enriched both the data collection and analysis in terms of revealing structural obstacles and organisational responses. It appears that the pandemic has accelerated local food actions based on a sense of urgency in the relationship between the food sector and the changing climate.

Qualitative Inquiry

As mentioned in Chapter 1, my study is qualitative and set in the Capital Region of British Columbia, Canada. Location is an important quality in qualitative inquiry as it provides a context for creating and understanding meaning (Savin-Baden & Major, 2013, pp. 13-14). To the extent that participatory action research is qualitative, location is also foundational in defining the population involved in the research. Location has been significant since the early distinction of PAR from other research methods in its commitment to actions that push against cultural

homogenisation imposed by industrial globalisation (Fals-Borda, 2001). The aims include the “deconstruction of global uniformizations” (Fals-Borda, 2006, p. 34). In sum, the distinctiveness of locale is a vital part of the qualitative dimension of PAR, generally, and of my research specifically. It is not incidental that local food research grapples with the meaning of *local* and its implications in differentiating between local and industrial food. One only needs to consider the homogenisation of food—types of food, varieties, sizes, shapes, flavours, and colours—to gain personal access to this discussion. Many people also relate to the discussion through the colonisation of their food and its de-culturation by the industrial food system.

At the same time as qualitative inquiry recognises and validates locale, it equally bridges the tensions inherent in differences among participants and between locales (Denizen & Lincoln, 2000, p. 201-20). It creates these bridges by entwining observation and interpretation (Gergen & Gergen, 2000, p. 1027). In my focus on qualitative inquiry I have specifically used *collaboration* as a tool for deepening the processes of observation and reflection so that homogenization of different perspectives is limited to the extent possible and, rather, uses differences to advance change in a way that provides room for inclusion of perspectives across participants and between and across locales. This process is key to the data analysis in my research (Cornish, et al, 2014). Using my skills as a researcher I have tried to develop collaboration as a mechanism not only to bring voices together but to use the ensuing tensions to incite continuous change and enhance acceptance that validity lies not in quantitative measures and ideas about objective truth but in interdependency of meaning (Gergen & Gergen, 2000;). Shared meaning, rather than single truths or homogenisation of thought, depends upon a conglomerate of conditions including shared values, prolonged engagement, reflectivity, collaboration, and emancipatory information (Cho & Trent, 2006; Reason & Bradbury, Savin-Baden & Major, 2013; Smith, 2005). In the

case of my research, qualitative inquiry is not seeking one-dimensional solutions and meanings, but rather, insightful changes that address a complex problem. I discuss how the methodology supported this aim in this chapter.

Qualitative research presupposes that values matter in research, in the questions that are asked, the theory that frames the research design, and the outputs and outcomes. As a qualitative study, this dissertation examines food system values, relationships, and shared meanings (Savin-Baden & Major, 2013). In Chapter 5 I discuss how shared meanings mobilised actions. My application of qualitative inquiry has required “an intuitive sense of what is going on in the data, trust in the self and the research process, and the ability to remain creative, flexible, and true to the data all at the same time” (Corbin, 2012, p. 16). This requirement implies that in order to be “true” to the data, as a researcher I must have a sense of the data’s meaningfulness.

Meaningfulness, though, cannot just be up to the researcher; there must be a shared sense that is embedded in the research process. Like knowledge, meaningfulness is constructed, changing as the knowledge changes and, ultimately, knowledge changes experience (Lincoln & Guba, 2013, pp. 55-58). Localised and industrialised food systems are in a dynamic relationship, perhaps never more so than they are in the present climate change and pandemic emergencies.

Qualitative inquiry gives my dissertation the scope to explore the perspectives and values that distinguish a local food economy from the industrial one, without necessarily losing global food connections. In both this chapter and the next I discuss the ongoing challenge in local food research of defining and understanding the meanings that underlie food system localisation.

Theoretical Framework

Critical Social Theory (CST) frames my research commitment to interdisciplinarity and the democratisation of knowledge (Agger, 2013, pp. 10-11). CST establishes the ontological link

between participatory research and transformation (Reason & Bradford, 2006; Kemmis, 2006). The aim is for the methodology to set up a field of action that is “deliberately critical and reflexive” (Kemmis & McTaggart, 2005, p. 578) with aims to change the unfolding institutions and structures instead of creating knowledge as a mechanism for control. In my specific research endeavour, CST is ontologically consistent with the character of food as a physical, social, and cultural phenomenon and with the social justice issues that are embedded in the political dimensions of food. Food is much more than the economic commodity that defines it in the industrial food system including its changing price in the daily stock market and its quantitative performance in the calculation of the country’s GDP. Without a critical interdisciplinary perspective the scope of my inquiry would be epistemologically reductionist, and the many socioecological dimensions at play and their intersections would be diminished.

CST’s support for inquiries into change begins in everyday lives with “comprehensive structural understandings of the social” (Agger, 2013, p. 13). In my research it is the framework for recognising that the objectification of food as a commodity is instrumental in reproducing the structures that maintain the industrial food system. It is in this context that understanding how industrial food has achieved its status in the cultures of the northern hemisphere and undermined the most basic foods in the southern hemisphere are invisible outside the critical social theory framework and methodologies of change (Strydom, 2011). The theory matches with the dialectical relationship among these structures and the institutionalised power relationships that have a gripping hold on the prospects of changing the system. In this dynamic and dialectical frame my study was not static; it matured as the data collection evolved and with real time analysis, often having to do with equalising power relations and emerging changes in the field site. It further evolved as the COVID-19 pandemic—a disease that spread easily around the

world leaving no population untouched—interjected new understandings of globalisation generally and the food system specifically. Interestingly, the pandemic uncovered the vulnerability of the global industrial food supply chain and highlighted the lack of institutional regimes in organising local food production and distribution. In this and subsequent chapters I discuss how this unveiling had the effect of empowering organisations and individuals to mobilise around making foundational changes in the food supply chain at the community level.

Participatory Action Research

As I have noted previously, among the many complex questions that remain unanswered in local food system research, I focus on those that relate to the obstacles and enablers in developing a *place-based food system*, including the gap in infrastructure and relationships needed to create and support a short supply chain. Using PAR I have explored how a *place-based food system* intersects with the *global food system* in a way that reflects the values that are embedded in the food sector by local food researchers and advocates at that intersection.

From my epistemological stance, PAR as a methodology ensures coherence and consistency across the research components and participants. PAR is defined with many qualities, including that it “is a living, emergent process that cannot be predetermined but changes and develops as those engaged deepen their understanding of the issues to be addressed and develop their capacity as co-inquirers both individually and collectively” (Reason & Bradbury, 2008, p. 4).

PAR is not a relativist ontology. At its core, PAR supports the perspective that not all changes are equal or good. It is because of this perspective that the participants are not subjects of the research; rather, they are the creators of the research, the knowledge it produces, and the changes it makes. In a critical social theory framework PAR is a way of doing research that is

about making changes at the societal level that reflect changing participants' understandings and knowledge of those changes. It is a form of research based on the premise that the research can change the way of knowing and doing research. In this sense it represents a commitment to a dialectical approach to changing the political and economic institutions that control individual experience and the power structures that maintain seemingly unchangeable conditions (Smith, 2005). In contrast relativism is often used to justify the status quo, even as new information emerges. PAR seeks to find the intersections of differences that lead to new social knowledge as an instrument of collective change. This aim is key to understanding the localisation of the food system in relationship with global diversity. PAR grows out of postmodernism with a view to embedding transdisciplinary inquiry, critical analysis, and reflection into changes that promote sustainability (Hirsh Hadorn, et al, 2006).

PAR is committed to the right of individuals to collectively define the meanings of their experience as part of the democratisation of knowledge which is the basis of sustained changes. PAR operationalises the theory that reflexivity is a key to changing the construction of an aspect of reality, in this case dependence on the values of the industrialised food system which continue to dominate through institutionalised forces and their narrative of the green revolution.

At its core, the intentions of PAR are transformative. Its founders understood the need for decolonising theory and praxis (Fals Borda, 2006; Lykes & Hershberg, 2014; Rappaport, 2020; Roberts, 2000). They developed it with a consciously democratising aim, taking knowledge beyond practical thought to action (Reason & Bradbury, 2001, p. 2). More than action, though, it is "a practice-changing practice" (Kemmis, 2009, p. 467). PAR inquiries provide a framework in which "critical explanation or explanatory critique" (Strydom, 2011, p. 132) are recognised as essential components of PAR's socially transformative qualities (Fals Borda, 2007, p. 29). As I

discuss in Chapters 4 and 5 the power of the knowledge that PAR research produces lies in its reflexive qualities and critical engagement. Examining food system values was part of the reflexive process in my research that opened participants to reflecting on the benefits of collaboration. “Reflective knowledge creates collective autonomy and responsibility” (Park, 2006; p. 89). In short, the process of PAR creates the fertile ground for producing sovereignty. While it cannot guarantee democratisation, PAR’s goal is to produce action-based autonomy that expands dimensions of power to include “solidarity and morality courage, as well as control” (Park, 2006; p. 91). It is the involvement of the participants not only in the transformative outcomes but in the process of change that embeds validity into the research (Strydom, 2011; Kemmis & McTaggart, 2000). Throughout my research I followed paths of inquiry that appeared to make the “most critical sense to participants” (Kemmis & McTaggart, 2000, p. 592). Two decades ago Kemmis & McTaggart (2000) predicted:

It [PAR] will become more theoretically sophisticated in the sense that it will involve a more complex view of what social practice is, how particular social practices are shaped, and how they can be transformed by collective social action” (p. 593).

In Chapter 4 I describe the process of methodological transformation as it unfolded concurrent with my data collection and analysis. I discuss the impacts that changes in power relationships had on the PAR practices in my research. And I analyse the interpretation that I and other participants have brought to the research results; this analysis is framed in the transactional and transformative qualities of critical social theory in the final chapter of this dissertation.

As I have engaged in the layering of method and interpretation throughout the research I was hounded by debates in the literature about validity and authenticity which involve a commitment to disrupt the status quo (Guba & Lincoln, 2005, p. 208). In the concluding chapter

of this dissertation, I discuss the reflexive attention I brought to whether I was inadvertently compromising the complexity of the research questions in order to manage the complexity of the power relations within the collaborations. PAR is a methodology that forces an examination of how power relations in research affect research into power relations. In the analysis of my research findings I discuss what this methodology means in the current postmodern context and what it means specifically in local food system research and action.

Coming from the critical social theory tradition, PAR and critical ethnography, share the aim of disrupting institutionalised power relations (Smith, 2005). PAR methodology makes “visible how we are connected into the extended social relations of ruling and economy and their intersections. ...the product should be ordinarily accessible and useable” (Smith, 2005, p. 29). It should provide a map for those in the place where it is conducted and for those outside the place who want to know more about how their terrain can be a focal point in creating global change through transferable results. Institutional ethnography, a branch of critical social theory, is a method of inquiry that aims “to enlarge the scope of what becomes visible...mapping the relations that connect one local site to others” (Smith, 2005, p. 29). I believe this process is consistent with attention to how a localised food system networks with other localised food systems and in this way addresses the divide between local and global that is discussed in the literature. I delve into this topic in Chapter 5.

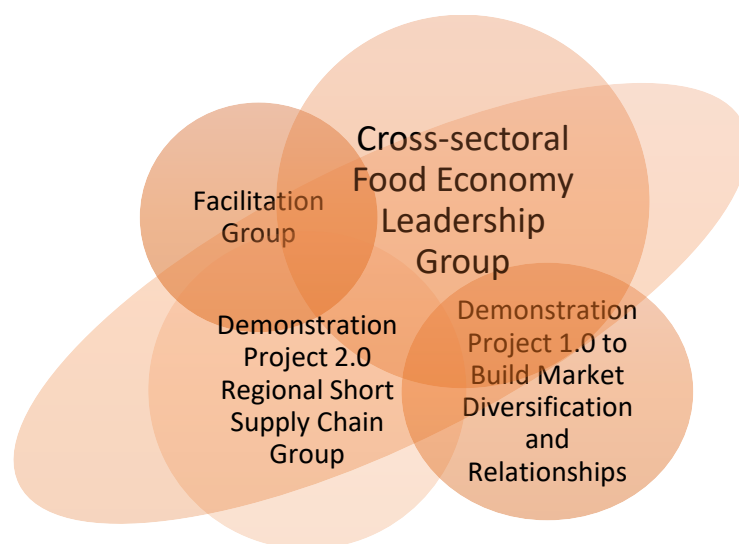
Building Participant Collaboration

In general, PAR is “...understood as a collaborative practice of critique, performed in and through a collaborative practice of research...” (Kemmis & McTaggart, 2005, p. 578). At its best, participatory action research is an inclusive process of transformation (Kemmis & McTaggart, 2005, p. 579). In my research, the architecture of PAR took on the character of a

complex venture using collaboration to embed living knowledge in a community of practice and value-mediated actions (Guba & Lincoln, 2005, p. 196). In the relationships that developed in the process of the research the aim was not only to build “a collaborative sense of agency but also a collaborative sense of the legitimacy of the decisions people make, and the actions they take, together” (Kemmis & McTaggart, 2005, p. 578). As the analysis in Chapter 5 indicates, the priority of relationships in the local food economy was expressed and defined by the research participants in the process of building consensus around the values that underlie their collective sense of a value-based local food system. It is this values proposition that distinguishes the local food system plan from the emerging adoption of “value chain” by the global industrial food system. This distinction came clearly into focus as the ethnographic data accumulated with the onset of the pandemic. *Without a shared sense of the values proposition, place alone would not have defined the emerging local food actions during the pandemic.*

I developed a collaborative structure to promote inclusion, active participation, and respectful power sharing. Figure 2 illustrates this structure and the collaborative circles which explicated the participation process; participants became engaged in the research and built leadership capacity into the systems change objectives. The figure illustrates that collaboration was not linear and involved fluid overlays of engagement that cross-cut the collaboration groups as actions unfolded and evolved.

Figure 2: Collaboration structure of the research



As can be inferred from the diagram, building and coordinating the relationships within and among the groups that played distinct and interdependent functions in the research did not happen quickly but they were and continue to be essential in achieving change action goals. Some participants were in only one of the groups, some in two, and some in all four. I established two of the collaborative circles as part of the research design at the outset of the research. One was a small facilitation group and the other a cross-sectoral leaders group. The Facilitation Group comprised a volunteer expert in social innovation and collective impact, two representatives of Capital Region Food and Agriculture Initiatives Roundtable (CRFAIR), one of whom provided administrative support paid for by this backbone local food movement organisation, and myself. As the principal researcher I designed the structure and provided expertise in interdisciplinary research, PAR methodology, and the local food economy. This Facilitation Group developed a collaboration agreement that described the priorities and principles underlying the working relationship of the group. The primary aim of the group was to facilitate the participants' reflexive and reflective processes, and activation of change. The

intention was that this group would support collaboration values by modelling collaboration best practice. I had previously worked with these collaborators and believed that because we had shared values about the local food economy we would be able to move smoothly into organising and facilitating the work of the leaders group. The functioning of this collaboration added a dimension to the research methodology that had a dynamic impact on the research, and unveiled struggles among the individuals as control issues bumped up against building broad leadership capacity among others (Foley & Valenzuela, 2005).

The first task of the Facilitation Group was to initiate the cross-sectoral leaders group of stakeholders that would lead the local food economy change process. The Facilitator Group named this component of the research *Closing the Supply Gap* (CSG) in order to give the work an identity in the region. In consultation with others in the local food movement, I contacted potential participants based on the following sectors: farming, grocery and restaurant, institutional food service, food processing, culinary arts education, public policy, and financial investment (both for-profit and non-profit). After identifying individuals, I conducted individual discovery interviews with them to share information about the initiative and gather information about the scope of their experience in the food sector and perspectives specifically on local food. The CRFAIR administrative staff person from the Facilitators Group attended the interviews and contributed content based on her experience as a small-scale, local food commercial distributor in the region. Upon completion of the interviews, I constructed a grid for selecting participants based on three metrics: level of interest in creating change in the local food economy, level of influence in their organisation and/or among their stakeholder peers, and leadership experience. I worked with the others in the Facilitation Group to apply the metrics. The selected stakeholders were invited to attend an introductory meeting to discuss the goals of the initiative and to orient

among themselves to their various perspectives. An anchor in the Leaders Group was Thrifty Foods, an international grocer owned by the Empire Company Limited with a local food focus in their grocery stores in the region. The Facilitation Group organised the meetings of the Leaders Group, supported its agenda with expert information, and facilitated discussion at the meetings. This initial group was encouraged to suggest others they would like to have included in the group and through time the group has been open to all their suggestions. As discussed in Chapter Four this Leaders Group and the Facilitation Group are continuing into the next research phase.

At the initiative of the Leaders Group a third collaboration group was established a few months into the research. It took the form of a Demonstration Project to test obstacles and opportunities associated with small producers diversifying their markets to include grocery buyers. The initial group comprised 10 regional market garden farmers and the Local Food Manager for Thrifty Foods in British Columbia. The primary aim of Demonstration Project 1.0 was to identify specific supply chain obstacles preventing the entry of locally produced fresh food into the mainstream grocery and institutional market stream. A prerequisite of diversifying markets is to increase regional food production and build a currently non-existent distribution system that manages risks both for producers and grocers. At present 97% of farmers in the region sell only direct to eaters in the region. Diversifying their market streams is key to building a local food system that de-marginalises local primary and secondary food production.

Data Collection

The collaborative structure I applied within the PAR methodology framed the data collection throughout the study. It defined the key informants, the settings for data collection, and the techniques I used. It was the primary mechanism for identifying actions and making changes. In this capacity everyone involved in the collaboration was positioned both objectively

and subjectively within the research. They were acting as part of this reflective and reflexive process and from their personal experience and knowledge in the food sector. They were increasing their knowledge “as practitioners in our everyday worlds into reaches of powers and relations that are beyond them” (Smith, 2005, p. 49). The research design provided questions about “what to look at and where to look” (p. 51) and it did not take very long for the participants in every group interaction to collectively identify the significance of relations and relationships within the sectors and institutions that define the food system. Sharing this understanding in a setting that is research-based and prolonged opened the participants to collectively exploring what Smith (2005) calls the *relations of ruling*. Although I did not use these ontological terms when facilitating conversations, once they had self-identified relationships as foundational in any change to the system, I did encourage examination of these relations in the context of framing where to look for disjunctures in the food system that can be used to separate local food from industrial food and to consider how these openings could be used for institutionalised change. As practitioners in this process, the participants were able to use the research to frame and focus their collective process, the impacts on their particular component of the system and everyday actions, and the meaning of change across the food system. This was a challenging process, especially as it relates to visioning a change in their relations and place at the juncture of the institutionalised industrial food system.

Focus Groups and Collaboration Meetings

My strategy was to collect data in ways that are consistent with PAR principles of supporting both participation and collaboration. For most of the collection, I used focus groups and larger participant collaboration meetings in which participants provided information as much for each other as for the research. Focus groups are, however, different from collaboration

meetings. I structured them to address prior defined questions which grew out of the literature and the collaboration discussions. In this differently-structured context focus group participants shared understandings of food system challenges and they considered how those understandings could be used to make change. That they heard each other was key to developing food system leadership skills, creating shared meaning, and democratising the knowledge that the research was building. This process meant that I was not the sole interpreter of the information that was flowing through the research and the knowledge transfer that occurred iteratively within the data collection. The themes that emerged from the focus groups also became important triggers for discussion at the collaboration group meetings, reinforcing the dynamic production of data throughout. A key output of these discussions was the production of a values proposition for a local food system. Another was clarity about the extent of fragmentation in the local food supply chain and the need to establish a systems approach to the local food economy. Actions were identified and changes began to emerge from the outset. Perhaps the most challenging change has to do with taking a systems approach. It is a structural concept that is not characteristic of the local food sector in this region or people's everyday experience in that sector. It is notable that use of the term "food system" in the research literature has tended to relate only to industrial food. This concept, what it means in terms of actions, and how it takes form in a local food economy was taking hold in the later stages of the research. It seemed to become more meaningful with the sector's experience of the COVID-19 pandemic and supply chain issues.

Field Observations and Directed Open-Ended Interviews

Secondarily, I used field observations and directed open-ended interviews to collect data. When the pandemic emergency was declared just as my research was beginning to wind down, I launched into a prolonged series of field observations as food-focused organisations of many

different types took the lead, by design and default, to respond to food supply issues. I attended 27 group meetings and I conducted several directed interviews to clarify information particularly having to do with grocers', processors' and restaurateurs' experiences.

This component of the research added unique emergent data to my study. Its significance was contextual in relation to the large body of data I had previously collected and the ongoing analysis and reflection that characterised the research process. These emergent data influenced my analysis in Chapter 5 by adding a level of deduction and a dimension of reasonable inference (Saldana, 2011, p. 94) about dependence on the industrialised food system that would not have been possible without the onset of a global pandemic. Most significantly, this component of the data collection showed that participants are ready to make system changes.

Local Food Economy Symposium

The final data collection was organised as a regional local food economy symposium. The Facilitation Group assisted the Leaders Group with developing the scope and logistics of the symposium through several months. Funding was acquired to engage an independent facilitator who had no prior involvement with the research or local food sector involvement in the region. A second person was engaged to handle administration of participant contacts, registrations, and related communication. The funder had no input into the organisation or operation of the symposium. The independent facilitator worked with the Facilitation Group to develop the symposium agenda, the primary questions for each session, and points of meaning as they emerged. The production and reproduction of questions evolved through generative, reflexive, and reflective processes involving all participants through the course of the symposium.

The event was billed as Closing the Supply Gap Local Food Economy Symposium and approximately 55 people from across the food sector in the region were invited. Because of the

pandemic the symposium was held through a video communications application. The independent facilitator was also expert in organising and operating the technology. The symposium was held through a sequence of five different times over the span of five weeks beginning 11 months after the declaration of the pandemic. There were two plenaries one at the beginning and the other at the end of the symposium, and three sub-sector mini-plenaries in between. A total of 55 individuals from across the food sector in the region attended the sessions, with not everyone attending every session.

The goals of the symposium were to: a) share understandings of the factors in the local food sector that frame its capacity to change, b) establish and enhance food sector relationships across the region; c) develop a shared understanding of actions that create change and identify levers for change, d) affirm the shared values proposition that underpins a sustainable local food system in this region, and e) expand regional leadership to guide the change process. These goals were tied to the research questions, knowledge transfer, and democratisation of change. The role of the established Leaders Group was to bring their experience and sector expertise to enliven the conversations. Each of the symposium sessions was two hours, online. I presented research information that supported the main objectives of each session using Power Point Presentations of about 10 minutes each. The sessions were voice recorded and transcribed.

At the first plenary, members of the Leaders Group rotated through the breakout sessions to facilitate discussions of participants' food sector experience since the onset of the pandemic. They initiated the conversations by briefly sharing food sector events they had observed or experienced in recent months. As intended, this process brought everyone in the plenary to a place of common ground in their pandemic experience which had changed everyone's food-related work in many different ways. At the same time it underlined the diversity of experience

among participants. It provided a base for participants to identify challenges to changing the food system and identify priorities for discussion. A real time survey was presented to participants to gather data on their attitude toward a small selection of key values that was emerging from the work of the Leaders Group.

The next three sessions of the symposium were focused discussions. The first was held with participants from the southern gulf islands within the region and involved participants in identifying desired attributes of a local food economy and priority actions that are particularly meaningful in that sub-geographic area of the region. The second was held with participants from the western coast of the region which borders the Pacific Ocean. It followed the same discussion framework. The conversations were notably very different in these two sub-regions. The third mini-plenary was held with participants involved in specific parts of the food sector. This session focused on identifying opportunities for increasing the potential of the local food economy, things that are getting in the way, and priority actions from the various perspectives. The closing plenary brought two main questions to the participants for plenary discussion: what is stopping the local food economy from developing? And what can be done in the next year to bring about changes that will strengthen and advance the local food sector based on the values proposition? As I discuss in the next chapter the overarching theme of food system values is food culture. Priority actions were identified and participants decided that Demonstration Project 2.0 would be set up to test the actions. A task group was formed at this session charged with framing the regional demonstration project and developing a workplan.

The framework and related workplan that were created is the final action of this research. The framework as well as the symposium report were distributed to all participants. The Leaders

Group has been expanded and is overseeing the region-wide undertaking described in the framework which includes embedded metrics development and research.

Before closing this section, I want to add a few words about the limitations of the research. From the outset, I understood that my research design was complex and that the dependence on cross-sectoral participation was a potential limitation, not as a goal but in terms of practicalities. I knew that expecting a significant number of business people to get involved in a research project consistently and on a sustained basis over two-three years would be challenging and it was. Grocery store and restaurant owners and food processors are busy, often working seven days a week. And farmers are full-on engaged in their businesses from March to October at the very least. Taking time away from their businesses impacts their revenue directly. These issues heightened with the pandemic as the workloads of grocers and processors increased, in some cases exponentially, and as the stress of keeping their businesses from bankruptcy overwhelmed restaurant owners. While some business owners participated with remarkable dedication many more indicated they could not attend meetings despite their commitment to the objectives of the work. We discussed this limitation at the Facilitation Group and Leaders Group meetings following the symposium. A decision was taken to build relationships with a deeper cross-section of food businesses as part of the Demonstration Project 2.0, with a view to increasing a shared understanding of what kind of leadership is needed to create a local food short supply chain and sustain it. As a starting point, the workplan for Demonstration Project 2.0 includes conducting individual open interviews with more restaurants, grocers, and processors across the region to increase perspectives and involvement in designing the changes.

A second limitation, is that the research participants did not include fishers. This region is has a long coast line along the Pacific Ocean and the Salish Sea (the Strait of Georgia).

Historically as well as currently, this coast line provides access to a world class supply of fish and other seafood (Bennett, et al, 2019; O'Donnell, et al, 2015). We were able to make a link to the sector towards the conclusion of the research and are addressing its previous absence in the next phase of the research. Again, this food business sector has little time to attend meetings so engagement will be challenging. There is, however, significant potential to build the sector into the local food system, as shown in the next chapter.

Data Analysis

The data analysis was conducted concurrent with data collection as a component of the collaboration process to achieve two objectives: to build shared meanings in real time and to prompt the next set of questions that flowed from within the collaboration process. This approach, while consistent with the collaboration process, may have been somewhat unorthodox. The literature indicates that collaborative data analysis is not common but is recommended in “multi-disciplinary” research projects involving several researchers (Flick & Metzler, 2014). My application of the technique recognises the participants in this research project as co-investigators, not subjects, and therefore needed to be part of the analysis. The aim was to build consensus of interpretation and meaning over time, rather than at a point in time. I began this process with the Facilitation Group immediately after every Leaders Group meeting and during the planning of each subsequent meeting. With some practice in this small group, we were able to apply it within the Leaders meetings, in the focus groups, and in the Demonstration Project 1.0. As noted previously, the aim was not to homogenise diverse perspectives but, rather, to push the boundaries of reflexivity not as a theoretical construct but as a vital component of achieving consensus around diverse perspectives. This approach was workable in this research project, in part because of the extended timeframe. Applying this method in the context of PAR embedded

peer review and critical reflection (Flick & Metzler, 2014, p. 81). We were not looking to increase objectivity over subjectivity but, rather, meld the two in order to transcend current conditions. Part of my role throughout was to bring new information from the research literature to the discussion as it progressed.

By the time we conducted the symposium, we had consolidated most of the prior analysis. We presented it to larger group of participants at the symposium and were able to frame questions around the concept of change. I feel it must be noted that for this process to work there needs to be as few as possible specific pre-set ties or what might be called contractual deliverables with any funders so that the direction it takes lies entirely within the collaboration. I believe this is especially important in the development of values-based change.

Research Ethics

This research project was conducted in a manner consistent with the 2nd edition of the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (2010) (TCPS 2) and the approval of the Royal Roads University Research Ethics Board. All participants in the Leaders Group and focus groups signed letters acknowledging their awareness of the research, their right to withdraw at any time, and assurance that they would not be personally identified in any research reports unless they approved. All participants in the symposium were notified in the invitation that by attending their participation was part of a research project, unless they identified their wish to be excluded from the research and still wanted to attend the symposium.

Both formal ethics requirements and ethical behaviour need to be embedded in good research practice. It is my experience that building collaborative circles and leadership within a PAR context adds some additional dimensions to research ethics. An example of the form this phenomenon took in my research had to do with expectations that everyone could participate to

the same extent. In my view, the decision to participate was not controlled by an on-off switch. Rather, it had to be clear that participation involved everyone in the space on every occasion. Recognising choice on all occasions has to do both with the interaction of ethics and power relations.

Because of the nature of the research methodology all participant data was collected in semi-public circumstances. This research did not collect personal or proprietary data. Some participants did share both types of data in the focus groups. I applied the non-identifying criterion when I presented the results of the focus groups back to them or to others. Some Facilitation Group meetings included personal information that is not reported here in order to protect both confidentiality and anonymity. Its absence does not negatively impact the research results.

As mentioned, I attended many COVID-19 pandemic response meetings conducted by many groups. In all cases, I was not involved in organising those meetings, nor did I have any input into who attended. They involved public groups of a minimum of a dozen people and sometimes more than 20 from various backgrounds and sectors. I described my research interests at the outset of the meetings and invited anyone with concerns to get in touch with me. I used the discussions at those meetings to provide pandemic context and trending information to prompt questions for the participants in my research. I shared my observations at Leaders Group meetings and at the symposium as a way of testing whether they resonated with experiences in this region and have reflected on them in the context of emerging COVID literature from researchers in other parts of the world.

While understanding and managing ethics in a participatory action research project includes the standard requirements of protecting anonymity and self-determination one of the

most sensitive ethical issues may be identifying and correcting power imbalances that affect participation. My approach to this aspect was to invoke good group facilitation practices including setting protocols of respectful engagement at the outset of discussions and being ultra-aware of behaviours and comments that could be interpreted as power-over. Nothing notable of this nature skewed the research.

Summary

The methodology and data collection methods for my research were established in a critical social theory framework. Together they supported a collaborative process of learning, planning, and reflection. A key outcome was creating shared meaning of locale in a local food system, its component parts, and their dynamic interaction.

Participatory action methodology is intended to be a practice of transformative change. Best practice builds collaboration among participants and uses reflective and reflexive processes to create a progression of robust data. My data collection methods followed this lead with form and function in dialectical (not linear) relationship. Most significantly, the methodology became an integral part of the change process. The creation and transfer of knowledge about what a food system means, the values proposition that guides the goals of local food system development, and the qualities and benefits of collaboration are emergent from the research. Building leadership within the research initiative was a key part of collaboration and change.

Approximately 65 individual stakeholders and experts were involved in the collaboration groups and continue to be involved in development of the framework and actions for change that the research set in motion. In their leadership roles the participants represent many dozens of participants within their organisations. Field perspectives from several dozen individuals representing a wide network of organisations was added into the research during the pandemic.

The capacity of the research design and methodology to incorporate this plurality of voices brings an additional layer of meaning to the findings. In the next chapter I present the findings from the process of the research and its results.

Chapter 4 : Findings and Analysis

In this chapter I present the findings as they flowed with participant involvement through time. The progression of the findings shows the non-linear ebb and flow of the participatory process and its dynamic relationship with the production and reproduction of knowledge and actions. The findings indicate an acceleration of the actions in the context of the global pandemic. They show the emerging understandings of the role of the industrial food system in causing climate change and the need for metrics that add to and clarify knowledge about the socio-ecological benefits of local food systems and the costs of not making food system changes.

I examine how collaboration worked as a key PAR tool in building the chain of relationships aimed at system change. I discuss effects that the collaboration structure had on the research outcomes and that continues to provide scaffolding for the longer timeframe of the change process ongoing beyond this stage of the research program. My analysis discusses the breadth of leadership and power sharing that are needed in making change in the “social world collectively, by thinking about it differently, acting differently, and relating to one another differently” (Kemmis, 2009, p. 471). Changing how we think about the food system and creating change based on transformed perspectives is a core PAR goal. Following are the six main themes that I use to organise the findings as they emerged through the process of PAR and the priorities identified by participants. I discuss them throughout the remainder of the chapter.

1. The central role of cross-sectoral collaboration necessary for local food system change,
2. The values proposition that frames the local food economy in this region,
3. Actions that address the infrastructure gap which is limiting the local food economy capacity,

4. Relationships that cross-cut the local food sector between and among the businesses and services needed to determine the form of a sustainable local food short supply chain,
5. Shared metrics that support community-based knowledge alignment of local food economy benefits with sustainability values and goals, and
6. Impacts of the COVID-19 pandemic that may be accelerating changes in the local food system.

Cross-Sectoral Collaboration

Table 1 shows the set-up of the research and the participatory and collaborative structure of the accumulating findings through a 36-month timeframe. This timeframe was increased from 24 months in order to capture unique data related to effects of the COVID-19 pandemic on food system change. As noted previously, the participatory structure included two key components: a Collaborative Facilitation Group and a cross food sectoral Leaders Group. The participatory work was organised under the title Closing the Supply Gap. This project provided on-the-ground identifiable scope for the initiative. Relating the research to the life world experience of an insufficient localised food supply helped to make the research more accessible to non-academic participants. The title, however, refers to more than a gap between the demand and supply of local food in the region. It is also intended to imply the gap between conceptualising a local food system and actually creating one that is sustainable in the long shadow of industrial food. It represents the gap between food production/wild harvesting and the many other essential components necessary for a successful local food system. And, finally, it implies the gap between the knowledge and expertise we have collectively at the local level and its application. Naming this research Closing the Supply Gap worked to bring the significant concepts of scale and domains of proximity, discussed in Chapter 2, into practical focus. Closing the Supply Gap

is characterised as region-wide, research-based, values driven, and systems focused. As complicated as the work was, the naming helped to hold many threads of the action goals together in the context of a growing group of participants.

Table 1 traces the activities of participants in Closing the Supply Gap and, as well, the COVID response groups that I attended to gather ethnographic field observations. From the outset there was a steady number of people in the Leaders Group and the associated Demonstration Project 1.0 initiated by the Leaders. Participation increased across the region with the Closing the Supply Gap Local Food Economy Symposium we organised in the spring of 2021. This symposium was planned for the previous spring but was postponed due to pandemic restrictions. As the year progressed capacity was developed to offer it virtually. This format made it possible to organise two full plenaries and three mini plenaries targeted to food sector participants across the region.

Table 1: Research Participation

January— March 2018, set up and start	Open-ended interviews with potential leaders in the food sector to establish a Leaders Group.
	Development of a collaboration agreement between the principal researcher, CRFAIR and an independent expert in collaborative system change.
	Introductory meeting of the Leaders Group to affirm and refine high level scope of research questions and two meetings with Leaders Group to establish participation and collaboration across food sector (2)
	Conference workshops/focus groups (2) to discuss issues and focus group (1) to add to input to the research frame (83 participants)
	Two focus groups with regional farmers to identify on and off-farm infrastructure and gaps, and discuss obstacles and ideas related to increasing supply (13 participants) Focus group with Leaders to create local food system values proposition (11 participants)

April – June 2018	Collaboration with Good Food Network on metrics mapping of intended outcomes of action related to local food economy, food literacy, and food access. (2 sessions) (24 participants each)
	In-depth interviews to explore policy questions (3)
July—December 2018	Participation in Place Based Food System Conference sponsored by Kwantlen Polytechnic University to research scope of current research and gaps
	In-depth interviews to clarify scope of questions (3)
	Leaders Group meetings (2)
	Metrics framework of outcomes finalised (10 participants)
January—December 2019	Established Closing the Supply Gap Demonstration Project
	Farmers workshop (GAP) (2 days) (23 participants)
	Leaders Group meetings (5) (Average 10 participants each meeting)
	Participatory visioning of development of key new infrastructure (25 participants)
	Metrics implementation planning with research collaborators (5 participants)
	Collaboration Group Meetings (12) (3-4 participants each meeting)
January—June 2020	Leaders Group (3) (8-10 participants each meeting)
	Metrics development (4 participants)
	Agricultural Alliance COVID Response meetings (7) (average of 8 participants each meeting)
	COVID Relief and Recovery Good Food Network meetings (5) (12-20 participants each meeting)
	COVID Rural Economic Recovery (5) (average 12 participants per meeting)
	Focus Group with sector stakeholders to reflect on COVID experience (5 participants)
July—December 2020	Agricultural Alliance COVID Food Response meetings (10) (8-10 participants each meeting)
	Collaboration Group (10) (3 participants each meeting)
	Symposium Planning (4) (5 participants each meeting)
	Good Food Summit presentation on local food economy and breakout groups (47 participants)
January—April 2021	Leaders Group (3) (8-10 participants each meeting)
	Local Food Economy Symposium: 2 Plenaries and 3 focused sub-regional mini-plenaries

Collaborative Leadership

As a function in PAR, collaboration is an intentional tool for authentically democratising participants' involvement in the research, building shared understandings, and establishing leadership protocols (Heron, & Reason, 2006). As such it was not a casual tool in my research but was central to creating a collective vision of the spatiality and scope of the local food system in this region. It was structured to build cross-sectoral relationships among participants and empower them to embed changes in their respective firms and institutions. I never thought of the research participants as *research subjects* and never referred them as such. To do so would have objectified them (Smith, 2005, p. 28). They were and continue to be co-creators of the changes that were the goal of the research. As noted above, my research design framed the initial collaboration structure which, as described in Chapter Three, included two components: a Facilitation Group and a cross-sectoral food system Leaders Group. My findings indicate that the simplicity of the concept of collaboration does not represent the complexity of its actuality.

Facilitation Group

The members of the Facilitation Group, described in Chapter 3, had been involved in the regional local food movement for a significant number of years and had expressed shared local food system values in our prior work together. The group played a backbone role for widespread participation in the research and change initiative, providing coordination, animation, and administration. In addition, I was the principal researcher and provided research literature and analysis on an ongoing basis.

A chief aspect of the Facilitation Group's role was to model collaboration, both as a research practice and as a developmental process to achieve a common goal. The group drafted a Collaboration Agreement that spelled out the arrangements within the group to articulate the

shared vision of a place-based food system, shared collaboration principles, the scope of activities of the group, desired outcomes of the collaboration, and respective roles as well as other details. That the agreement took nine months to negotiate and many drafts are indications that despite the proliferation of “collaboration” as a common practice in PAR and beyond, we could not find a template that made development of the agreement easy. Although all parties to the agreement have worked together on prior projects, coming to common understandings about what collaboration means in terms of roles and decision making in a participatory action research context was not an easy task. While the agreement was a touchstone as the work progressed, it did not prevent disagreement and some discord, primarily having to do with egalitarian decision making. It was the intent and practice within the agreement to monitor the process but due to workload and multiple priorities the group had not taken time to reflect upon its own operation of the Collaboration Agreement until month 20 in the research. Given the difficulties, I suggested we engage in a self-assessment process and bring in a facilitator to mediate the increasing discordance. Members of the group agreed. The aim was to identify points of strength and build on them to address the emerging disagreements. I believed we could neutralise confrontation by returning to the principles the signers had all agreed to. The principles clause in the agreement had been worked through many iterations and a lot of discussion as we were drafting the agreement; it was one of the last clauses to be approved by the group. By returning to those principles it was implied that they would be the touchstone of our shared values which brought us together in the first place. I designed a self-assessment tool that allowed each of us to gauge our experience of how those principles were reflected in working collaboratively within the group. As a group it seemed we were committed to use this process to resolve misunderstanding and differences, and move on.

I constructed a simple Likert questionnaire that asked the four participants to rate the extent to which each felt the group was working together in a manner consistent with the principles in the agreement. Everyone was asked to rate each of the nine principles: respectful communication, commitment to democratising knowledge, respecting ethical research standards, sharing decision making, taking time to reflect on the collaboration process, respecting the different contributions of the others in the agreement, recognising that a systems approach is dynamic and complex, being courageous, and maintaining a sense of humour. I presented the preliminary data, using a scatter plot for each principle, to the group for reflection expecting that the group would use the information to adjust the agreement and/or practice as may be needed. The data showed notable divergence in the views of the participants about the extent that the group was working in a manner consistent with the principles. This divergence represented a difference in individual experience of the collaboration and perspectives about the role of the collaboration agreement in carrying out the initiative. The views were especially divergent having to do with whether decision making was being shared and whether the group was acknowledging each other's contributions to the work. Another point of strong divergence was whether the collaboration was taking a systems approach to the work. The difference in responses to each principle ranged from doing a very good job in this regard through to not doing a good job of it at all. Following this first stage of reflection two participants in the Facilitation Group stepped away and were replaced with a new CRFAIR representative. With the benefit of time and the immense skills of the mediator all the individuals in the original Collaboration Agreement are still involved in the initiative, some in different roles that focus on specific organisational components rather than system-wide scope. To everyone's credit within the renewed Facilitation Group the collaborative model continued and we have learned to reflect on

the collaboration itself as an ongoing process rather than at intervals. The Closing the Supply Gap Local Food Economy Symposium was a stellar example of how collaboration processes and skills can be used to model strong leadership and support meaningful participatory involvement across the food sector.

While research literature is prescriptive in terms of the importance of collaboration in PAR, the findings in this research indicate that intentionally bringing collaboration to PAR is complex and cannot be assumed even within a small group of practitioners and with a detailed Collaboration Agreement in place. In this instance, because the Facilitation Group was small, I cannot go into more detail without breaching both confidentiality and anonymity. There are, however, three important points of learning: 1) in a PAR setting collaboration requires power sharing which should be named and framed at the beginning of the process, 2) building a foundation of shared values makes it possible for participants to find the role they want to play in the change process, and 3) more research is required to build a set of collaboration attributes that are foundational in PAR research. My experience in this research indicates that PAR methodology will be strengthened if we can move beyond collaboration as a concept to naming the key qualities that define the work and the indicators that can be used to assess it in research practice.

Closing the Supply Gap Leaders Group

This group was conceived as the core of the research participation. It was established to build collaborative relationships and leadership for change across the regional food economy. Fourteen interviewees were selected and invited to the introductory meeting of this group. As shown in Table 1, above, the group met many times during the research project. There was a gap in meetings through the first seven months of the pandemic due to extreme and unique food

sector pressures and demands on the members of this group in their workplaces. Over time we were able to reconvene and also to welcome additional participants to bring more perspectives and connections into the participatory process. The group is still in place and continues its work.

At the introductory initial meeting of the Leaders Group we described the aims and scope of the research. I provided information from my literature review about the operation of the industrial food system, the current fragmentation in the local food sector, and the lack of local food in the mainstream market place. Another member of the Facilitation Group presented general information about system development and system change. Participants shared information within the group about their current positions in the food system and their specific interests and perspectives in changing the local food economy. A discussion about leadership was facilitated and links were made with food economy change. At the request of the group, the second meeting was a workshop (five hours) that focused on building consensus on their vision of a robust localised/place-based food economy. A detailed discussion about the infrastructure that is needed to support a local food economy provided the stepping stone for the group to dissect and digest the problem statements for this initiative. They initiated a discussion about the high level problem that there is no longer any culture in agriculture and built consensus on the general significance of culture in this work. They juxtaposed this concept with food as a one dimensional commodity and the absence of its social and ecological values and place of origin in the industrial system. They asked:

Why isn't local food more readily available in grocery stores, institutions, restaurants, and so on throughout the community?

Why is it so hard to make a living as local food producer or processor?

What is holding local food back from being more prominent in our food supply?

These practical questions guided the participant discussions throughout the research. They led directly into a discussion about what a values-based localised food system means. The next Leaders meeting was set up as a focus group with the purpose of identifying the full range of values that the group individually and collectively asserted are central to a local food economy, distinguishing it from the industrial system. In the following section of this chapter, I present more information about the output of this work.

The next major work that the Leaders Group undertook was to create a demonstration project that would test the system obstacles that are impeding the distribution of local food in grocery stores. Insufficient supply was the presenting issue but an examination of the underlying causes verified an array of obstacles. In focus groups, producers pointed to gaps in on-farm and shared infrastructure needed to support distribution, costs of increasing production, concerns about engaging in production contracts in which producers carry all the risk, and regulatory requirements that are challenging for small to medium scale producers. The Leaders Group learned that demand for local food was high from the grocery perspective but there were concerns about quality control, *reliable* supply, and distribution management. The Leaders Group agreed that the best way to work through the matrix of obstacles was to organise a Demonstration Project to learn more about the issues and potential for addressing them. Demonstration Project 1.0 was set up to observe the issues on a small scale and test solutions that could be generalised. Thrifty Foods, a grocery chain that has 11 stores in the region, offered to participate, and a call went out to farmers in the region to join the demonstration; 10 signed up. The outcomes of Demonstration Project 1.0 are discussed below.

At the same time as Demonstration Project 1.0 was underway, the Leaders Group was asked to serve as an Advisory Group for the development of the first regional food hub. The

potential development of this hub had been in discussion for several months among core stakeholders. Closing the Supply Gap supported the concept and with its focus group data assisted in demonstrating the need for a regional facility that could address some of the shared local food infrastructure needs for storage, distribution, and processing. A potential facility was identified. The provincial government stepped forward, along with community and private investors, to support the purchase and development of the facility. The Leaders Group contributed to needs assessment processes and reviewed the feasibility study. They suggested a variety of services such as bulk input purchasing, shared storage including refrigeration, affordable processed food analysis lab services, a variety of skills development opportunities for food processors and opportunities for co-packing, and technologically advanced distribution services. During the pandemic some services were introduced at the facility in response to immediate needs; development of the hub programs and services is ongoing. It is the first local food centre in this region and one of the organisational participants in Demonstration Project 2.0.

As mentioned, the Leaders Group was planning a local food economy symposium when the pandemic struck and the planning work slowed for several months. In light of the many urgent matters the members were dealing with in their respective organisations, we were seven months into COVID-19 before it was possible to bring their focus back to Closing the Supply Gap as a priority in the context of pandemic food system experience. Outcomes of Closing the Supply Gap Local Food Economy Symposium are described in the next section.

Overall, Closing the Supply Gap Leaders Group was foundational to the structure of the research. The participants have provided increasing commitment to this process, bringing their expertise and significant experience to systems change and development. At the same time it has not been easy for these people to participate in this work. First, there are logistical obstacles.

Given that they all hold very responsible positions in their respective organisations it means time away from their businesses which is especially hard for the small scale processors, the farmers, small scale independent grocers, and restaurant chefs. It was also hard for those working in institutional food services at senior levels. They already have heavy work loads and are dependent on a commitment from their employers to add time for this work to their schedules. So even though many of these people expressed a strong interest in the work, attending meetings was an obstacle.

Second, the concepts associated with local food system development are complex and in some respects quite abstract. They are especially a challenge for people whose work is, for the most part, very practical and immediate. Their involvement as participants in planning changes is key along with engagement in strong incremental reflective and reflexive processes that build shared understandings and meaning. It is in this aspect that time became an essential element in the research. We can infer from the research literature that the kind of change the food system needs cannot happen quickly. For example, based on case study literature and the findings of my research's Demonstration Project 1.0, it is highly unlikely that we are going to see a major increase in the amount of local food in grocery stores in the immediate-term. It is appropriate to remind readers that the research literature shows that most people purchase most of their food in grocery stores, despite a plethora of food producers' direct marketing outlets. It is obvious that we do not yet have the foundations required to make that change happen in a sustainable way. As I noted in Chapter 2, PAR is an emergent process in which participants deepen their understanding of issues and their collective capacity for action. There needs to be time for participants to reflect, absorb, consider options, *and reorient what they think they know*. An additional consideration is that we are working in a global context in which accelerated actions

are promoted and more highly valued than emerging changes. For participants who are used to measuring success in terms of immediate results, it is important for the facilitation to ensure that the shared vision is active and does not stall while new perspectives build and thoughtful actions are planned and implemented in a way that embeds them in a new system. In my research the COVID-19 pandemic provided impetus that increased understandings more quickly and collective action was demonstrated in new ways. It has made it easier to engage more leaders across the food sector. These are positive things coming out of disastrous conditions. It is important to use the opportunity wisely based on collaborative reflection, and avoid fragmented or impulsive responses. The Demonstration Project 2.0 that the research has put in place is a tool for framing emergent change.

Values Proposition

The exploration of a values proposition with the Leaders Group follows on the assertion in the literature that values are neither incidental nor accidental in the food system (Hinrichs (2000, 2008). The assumption that a local food system is more sustainable than the industrial system is part of the local trap and includes assuming inherent value in small scale production (Born & Purcell, 2006). The research literature claims that conflating the localisation of the food system with a higher level of social, economic, and environmental values is problematic (Krippner, 2001; Sonnino & Marsden, 2005; Winter, 2003). This research asserts that local food systems are not inherently different from the industrial food system *unless* there is an intentional values proposition that makes them different. As such, the values proposition that frames the local food system is the first determining characteristic that substantively distinguishes it from the industrial food system. This is a point that draws attention to the power of the industrial food system to maintain and reproduce itself as the dominant food supply through transnational

commodification, stripping food of its multi-dimensionality, including its culture. In the literature on the meaning of local in local food it is asserted that *place* is an active participant in defining the values proposition of the local food system (Sonnino, et al, 2016). This assertion is reinforced by researchers who are examining the nature and role of short supply chains as a way of changing the market place relationship with food through the determination of values as local food systems develop (Jarzebowski, S. & Pietrzyck, K., 2018).

Based on this literature I accepted that developing a values proposition could be a point of conflict among participants even though we had pre-screened the core participants in this group for their interest in advancing the local food system. Like all of us, the participants in this group may find it difficult to disengage food system values from the transnational institutions that are controlling the food supply. Therefore, I structured the first discussion of values at the Leaders Group more as a focus group than an open-ended discussion. I worked with the Facilitation Group to prepare a list of 26 possible foundational and applied values that might be considered as the underpinning of a local food economy. Participants were asked to each select three that they consider their top priority and three as their second priority. They were, of course, invited to add in any value or values that did not appear on the list. The participants were also provided with a set of questions related to the problems in the food system they had identified in a previous meeting and were asked to come to the meeting prepared to discuss them with their colleagues. The questions provided a framework for a deeper discussion about the implications of different values in the food system. In preparation I studied the application of adapted field theory that has been used to facilitate power sharing in situations which could be fraught with power differences within a group (Mutch, 2015). As it turned out, there were many different perspectives within the Leaders Group but the differences did not become a power struggle.

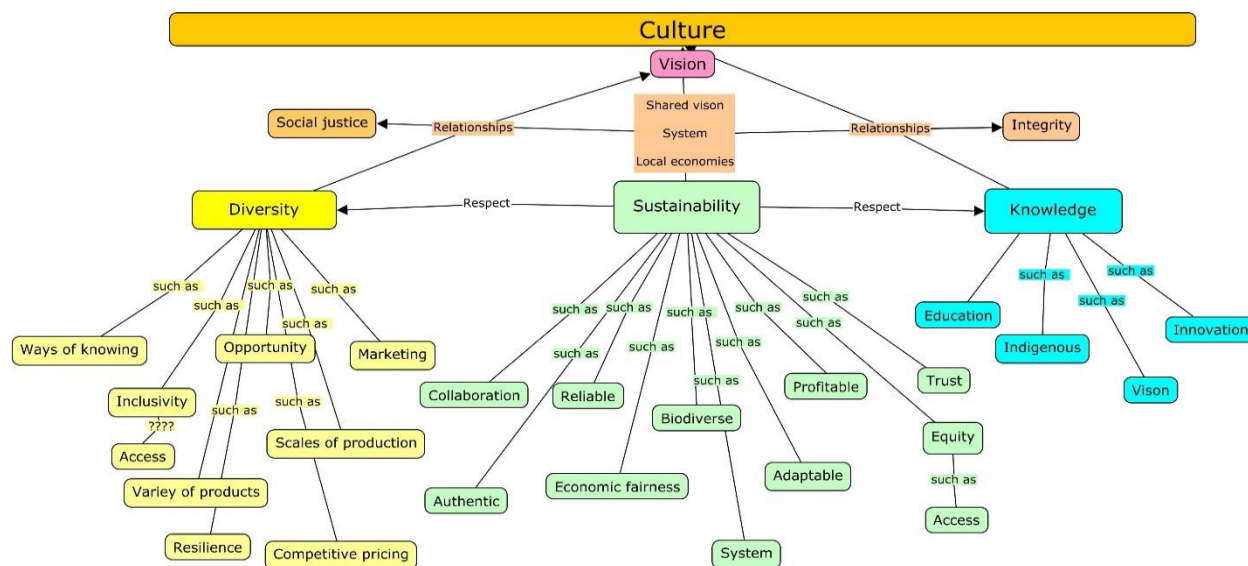
They were accommodated within the group to produce a values proposition that encompassed the diversity.

A key question in considering the value and process of collaboration in PAR methodology is how the positionality of each participant affects the scope of questions and research outcomes. In the case of my research, I was thinking in terms of small producers and processors relative to regulators, investors, grocers, and institutional buyers. The idea was that if values differ based on positionality in the food sector, a values map would help the group see the power differentials and decide as a group to mitigate that differential. It is a significant finding in this research that a power differential did not emerge based on sector, and the work on building a values framework did not become bogged down in trade-offs at this conceptual level. The participants had been working together for a while prior to this conversation and were well prepared for it. They created a values matrix by the completion of their first values session. The session was several hours. It should be mentioned at this time that the first four Leaders Group meetings included lunch made from almost all local ingredients prepared by different chefs. This serving of local food was not incidental at the meetings but was intentionally determined to be a priority by the Facilitation Group as a demonstration of the importance of living our values and having local food present at the discussions about it. This point and the glory of the food were not lost on the Leaders Group. In the meetings leading up to the values meeting the participants naturally discussed the food they were eating, farms and processors it was sourced from, and chefs who prepared it. These were not facilitated conversations but, rather, informal social exchanges as they got to know each other better over lunch. The food they ate provided a canvas for them to share many anecdotes that brought their values into the conversation. In short, the values proposition they drafted was not, for the most part, an abstract exercise. By the time they

did this work they had already established the beginnings of shared understandings of the many meanings of local food.

Figure 3 shows the framework the participants created for building the values proposition. They determined that culture is the overarching social construct for food and that the values proposition must exist in a context of social justice and integrity. It was interesting for me to observe that, despite the commodification of food in our society, these participants began with a thorough discussion of the loss of food culture, how that lack of food culture is manifested with lost knowledge about the seasonality of food, and how imported foods impact the loss of indigenous foods here and around the globe. Within this framework participants categorised the operating values in three streams: diversity, sustainability, and knowledge. The figure shows examples of the concepts they identified within those streams.

Figure 3: Local Food Sector Participants' Values Proposition Map



It is noteworthy that the streams they created are interdisciplinary in their own right with the blending of social, economic, and ecological values. In this context the need to build relationships across food sectors was raised repeatedly as a component of the values framework;

it mirrored the recurring theme about the importance of needing stronger relationships in the local food sector that was raised in all the focus groups and interviews.

The representation of the values proposition for creating a food system in this region is presented here in Figure 3 as a work in progress. Through the research project we brought it back to the group continuously so that adaptations and changes could be made, but most importantly, the conversation was left open so that participants could question any part or the whole of the values proposition at any time. From the first iteration, the matrix remained relatively the same with small details added and concepts explicated to provide clarity. The participants in Demonstration Project 1.0, all of whom operated food businesses, reviewed the values matrix and they, too, showed no hesitation in accepting it wholeheartedly. It is noteworthy that in a discussion about market diversification at a focus group with farmers, the group collectively expressed the view that *food security* is a top priority and, linked to this view, they expressed strong interest in supporting a universal school meal program within their business model; they unanimously declared that they would increase production for this purpose. Their conversation indicated that their unanimous and eager support for such a program was a values statement. Based on the farmers' support for "food security" it is reasonable to infer that values such as social justice, diversity, and equitable food access are not anathema to business profits. This inference suggests that instrumentalism and marketness may be more dynamic than the economic theory cited in Chapter 2 suggests. Or, at the very least, invites more research into what are the relationships that positively affect local food increased production and market diversification.

At the local food economy symposium we administered three online questions to test broader regional confidence in a selection of the values in the matrix. Based on a Likert scale, a high majority of participants indicated that sustainability is extremely or very important (78

percent) in a local food system and that promotion and protection of the biosphere is extremely or very important (85 percent). Eighty percent also said that trust among food businesses is extremely or very important. In discussions at the various sessions the views of the participants tended to align with the values proposition. There was hesitancy, however, among some of the participants related to the feasibility of being able to change the current system, and they focused more on obstacles. Others were determined that doing nothing was not an option, for sustainability, equity, and other reasons. It is my understanding that in any change process there will be early adopters and those who join the development later on. Based on participant input at the symposium it seems that hesitation has little to do with lack of support for the values and more to do with a range of obstacles presented in the current food system structure, some of which are producing discomfort with business risk. The important factor at this stage in the change process is that the ground is laid for respectful and positive progress as the system development unfolds and that it is based on a dynamic values proposition, not a static one.

Local Food Infrastructure

Through the years there have been various community-based studies conducted in this region which indicate that lack of hard infrastructure is a barrier to increasing local food production and processing (McNair, 2004; Salt Spring Island Area Farm Plan, 2008), and significant effort has gone into addressing the gaps. Recent local food infrastructure development includes the Salt Spring Island Abattoir that began operation in 2015, current development of the South Island Food Hub in Greater Victoria, the development in progress of a local food centre on the Saanich Peninsula called the Sandown Centre for Regenerative Agriculture which includes a large tract of land that will be brought into food production along with a range of supporting services, and development in progress of The Root, a local food storage, processing, and

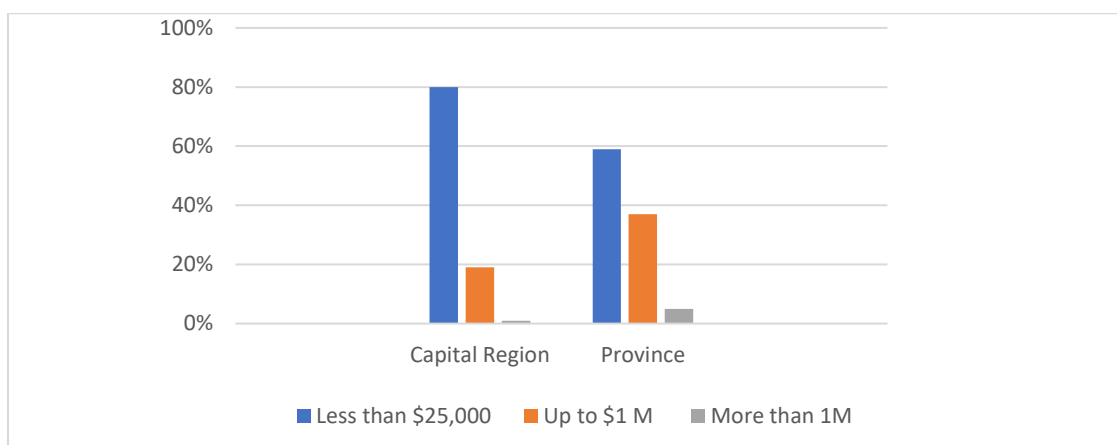
education centre on Salt Spring Island. There are also many programs that increase access to nutritious food for especially vulnerable people in the region (for example, the Galiano Island Food Program, a local food coop on Pender Island, the Sooke Food Chi program on the west coast of southern Vancouver Island, and Lifecycles and Mustard Seed in Greater Victoria). These hard and soft infrastructure matter but they are not enough to provide what is needed to support a robust and sustainable local food economy. In addition they are fragmented and do not yet operate in a systems way.

Participants in this research have shared information about the lack of local food infrastructure, both hard and soft, in this region. In meetings and focus groups they have talked about the infrastructure that became a thing of the past with the rise in industrial food, including fish processing plants, food storage, dairy processing, small distributors, and poultry processing. The research literature identifies lack of local food infrastructure, both hard and soft, as a significant obstacle in efforts to localise the food system (Berti & Mulligan, 2016; Blay-Palmer & Koc, 2010; Todorovic, 2018). Literature on local food hubs points out that local food distribution facilities have significant difficulty competing on a profit basis in an industrial food economy and frequently cannot operate without ongoing donations, grants, and volunteer support (Sonnino & Griggs-Trevarthen, 2013; Stahlbrand, 2017; U.S. Department of Agriculture, 2017; Woods, et al, 2013). In the past year the need for local food infrastructure has been a major point of discussion in many of the pandemic relief and recovery meetings that I attended. Both the federal and provincial governments have recently made policy decisions to provide specific public funding that begins to address this longstanding gap in local food infrastructure, in part to boost rural economies, through a variety of grant programs such as: BC Northern & Rural

Development, 2021, Clean BC, Government of Canada Local Food Infrastructure Fund, and Island Coastal Economic Trust, 2021.

As noted previously the need for on-farm and shared infrastructure was identified in the focus groups I conducted with farmers in the region at the start of the research. Participants indicated that lack of infrastructure limits their capacity to increase primary production and diversify markets. The capital investment is beyond the reach of their farm businesses. Servicing loans is not possible within their current cash flow projections. In preparation for the focus groups, I provided participants with key questions, data on the marketing streams that farmers use in the region, and farm revenues. Statistics Canada reports shows that 97 percent of farmers in the Capital Region of British Columbia market only direct-to-users (Statistics Canada, 2019). Their main sales vehicles are farm stands, farmers markets, community supported agriculture (CSA) programs, and U-Pick crops. The number who sell to wholesalers, institutions, and grocers is very low. Figure 4 shows that 80 percent of farms in the region have annual gross revenue of only \$25,000 and less (Statistics Canada, 2017). It indicates that this level of revenue is below the provincial average, suggesting that dependence on direct sales does not provide sufficient access to the market place. In a circular fashion, limited access to the market place is likely having a negative impact on production volumes. Data indicate that farmland is not being fully utilised in the region which warrants a risk and opportunity analysis that may be conducted in the next phase of this research initiative.

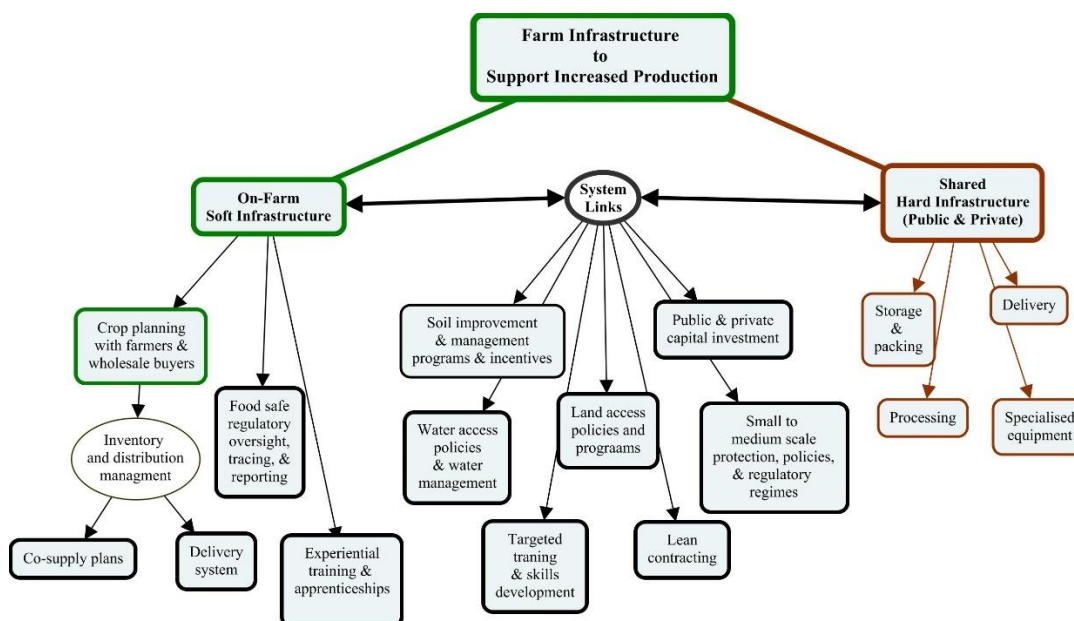
Figure 4: Gross Farm Revenue in the Capital Region of British Columbia



Source: Statistics Canada (2017)

Thirteen farmers participated in the focus groups. All were small scale with the largest farm being 150 acres and the smallest less than an acre. The farms varied in their focus from livestock to intensive mixed produce. In response to questions about their capacity to increase production they identified many needs. Primary among them were access to skilled labour, capital for on-farm infrastructure investment, land tenure, affordable housing for skilled (permanent) farm workers, improved district level water management, processing facilities for livestock, and shared food warehouse storage that includes coolers and trucking from the farm through to wholesale level delivery. Figure 5 shows the relationship between the key soft and hard infrastructure gaps that the farmers identified and factors that need to be taken into account using a systems approach. The diagram illustrates that increasing local food production requires much more than simply planting more crops. It requires a systems change that involves addressing gaps in on-farm soft infrastructure, developing shared infrastructure, and linking these infrastructure components through a variety of public instruments.

Figure 5: Components Necessary for Increasing Primary Production



In the discussion about food safety standards the farmers expressed doubts about the value for small to medium scale production of attaining General Agricultural Practices (GAP) certification. This certification is required generally if they want to sell to most grocery chains and institutions. GAP is an industry-set global standard that regulates and controls safety protocols and handling for food production management. It promotes standardisation of products to meet commodity market expectations and functions most effectively in monoculture production. As such it is designed for large, industrial scale production and mechanisation. From some perspectives, it raises concerns about transnational control of the means of food production. Farm certification introduces requirements for additional soft and hard infrastructure. It does not replace government food safe requirements, including meat and dairy regulations or certified organic regulations. Like organic standards, GAP establishes traceability of livestock and produce from the fields on the farms. It follows post-harvest handling from the farm to

processing and packing facilities. Even the trucks that do the hauling of food have to be GAP certified in this regime. It includes an independent, private sector audit, and industry access to national and international markets. For the most part, participants in this research considered it an impediment to diversifying their markets. Without assurance of market place access, it was difficult for them to assess the benefit of GAP certification relative to the amount of work required to set it up and manage it, the cost of upgrading infrastructure, and the annual cost of certification. As mentioned previously, European regulators are identifying alternatives that accommodate and protect smaller scale production. These findings highlight that increasing local food production is more complex than simply planting more crops.

Building Relationships in the Local Food Sector

Farmers at the focus groups were asked about factors that need to be taken into account for them to consider contracting sales to grocery stores, and other firms. Singling out grocery stores moved the conversation toward building a critical mass of fresh local food in venues where people generally buy most of their food, and the beginnings of a short food supply chain.

As was the case with increasing production and diversifying markets, starting with supplying quantity to grocery stores was not a straightforward process from the farmers' perspectives. Following is a summary of the considerations they indicated will have to be taken into account in order to change their selling methods and venues in ways that will make the food they produce more accessible in mainstream food places.. They put business to business arrangements in the same context as direct sales, in terms of being based on relationships of trust. Use of brokers or other methods characteristic of commodity management and sales were not considered desirable mechanisms. Their responses emphasise many basic relationship priorities:

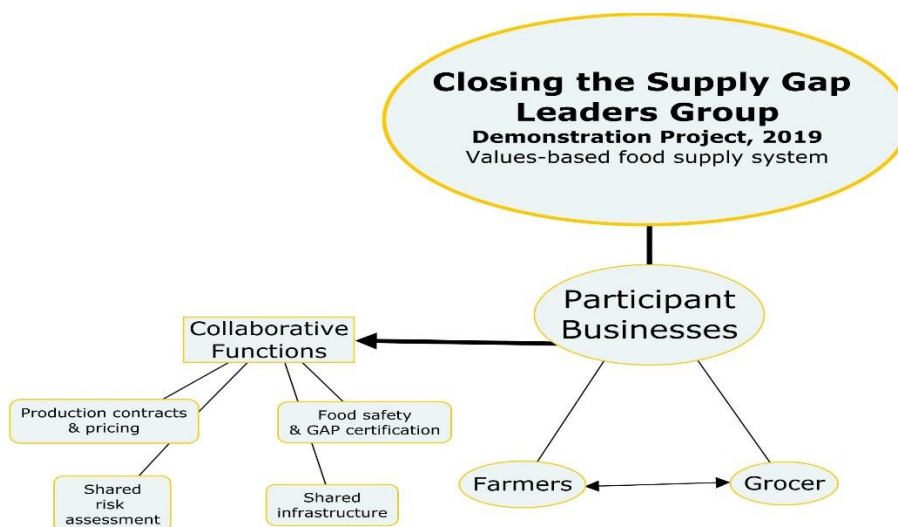
- Contracts are a great idea but pricing matters and the contracts need to acknowledge that this is food, not manufacturing.
- Selling on contract needs to be a pilot to start.
- Contract needs to be a conversation. There needs to be motivation on both sides and some autonomy needs to be maintained.
- Open dialogue is important. Quality comes first and conversation is huge.
- Don't need a contract. Need a relationship and mutual benefit for both.
- It takes a long time to grow farm products and a long time to deal with production if the contractor terminates.
- There needs to be a payment system that takes production costs into account.
- In a contract, there needs to be room to balance predictability and flexibility.
- They need to plan production a year ahead not just a season and grocers who are used to buying through the industrial supply chain are not used to seasonal production.
- Need to choose the right buying partners, e.g. schools compared with grocers.
- Need acknowledgement that the quality standards are more variable than with industrialised food. This does not mean lower quality.
- There needs to be transparency in pricing.
- Needs to be better management of marketing claims by the buyers to maintain integrity (e.g. claims that an item or ingredient is local when it is not).
- We need to do more intelligent farming, and pricing needs to be considered in the context of being more competitive. How do we grow in the most efficient way?
- Streamlining is for industrial production.

Throughout the research, the importance of relationships was a key driver in all discussions among participants about the attributes of a local food system and local food economy. It tracked among participants from the beginning of the research through the Demonstration Project 1.0, and the symposium. As a result, building stronger relationships across all businesses in the food sector, became a priority action in the design of Demonstration Project 2.0. In the following sections I discuss the findings from these research components.

Demonstration project 1.0

Information about this project was distributed to small and medium scale market garden and livestock farmers across the region; 15 farmers attended an information meeting, 10 farmers signed up to participate. Fishers were not included because we did not have the capacity to address the specialised regulatory regime that is applied to fishing at that time. No livestock producers signed up. The readiness of farmers to participate was self-assessed as an expression of interest and included all factors from the farm to delivery, store management, and sale of products—in short points in the beginning, middle, and end of a supply chain. Thrifty Foods agreed to be the grocery test business. Figure 6 illustrates the organisational structure and key functions of the demonstration project. It shows that the participatory design of the research was extended to include collaboration from the Leaders Group to the participants in the demonstration project. This configuration was complex in terms of each farmer and the grocer bringing their specific business interests to the process of collaboration within the research, in the interests of building a shared food economy. The initiative was structured to test what is needed to build those business relationships based on key interests within the respective business sectors. It used focus group data to define the key functions that are shown in the diagram.

Figure 6: Demonstration Project 1.0 Business-to-Business Collaboration



Participation focused on learning together and bringing their various perspectives as local food business owners to infrastructure needs, crop planning, business planning, certification requirements, and a variety of infrastructure gaps including distribution issues. The project operated from February to the end of the primary growing season in November 2019. The plan was to reconvene in February 2020 but that timeframe ran into the onset of COVID-19 and all the changes that the pandemic forced on farmers and grocers. The changes spanned the food supply chain and business-as-usual.

During the timeframe of the demonstration project the group met regularly to identify critical points of interest, share what they were learning, and problem solve. The Facilitation Group organised a two-day GAP workshop for the farmers to work with an expert on the process of certification. All of the farmers attended, as well as other farmers in the district for a total of 22 participants. Following the workshop we organised a group session for the farmers in the CSG Demonstration Project 1.0, as well as one-on-one consultations with a GAP auditor who volunteered to mentor them in assessing their readiness on their individual farms. The

consultations provided advice on the infrastructure and procedural changes they would need to make in preparation for GAP certification. The mentor put them in touch with a provincial funding program that would assist with financing the on-farm infrastructure they would need to meet GAP food safety requirements.

GAP certification is a major business decision that opens the door to diverse marketing streams. Because it is not required in order to sell at farmers markets or at the farm gate, only a small number of farms in this region have become GAP certified. To date, one-third (3) of the farmer participants in the demonstration have certified and are selling some products to grocers including Thrifty Foods. Some are still actively considering the option in the context of their business planning and assessment of the risks and benefits of making this investment. The certification involves a significant amount of work, infrastructure development, and ongoing annual costs. To at least some extent, it was negatively viewed as a tool for being absorbed into the industrial food system model and does not adequately take smaller scale and mixed production rather than monoculture production into account. These are all valid concerns that, as mentioned previously, are being discussed and addressed in European Union agricultural regulations. An important component that was planned as part of the demonstration was to engage the farmers in a workshop and individual consultations with an expert to assess the business risks, costs and benefits of diversifying their markets. The costs and benefits of GAP certification would be one of the variables they would incorporate into the assessment. Unfortunately, due to insufficient funding we could not provide the business risk planning that was part of the demonstration design. Based on the issues that the farmers raised, it is unfortunate that due to the pandemic time ran out for securing funding and conducting the workshop. It remains a possibility in Demonstration Project 2.0.

Other than the GAP certification requirement the grocer involved in the project identified few barriers to purchasing from local farms. It had an active local development program and significant experience working directly with producers in other regions within the province and selected processors. Emphasis on quality control and reliability of product delivery were discussed but, for the most part, the grocer did not express a high level of concern, understanding that the farmers involved were experienced, skilled growers. The grocer identified the need to adapt the inventory management in his system to accommodate direct store delivery. This is an important point that raises the technological gap between the industrial food system and local production for local distribution. Whether international, national, or local, grocery businesses at present are tied into the industrial food distribution system. It provides inventory control, just-in-time ordering, and a vast network of delivery services from around the globe that is convenient at the same time as it is distorting the seasonality of our food supply. Circumventing that system with one that is localised is an interesting and important challenge in the development of local food systems. Exploring this challenge was heavily on the minds of participants at the symposium and is a focus in Demonstration Project 2.0.

In sum, Demonstration Project 1.0 explored barriers to supplying fresh locally grown food from farms to grocers and began the complex task of understanding them from the conceptual to the operational level, and addressing them. It showed that the shift required to establish a short supply chain from local producers to local grocers is embedded with an array of infrastructure, business planning, financial, and distribution systems barriers. Like the farmers in the focus groups (only one of the farmers participated in both), the participants in the demonstration project strongly indicated the need for shared infrastructure such as quality storage and distribution services. Significantly, it showed that building trusting relationships

among farmers and between farmers and grocers is a foundational component of setting up a functioning short supply chain for the local food economy.

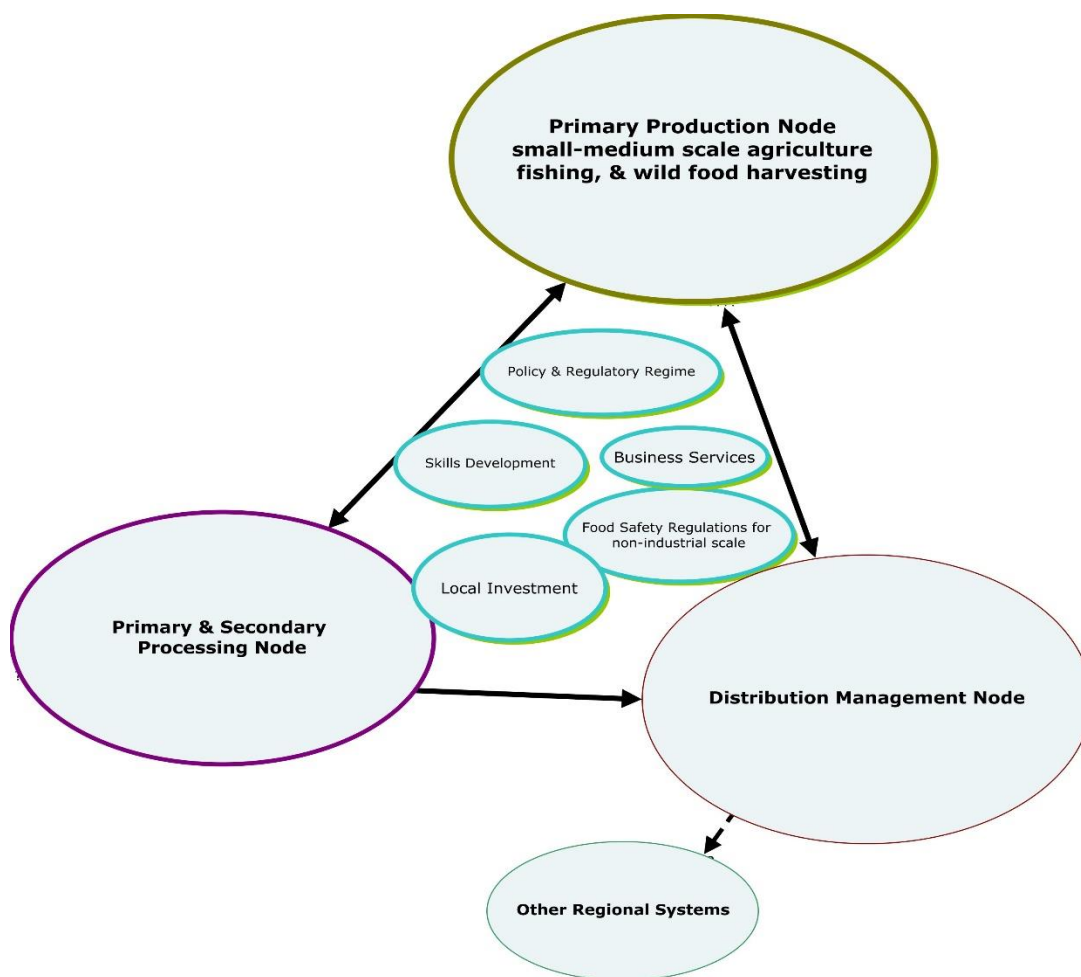
In sum, the demonstration showed that producing fresh food for local mainstream distribution involves labyrinthine planning and development. This finding affirms the research literature which shows that developing food hubs is one piece in the complex chain of infrastructure and services that are needed to establish a functioning, efficient short local food supply chain.

Local Food Economy Symposium

The symposium, the first of its kind in this region, was designed to bring key stakeholders together to consider the changes that are needed to localise the food economy. As described in Chapter Three, 45 individuals attended from across the Capital Region from Galiano Island in the east through the southern gulf islands and Vancouver Island to Sooke and Port Renfrew on the western coast of Vancouver Island. The vision the Leaders Group laid out was an economy that increases local food production to meet growing demand and increases demand to support local food system sustainability and investment. This vision involves a change process that is lead by local food businesses—local farmers, fishers, processors, grocers, restaurateurs, caterers, local distributors—building on their unique expertise and experience; and a food system that is a stronger player in community building. We presented the diagram in Figure 7 which shows the main components of a food system and their link to investment, public policy, and regulations. It asserts that a robust, sustainable localised food economy needs to be organised like a system rather than the current fragmentation. The diagram underlines the need to consider all the components and how they support each other from farm fields, to fishing boats, to processing

facilities, to trucks, to software, to food regulations, and so on. This picture has emerged directly from the data that participant businesses in this research are providing.

Figure 7: Components of the Proposed Capital Region Local Food Economy Supply Chain



The participants identified many conditions that must be addressed in order to achieve this systems vision:

- investment needs to stay in the community,
- linkages among people in the local food system need to strengthen,
- there needs to be inventory management,
- sustainability goals can be polarising,

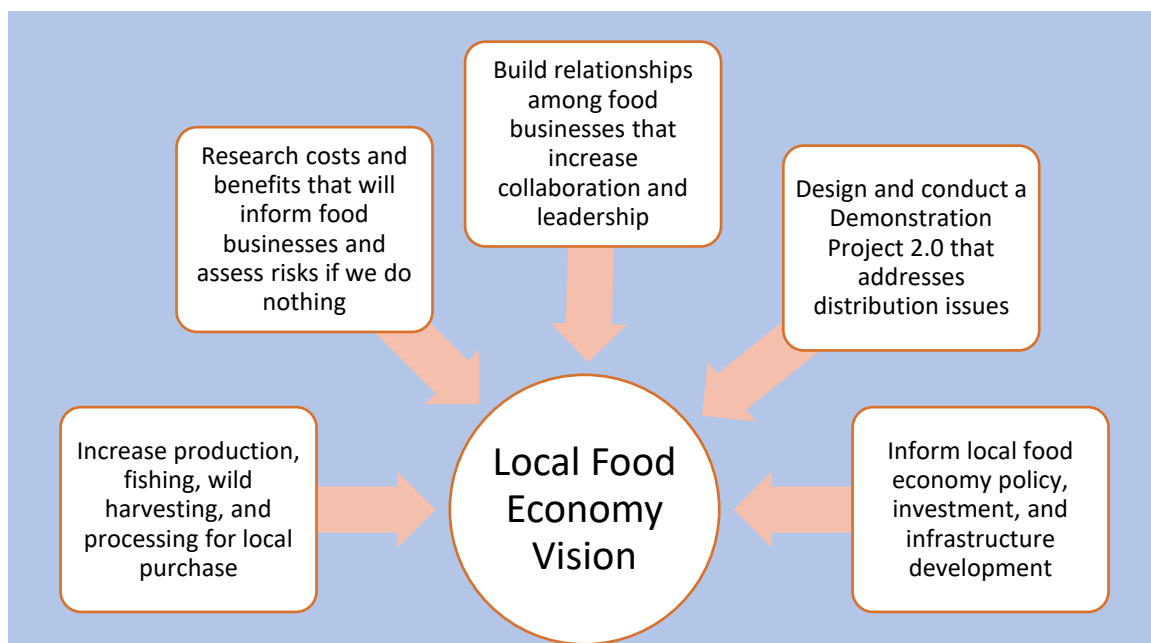
- there is a lack of understanding of the local ecosystem,
- there is not enough engagement with traditional knowledge, and,
- there is a concentration of external ownership of food system assets.

It was particularly interesting to observe the emerging shared understandings as the sessions progressed. Developing relationships among local businesses was identified as a priority throughout the symposium. One of the most remarkable outcomes, from my perspective, was the call for better data on the costs and benefits of a local food system. This question was raised at the first plenary so I went searching for data that I could bring back to participants. I searched every source I could think of and checked in with several academic researchers I know, but no one could point me to a source for such data. Following the symposium I took the question to the academics who sit on a Local Food Economy Metrics Working Group that I am part of. That the need for this local food economy data was identified in a broad-based participant group is an encouraging indicator of the interest in building sustainable capacity from the ground up. The Metrics Group, is not part of this research but runs parallel to it, created to advise a general local food development metrics project initiated by the Victoria Community Social Planning Council. It is now focusing on supporting participation in Closing the Supply Gap and we are in conversation with them about forming a research collaboration group as part of Demonstration Project 2.0. The group includes academics from four British Columbia universities, plus a community-based researcher, and me. Guided by the symposium outcomes, this group is designing evaluation research that can be attached to Demonstration Project 2.0. The intent is to include a network analysis of relationships within the emerging local food system that investigates the attributes which are most critical in building business to business relationships within a values-based local food short supply chain, and how the relationships change over the

time of the Demonstration Project. This work will focus on specific attributes in the network of food system relationships across the region and will include relationships within the fishing sector between non-corporate fishers and corporate buyers. The group agrees with symposium participants who expressed the view that although knowing more about the costs and benefits of a local food system is important information, it is not the driver of change at this time because doing nothing is no longer an option. Data on the costs and benefits will be a dynamic part of developing a sustainable system.

The symposium participants produced a plan of action. Figure 8 highlights the priority actions that the participants identified. One of the key objectives of the symposium was to produce a regional action plan that could be carried out in the next 12 months; the actions in this diagram reflect what the participants believed to be not only possible but necessary.

Figure 8: *Local Food Economy Actions for Change*



Since the symposium, a task group drafted the framework and priorities for carrying out Demonstration Project 2.0. The Leaders Group has reviewed and adjusted the draft framework;

actions are in motion across the region for its implementation. Several new participants have joined the Leaders Group, increasing representation, and expanding the understanding of needs and opportunities in the region. The work is beginning with an assessment of capacities and priority needs at the sub-regional level with a view to ensuring that localised strengths and differences are built into the regional plan. Further analysis of the symposium is provided in Chapter 5

Figure 9 shows the sub-region geography or domains of proximity within the region. These domains were decided upon in order to ensure that particular spatial needs are a core part of the development when the full system is designed. While spatiality of local food is a recommended consideration in the research literature, the importance of it came from the participant groups without any prompting. They identified the need for the system to build on the most localised strengths and diversity. Participants across the region are developing plans for action within localised organisations. The map illustrates the varied topography of the region and its relationship to the Pacific Ocean on the west coast of Canada. It indicates that there are 13 16 local governments in the region—13 municipalities and three electoral districts. These governments are organised through the Capital Regional Board of Directors. There are also 20 First Nations, 11 of which have reserve lands and nine have settlement populations. They represent the traditional and present day Coast Salish and Nuu-chah-nulth peoples with history and ties that go well beyond the contemporary Capital Region boundaries. Traditional Indigenous foods include many plant varieties, land animals, and seafoods which are wild harvested to the present.

or with global distribution and shipping issues as the pandemic has extended into its second year. Almost immediately, widespread tension arose as people were provided a glimpse into weaknesses in the food supply chain and interpreted this weak link as a supply issue (FAO, 2020). The news media reported a run on seeds as masses of people decided they must grow more of their own food, and agencies across the country and the world set about responding to increasing hunger (Globe and Mail, 2020, 2021; CTV, 2020, 2021).

As reported in the findings, almost instantaneously people mobilised. In this region alone, the pandemic spawned 10 or more groups which gathered regularly to address local food access and supply issues through at least the first seven months of the pandemic. There was spontaneous, collective action to grow gardens, bake bread, and sign up for seasonal food delivery from local farmers. I personally observed the shortage of flour on shelves in the grocery stores where I ordinarily shop. This shortage in the supply chain was explained by the almost instantaneous increase in home baking reported in public media, and was accompanied by a shortage in dried yeast for making bread.

In the interviews that I conducted with three grocery chain managers, I learned that shifts in demand contributed to a distribution issue related to inventory management in the industrial food supply chain. It was reported that the management of supply required considerable adaptation in the retail sector, exacerbated by hoarding. I saw posters throughout some grocery stores informing shoppers that the number of items per customer was limited. The grocers also reported increased demand for locally grown and processed food items. A leader in the fishing sector reported that many fishers were caught in the cancellation of corporate contracts due to COVID closure of export markets. These same fishers, however, set up at local docks with their catch and were overwhelmed with lineups of local shoppers. There was consensus that the

pandemic was a catalyst for increasing local food demand that was already in motion. Inadequate supply of locally produced food was expressed as an ongoing issue. The grocers remarked that building trusting relationships with producers/harvesters is key to increasing supply, and also that the many barriers which producers encounter in accessing the wholesale market place have industry origins. More than this individual action, though, the pandemic activated agency among protagonists to make changes that privilege local food in the food system. And researchers are at work to understand how the impact of the COVID-19 pandemic on the food system is different from previous crises (Clapp & Mosely, 2020). It is asserted that the way past food crises have been handled including a focus on industrial food production and profits is playing a negative role in how this food crisis is unfolding and increasing the divide between transnational corporations and local food proponents (p. 1,415).

While grocers experienced a strong surge in business due to the pandemic, the restaurant sector was disproportionately negatively impacted, with health regulations limiting service. As the virus created variants and prevalence of the disease increased dramatically, dining rooms were required to close across the region. In my key informant interviews I gathered information from a restaurant chef who described the situation as dire. The chef said they had to process a large supply of local produce that was in stock when service was curtailed due to spacing requirements and then cut back on orders from local farmers. They said they had spent years building strong relationships with local producers and cutting so many of them out was very hard. At the same time they knew of a local ice cream shop that was swarmed with customers.

Other local food processors had a similar experience as more people turned to supporting local food suppliers. One small scale processor I was able to contact explained that demand for their product increased many fold. This increased level has sustained to the present.

Concurrently, food recovery programs were inundated with food supplies from businesses that depended on the tourist trade which was cut off by the pandemic. And the demand for charitable food and meals increased as some people's work hours were cut back and whole jobs disappeared. The pandemic was declared in the spring of 2020 just when farmers were planting and getting ready for sale at farmers markets. With uncertainty about the operation of farmers markets in a pandemic they were worried about whether to continue planting as usual or curtail supply. The opening of these markets came under scrutiny by health officials who had to consider the risk of people congregating. At first there was a question about whether the markets could open at all. Upon consideration, health officials decided that farmers markets were an essential service along with grocers. In British Columbia, rules were put in place to provide instructions for people distancing from each other along with protocols for how transactions could be made between shoppers and the vendors at farmers markets. There was a slow opening of farmers markets in this region but eventually all the protocols were in place. It was reported at the Pandemic Relief and Recovery Task Group meetings I attended that not only were fewer farmers allowed at the markets but the number of customers dropped significantly as many people expressed concerns about public health safety. In response, some new on-line platforms were quickly set up to provide mechanisms for people to order directly from farms. In the case of one part of the region, the number of community supported agriculture customers increased by 300 percent. Although I have not seen the data, there are preliminary reports by researchers that CSA demand grew in many countries.

As the first summer of the pandemic unfolded, some farmers experienced significantly increased demand at their farm stands. The farm stand where I shop regularly was one of many examples of long line ups of customers forming down country roads. In my case, it was

impressive how the farm family that owns the farm stand where I have been purchasing produce, meat, and eggs for many years was able to set up protocols and provide a safe and welcoming way for people to source their food and support the local economy.

In short, the COVID-19 pandemic created an environment of contradictions in the food sector generally, and the local food economy specifically. As a researcher I attended the meetings of many different groups that formed more or less spontaneously at the outset of the pandemic. I regularly attended the Food and Agriculture Relief and Response task group in my home community. A group of us representing many different positions in the community attended—farming, farm market society, grocery, charitable food programs, local government elected officials, community economic development, emergency food. It was a large group that met weekly and then bi-weekly for several months to track issues in real time and follow through with actions to address them, and to create recovery priorities. I attended regional meetings of a group that called itself Growing Together comprising existing and ad hoc groups that organised to support the many, many people who wanted to grow home food gardens. This group worked with the local government to repurpose municipal greenhouses and their staff so they could grow vegetable starts that were given away to various target populations within the region. They distributed thousands of plants. The Growing Together group and others set up mentoring relationships so that new growers could learn from master gardeners and have all their questions about good growing practices answered.

I also attended meetings that had a focus on local economic development from a cross-sectoral perspective among the many small island communities in the Salish Sea, formally known as the Strait of Georgia. These small islands include an economy built on tourism which with the declaration of the pandemic was reduced to almost zero as a result of travel restrictions.

The group brought artists, artisans, food processors, home-based and small accommodation businesses together to share information and experience having to do with online marketing and website sales. At last count I identified five new online platforms for ordering local food in this region which, from my perspective, was another example that fragmentation is the default response instead of a systems approach. During this time, the provincial minister of agriculture reached out to our group of small island communities to hear about the issues and take note of suggested responses. These communities were not unique in her information gathering process as the provincial government worked at targeting pandemic response funding to both the social and business sector. Our conversation with the minister of agriculture was rich with information and experience.

A significant outcome of the provincial government response plan was to provide funding to agencies around the province that were recovering food waste from grocers and restaurants for distribution to low and no-income people in their communities. The government provided funding to increase capacity in a variety of ways, including coordination and equipment funding, and food purchase funding. In this region, the organisations involved developed a program on the spot to distribute funding to local charitable organisations and school districts for the purpose of them purchasing fresh produce from farms across the region. This ad hoc program was called Farm Bucks, and very cleverly ensured that if money was going toward food purchases that it was circulated within the region where it could boost the agricultural economy as well as feed people healthy, fresh local food. It was very popular and distributed thousands of dollars that directly supported the local food economy during the pandemic. This funding gave a boost to developing some regional food hubs as well.

Eighteen months into the pandemic and things are far from back to normal in the food sector. It does appear, however, that hoarding has calmed down but the resilience of the industrial supply chain is still in question. And global food prices have increased exponentially, reportedly by as much as 30 percent in the year since the pandemic was declared in March 2020 (Clapp & Isakson, 2021). There is still a heightened awareness of the need to increase local food production. I am told that seeds are still very much in demand by home gardeners and that farm stands and CSA programs are still flourishing. The local abattoir is still experiencing high demand for poultry processing and local grocers are exploring ways of increasing their supply of local produce. From a local food system development perspective there are positive anecdotal indicators that now is a good time to press for foundational food system changes.

Summary

The findings of my research are as much about the research process as the outcomes. Participation and change initiatives are in a dynamic relationship. I have observed the changes unfold as more participants joined the work to address the questions that the research posed. Consistent with the methodology, the results are qualitative. They include indications of heightened awareness and understanding of food system issues locally and globally. More people are stepping forward with concerns about capacity to create change and taking initiative to build capacity. Many concrete actions are in motion that will be captured by metrics work that is also in development as a result of this research. As the findings point out, building relationships and building infrastructure are held in equal positions of importance by the participants in this research. In the next chapter I analyse how theory and practice are working together to localise the food system. I return to the meaning of local and assert that localising food systems in the

21st century depends on local and global spatiality functioning in dynamic relationship. I assert that conflating industrial with global is problematic.

Chapter 5: Taking Control of the Food Supply

My aim in this chapter is to weave a coherent analysis of the actions that participants have taken to build a local food system in the context of this research. As part of this analysis I reach into the meaning of local food system actions as the place where food can be transformed from the commodity that represents it in the industrial food system to the physicality of its character which places it in relationship with its origins in specific socio-ecological and cultural environments. I assert that it is this relationship that is the common, global denominator that distinguishes local food from its industrial commodification.

Reflections on the Research Questions

To begin, I frame this discussion around the foundational questions that prompted this research and that give form to the emergent actions, analysis, and knowledge.

My reflection on the findings suggests that the first two questions fold into each other.

They asked:

- How can the participants (academic and non-academic) in this research build a place-based food system that embeds localised values? and
- What are the relationships and functions that are needed to create such a value chain?

The use of PAR provided the structure, facilitation, and leadership for participants to develop a unique local food system values proposition. It provided the form, establishing collaborative relationships that are defining cross-sectoral objectives and actions. PAR established cohesion that is necessary for ongoing change. This research has shown that re-localising the food system is not a short-term project but, rather, a developmental process that turns the values proposition into shared intentions and actions. The research built the base for this process through focus

groups, workshops, leadership discussion groups, interviews, reflection on research from other sources, and a five-part local food economy symposium. In the development and application of participatory action research methodology, the research created a dynamic environment for systems change.

The third research question was: What might be the intersection between place-based food and an industrial global food system and does it reflect local food values in its place of origin? This is a complex question that brings critical social theory and practice together. The research included a literature review that showed the ongoing issues in the industrial food system and the failed promises of the green revolution. In the current conditions of a climate emergency and persistent pandemic, it has become apparent to many that doing nothing about the food system is not an option. The literature review traced the controls that transnational corporations have over food sovereignty around the globe, their concentration of power, and the imbalance of power this represents at the intersection of the dominant food system with efforts to re-localise it. It shows that there is deepening concern around the globe about the most recent green revolution values and influences arising in the United Nations. In the actions undertaken in this research, the experience of this power imbalance manifested an expression of local values that would redistribute power across the local food system, values such as fairness, diversity, social justice, and sustainability. Reflection on the industrial control of infrastructure, technology, and local knowledge manifested a vision of a local food system that will link food production/harvesting, processing, and distribution, creating a local food supply chain, essentially using a circular economy model. At the intersection between the two systems, this model counteracts and perhaps will disrupt the vertical integration that the industrial food system is built on. Participants identified development of a local food distribution management system as the first

priority in the actions going forward in the next stage. A local food distribution system is understood as the fulcrum for increasing local food production, harvesting, and processing. It has been identified as the key to gaining local control of the supply of local food. The plan is that a values based short local food supply chain can be a mechanism for securing sustainability.

The fourth question posed in the research design was: How can research theory and methodology support the equalisation of power relations in the food system? This is the most challenging question of all in the research analysis. The answer is not at all straightforward but this research suggests that the key lies in the importance of relationships. The importance of relationships was raised by the research participants at every step along the way, supported by some of the literature which identifies them as drivers in the development of localised food systems. This research suggests that there is not sufficient information in the literature about how the relationships can be developed in an environment that has been fragmented by the industrial food system, or what the activating qualities of those relationships are. Based on findings to date, I assert that the combination of PAR and an interdisciplinary lens help to explicate how we can learn more about the essential elements of those relationships that will lead to sustainability. Sustainability requires a wide view of the meaning of food in a local food system as participants in the system identify it from a dynamic combination of cultural, ecological, economic, environmental, and social perspectives. This interdisciplinary perspective creates an intersection with the industrial food system based on power sharing. Through the tools of participation and collaboration it distributes decision making across the local food system that is a shift away from the highly hierarchical power structure that is modelled in the industrial food system. It relocates the meanings of food within localised experience and knowledge. Exploring more deeply into the effects, outcomes, and impacts of this intersectionality continues into the second stage of the

research. For example, the next stage will examine how the values of trust and fairness in business-to-business relationships can function, the distribution of profits across the system, making local food a priority in public food programs, building shared infrastructure, and engaging financial investment in the localised system into account.

Emergent Local Food System

In addressing the research questions I draw upon the research literature and the findings that wove their way through the collaboration process, the information and understandings the participants brought to the research, and the participants' actions. At the core of this work is the challenge of how to move the discussion of local and locale from a theoretical conversation to identifying the practical qualities and attributes of this, and any locale. Understanding locale is fundamental to building a "place-based food system" and naming the values that underpin it and define how it works on a practical level.

The term local is at once considered to be common knowledge and yet is so elusive that the research literature continues to beg the question of whether it is possible to create a local food system in its own right. In this section I use that conundrum to launch a detailed analysis, based on the experience of this research, that shows the inroads to making foundational changes, changes that have been accelerated by the COVID-19 pandemic. The pandemic has sparked a readiness for food system change. My research found that this phenomenon is apparent both locally and globally. In the case of my research, pragmatic changes are in dynamic relationship within a theoretical framework that interprets the structural issues and power relations which need to be taken into account in the change process. I assert that while the institutionalised forces of the industrial food system provide essential context, local food system development needs to set its own course, not in binary relationship with the industrial food system but as the first step

in establishing sovereignty for the power relations in the system as it is being built. This course is directly related to the previously discussed domains of proximity: geographical, relations, and values (Eriksen, 2013, p. 24).

In this analysis, I challenge the conflation of global with industrial, which is even more questionable as the concentration of ownership in fewer and few corporations increases. The industrial food system operates in the global milieu but it does not comprise the global environment. I raise a flag on networking local food systems as the pragmatic route to a globalised food system, defined by the diversity of that milieu rather than the one-dimensionality that the industrial food system represents. I offer a schematic of the short food supply chain that illustrates the core mechanism for building this system from the ground up. Throughout, I highlight the role of participatory action methodology as the organising mechanism for transferring knowledge among participants about practical local food system development and for mobilising food businesses, investors, planners, and policy makers as leaders of the change process. I begin, though, at the heart of the matter with a discussion about the meaning of “locale” in a local food system.

Taking Locale from Theory to Practice

The term “local food” is a trope for an image of nourishing fresh food grown by caring people in a sustainable way. This image is at once an endearing and ideologically strong organising force in the local food movement. Adopting it, however, as the organising structure for a food system is problematic. As I have previously discussed, the first problem is that it sets up a binary relationship between local and global food systems. There is no room in this binary for local food to be anything other than niche in the context of the dominant and domineering industrial food system and its conflation as the only food system that can exist globally. I assert

that a binary juxtaposition of local and global food masks the importance of global as a one-world concept. With the benefit of experiencing global climate change and a global pandemic at the same time it is easier to take a whole world view of the potential role of local food systems. In my research I found that many of the participants are already adopting a view of local that is global but not industrial. The literature analyses the importance of local food making linkages and avoiding the local trap related to scale and spatiality by considering the networking of local food systems. I return to this thread following a closer examination of what it is about locale that makes this structural change in the food system a possibility.

The Physicality of Local

It seems odd to me that in the research literature the physicality of local is not at the centre of defining the term as it relates to local food systems. I suggest that using the term *locale* helps to bring clarity in the discussion about this oddity; *locale* is the place where local food systems function. In this sense I am equating locale with “place-based”. I contend that physicality is the starting point of building a local food system and it is working within the physicality of the locale that embeds the character of the food produced and harvested there, the first level of sustainability qualities, and the values and culture that hold the local food system together. In my research, it is this combination of factors that participants appear to agree on as they identified “relationships” as a key value and factor in building the food system in this locale. Learning more about the meaning of these relationship intersections from participants’ perspectives is being built into the Demonstration Project 2.0 that is underway as an action from my research. Changing the physicality by using the landscape and waterways as a canvas to be painted on is a key characteristic of the industrial food system, as demonstrated with the design and implementation of the green revolution. In contrast, local food systems can and do

distinguish themselves from the industrial process by working with the environment and biodiversity of the locale. It is interesting in my research that a shared understanding of this foundational attribute of local food was embedded so deeply among participants that it was the basis of most discussions. Participant change agents appeared to come to the research with this shared meaning. In some ways this should not come as a surprise; traditional knowledge of the physicality of a place has for millennia defined the local food supply. In contrast, in the industrial food system, which is ubiquitous throughout North America, the food can be from anywhere and nowhere at the same time. Unfortunately, as a system it has been very successful in separating physicality from the food supply by artificially treating soils, seeds, and biodiversity with chemicals. Perhaps some additional signs of physicality seeped into the industrial distribution difficulties that have been observed in grocery store shortages and food dumping during the COVID-19 pandemic.

Neutralising food locale from the food system has never been more apparent to me than when I worked in the Northwest Territories in Canada. Wherever I went in the region the grocery outlets stocked nothing but industrial food. There was very little fresh food and an abundance of low quality canned and packaged foods, all shipped in through southern Canada. The historical and ordinary diets of northern peoples did not have a place in the grocery stores. Southern public policy had long since put obstacles in the way of the age-old practice in that place of traditionally harvesting foods from the land and water. The Canada Food Guide denied the validity of those traditional foods and the healthy diet they had provided Indigenous peoples in the north for millennia. My work at the time was to support a change in socioeconomic public policy that would increase wild harvesting and the return of what was commonly called “country food” to people’s diets in the north. This work had very limited success due to intransigent

institutionalised southern policies and practices. Three decades later the problems with the industrial diet in northern Canada continue to be a public policy issue and a problem in the lived experience of the Indigenous people who have had their food system turned upside down by colonisation and the one-dimensionality of the industrial food system. One thing that was not lost, however, was Indigenous knowledge about what constituted their local food. They knew the lands and waters in every corner of their place; they knew the winds and they knew the migration patterns of land animals and the behaviours of water species. They knew all about the foods their locale provided, the harvesting times for different foods, and they still had a strong understanding that their health for generations was tied to the health of the environment, ecosystem, and culture. They tried desperately to organise their lives in harmony with their environment. In addition to imposed policy constraints, three decades ago they were observing climate changes that were affecting every aspect of their food system (Kunuk & Mauro, 2010). In short, for them local was conflated with sustainability, and rightly so.

This narrative is not unique to northern Canada. The globalised industrialisation of the food system masks the dynamics of this intersection of the physicality of locale and the socioecological identity of the food. De-localising the food system was and continues to be a colonising act and corporate exertion of power over the sovereignty of communities and governments around the world. This phenomenon is discussed at length in the literature (Andrée, et al, 2014; Vivero-Pol, et al, 2019). And the effects of unlocking local from sustainable as an attribute of the industrial food system have been obvious in northern Canada for decades; they are becoming more obvious around the globe as a result of climate change (Clapp, et al, 2018; Cheikh Mbow & Rosenzweig, 2019). In my research participants shared a growing understanding of their role in redressing the industrial damage that has been perpetrated on food.

Through the months they discussed the importance of regenerative agriculture practices and called for education and training to be included in the actions going forward. It is interesting that the British Columbia government recently announced a province-wide program to advance regenerative agriculture knowledge and practice (BC Ministry of Agriculture, Food, and Fisheries, September 23, 2021).

Research participants began to consider how the industrial food system contributes to climate change and the priorities and goals for a local food system cross-over with climate action priorities. As I presented literature about the control that transnational corporations have over the food system through vertical integration and concentration, financialisation, and trade agreements, I observed that for many it represented new information and new perspectives. There is much more work to be done to communicate the nature of the industrial food system, the source of its power, and the barriers that make it difficult to change that power structure. For example, some participants indicated that they were not aware that trade agreements limit governments' authority to subsidise food production within local domains of sovereignty.

Attributes of the Local Food System in the Capital Region

As I discuss in this section, the locale of my research is very diverse in terms of population, geography, food supply both cultivated and wild, and a unique temperate (sub-Mediterranean) Canadian climate. The population of 425,503 comprises 23,000 Indigenous people and a non-Indigenous population that identifies with ethnic origins from all continents on the globe (Statistics Canada, 2016). The region has just over 1000 farms growing a broad range of vegetables, fruit, and livestock (BC ministry of agriculture, food and fisheries, 2019); more than 100,000 tonnes of fish/seafood were harvested off the coast of Vancouver Island in 2019 (BC ministry of agriculture, food and fisheries, Sector Snapshot, pdf). And yet the region does

not have a local food system. It has a fragmented collection of businesses that are committed to local food, and a strong local food movement. According to some grocers, the demand for local food far exceeds the supply and grocers and food producers agree there is significant lack of infrastructure to support local food storage, processing, and distribution. The region has a strong oral, historical record of Indigenous people feeding themselves very well indeed from the land and waters in the region. It also has a strong agricultural history dating at least to the arrival of Hawaiian and Japanese immigrants in the nineteenth century. With the industrialisation of the food system the local food practice and capacity diminished to the point that local food is niche, as in most of the world. There have been local studies of production levels and infrastructure capacity (McNair, 2004; Reichert, 2010) and although there are many active groups addressing food literacy and food access for disadvantaged people in the region, up until Closing the Supply Gap was launched, building a local food economy has eluded action, and change. As the collaboration advanced in my research and Closing the Supply Gap moved to focus actions that will systematically localise the food system, participants across the region considered a wide range of attributes that will contribute to making that system robust and sustainable.

Participants in the first demonstration project engaged in discussions about the relationship between increasing food production using best agricultural practices, bringing more agricultural land into production, improving depleted soils, using water wisely, and taking best advantage of a mild temperate climate for longer seasonal production. These practices represent values of sustainability in action. As the realities of climate change finally take hold across the region there is a groundswell of discussion about how agriculture can adapt and provide mitigation strategies that will sustain the food production physicality of the landscape.

Participants in the research referred to this type of agricultural practice as regenerative agriculture. Some also identified it as a form of permaculture which is ecosystem-based.

Participants discussed reclaiming access to the fishery which is so abundant in this locale. With the onset of COVID, participants turned attention to the wealth of fish and seafood within the region's coastal waters. It was disconcerting to learn that 85 percent of the catch, among the finest in the world, is harvested under contract to large corporations and packers and exported as an industrial product, while the population that lives here has to import fish and seafood. Today I heard the story from a reliable source about tanker trucks loading up at a dock in this region with thousands upon thousands of sablefish, all for export. As mentioned, with COVID many of the smaller fishers' contracts were cancelled and fishers looked to the people living in the locale to buy their catch. The lineups of local eaters at the docks are now part of the COVID narrative as people have swarmed to access this local source of fresh food that has been so elusive in the place where it is caught. The fishers' financial margins increased by selling locally instead of under corporate contract and the market price was lower for eaters, because distribution did not include the corporate margins. This phenomenon is an impromptu experience of a short supply chain that is now being examined within the Closing the Supply Gap Demonstration Project 2.0 that I discuss in more detail below.

With physicality being well understood, research participants discussed the primary attributes of this locale that are significant in supporting a short food supply chain. The first is a biodiverse geographic region that includes productive food lands (agricultural and wild harvesting) and waterways including extensive ocean shoreline (See Figure 9 above). The region includes small island ecosystems that are protected by unique land-use provincial legislation, called the Islands Trust Act which is administered locally. The second attribute is a diverse

population of 425,000 people who are distributed rurally and in a compact urban concentration. Thirdly, is the extensive expertise in the local food economy with a diversity of food businesses. The expertise includes grocers, fishers, farmers, land-based wild harvesters, food educators, chefs, processors, and small scale support services such as marketing, food safety, business management, and technology. There are even a couple of locally-owned distribution companies. Next is the existence of the population's general skills having to do with food production and harvesting. There is a diversity of post-secondary educational institutions providing high quality academic and trades certified food programs, and non-governmental organisations including the Horticulture Centre of the Pacific which provides a wide-range of workshops. There are a plethora of garden clubs and community allotment gardens that provide experiential learning opportunities. And there is an active elementary and secondary school garden program across all school districts in the region. Fifth, is the recognition that with this research we have added a food system values proposition that is built on values articulated collaboratively and championed by local food system leaders. And finally, there are governance structures—local government, First Nations governments, provincial and federal governments—that can support coherent public policy actions and changes.

It is happenstance that the attributes discussed at the symposium align with qualities discussed in the research literature, for example those referred to as domains of proximity: geographical, relations, values. This validation of theory opens the door to bringing more theoretical analysis into the participatory action work in the region. I am thinking here, for example, of the theorising around *re-territorialising* the food system (Berti & Mulligan, 2016), which resembles the initiative underway that we are calling *localising* based on the strength of the locale in local food system planning. Re-territorialising puts emphasis on creating new

connections within the market place which is similar to what we have called diversification of markets in the research Demonstration Project 1.0. It also recognises that the physical space of production, scale of production, and short supply chains are key qualities of reconceptualising the food system. Transparency, reconfigured power relations, and equity are part of the values Bertie & Mulligan (2016) advance, consistent with the values proposition that the participants in this research have articulated. The authors propose that, “A major area of research required for these initiatives is therefore how to scale them—both out and up in order to achieve their transformative capacity in the existing unsustainable agri-food system” (p. 4).

The Demonstration Project 2.0 that is in development in the ongoing work of Closing the Supply Gap is well positioned to take up this call for more research and action. The theoretical framework emphasises the importance of using a short supply chain model to test the development of new markets. Closing the Supply Gap has been working to build a short supply chain, based on experience and common knowledge—the qualities that are a strength of participatory action research and are often overlooked or undervalued in academic research. Berti and Mulligan (2016) identify the obvious vulnerabilities that the development of the short food supply chain must manage: long-term financial viability, dependence on volunteers, trade-offs between environmental values and economic equity (p. 10). They call for more research in this area and, again, the Demonstration Project 2.0 is well positioned to take up this challenge. A component of this work is examining the relationships within the local food economy and the short supply chain including the power relations (p. 15).

Taking Action for System Change

Chapter 4 of this dissertation described the outcomes of the Local Food Economy Symposium that we conducted within my research, and the goals of the Demonstration Project

2.0 that form the organising structure for the many priority actions identified by the participants. As noted, this work is ongoing. The overarching priority of the project is to demonstrate the development of a short local food supply chain that functions across the Capital Region and is grounded in developing “a local food distribution system that supports and encourages increased production, processing, and wild harvesting for local access and a strong local food economy” (Closing the Supply Gap, 2021, p. 3). A key role of Demonstration Project 2.0 is that the distribution component of the system can serve as the fulcrum for establishing sovereignty over the supply chain.

The symposium participants and the task group they formed combined with the Leaders Group that developed the framework and work plan for Demonstration Project 2.0, were able to identify the relationships and functions that they assert are the pivot points or levers for moving away from the industrial food system in this region toward a local food supply chain that embeds local values. They determined that the best approach is to organise the work through three sub-regions. In addition, the demonstration is taking a systems approach by addressing a number of key infrastructure gaps in the current flow of local food in the region, including inventory management, technology, administration of the system, and the storage and transport of local food from producers and fishers to buyers. These functions are levers for increasing local production, processing, and building relationships across the system. This focus grew out of the discussions among participants that getting food to market is a major obstacle to increasing food production and gaining access to mainstream venues. The participants were talking about distribution as a system of functions that are tied directly into this locale and its physicality. The physical aspects they identified are the actual transport of fresh food given that there is not an effective means of moving goods that originate in the region to other places within the region.

There are many islands in the region which can only be reached by water and the system of rural roads throughout the region takes more time than the distance indicates because of the physical geography. They also identified the need for effective ordering technology. Among the plethora of local food online platforms that are currently in use in the region they could not identify even one that manages the different operational needs in different parts of the region. It was at this point in the discussions that one of the participants made the point that its not good enough to talk about local food without taking actions to be local.

As the research literature notes, appropriate and innovative technology is key to local food system development. It is also identified in the literature as a point in the current system that gives privilege and power to the industrial corporate and donor sectors (AGRA, 2009; Canfield et al, 2020). So, local technology can be a lever for control by shifting the balance of power to the local food system. Overall, the participants are setting a scope and participatory process for the demonstration with a view to testing many different aspects of the priorities that will establish a short supply chain, one that will work in dynamic relationship with increased production and harvesting and diversity of market streams.

Following the symposium, the participants have taken actions at the sub-regional level to ensure that the system would be built from the ground as a foundational piece of scaling to regional scope. In this process, relationships will be developed from the sub-region through to the region. The framework divides the region into three sub-regions based on geography and existing relationships: the western communities, the greater Victoria area, and the southern gulf islands. These sub-regions are marked on the map in Figure 9 above. Working from the sub-regional to the regional scope will incrementally test scalability and the values proposition. The first actions underway have to do with assessing the capacity of each sub-region, including

availability of hard infrastructure for storage, packing, and processing, expertise and commitment within community-based food groups and businesses, available resources for increasing production and harvesting, and existing technologies.

The capacity assessment is leading directly into mapping the baseline of the short supply chain as the subregional development progresses. As noted there are three subregional food hubs in development. Action is underway at the centrally-located food hub to diversify products involving a group of farmers, a processor and two independent grocers, and to test new contractual arrangements among the participating businesses. In sum, the participants within the context of the research design have defined what needs to be done to create a short, values-based local food supply chain through a process of collaboration in a dynamic PAR research model that redistributes power within the local of origin. They have put this work in motion as the foundation for establishing a local food system in the locale where they live. They have not left research theory and science out of this model but, rather, have incorporated it into their knowledge and experience. Table 2 is a matrix of the link between theory and practice that came together in this research project. It illustrates a framework of change that combines theory and action.

Table 2: *The interaction of theory and practice in Closing the Supply Gap*

<p>Theory: Domains of proximity & spatiality</p> <p>Practice: Local knowledge Physicality of locale Systems development</p>	<p>Theory: Re-territorialising embedded market values</p> <p>Practice: Values proposition Food culture</p>	<p>Theory: Power relations</p> <p>Practice: Collaboration Business-to-business relationships</p>	<p>Theory: Sovereignty</p> <p>Practice Short local food supply chain Localised capacities, infrastructure needs, gaps, investment</p>	<p>Theory Scalability</p> <p>Practice Developmental processes Distribution management based in values of local sustainability</p>
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Building a Short, Values-Based Local Food Supply Chain

As noted previously, work is in progress to refine the metrics that will provide information to the participants about the process they are involved in. A key component of the metrics currently being designed by the metrics expert group is to conduct a network analysis examining core aspects of the relationships that the participants in the system are building. Throughout the research, participants have identified the importance of relationships in the local food system. Although the research literature also states that relationships are of central importance in a local food system and many case studies point to functions that depend on relationships in direct marketing transactions, I assert there is considerable need for local food research to examine the nature of existing relationships more closely and learn from business participants the factors that build trust and a sense of fairness among businesses. The aim will be to predict which relationships and which attributes are most crucial to local food system sustainability. Based on the focus groups I conducted, questions about trust and the nature of business transactions must be tied into the analysis. In the case of contracts, for example, is there

an assumption of a social contract or the lack of a social contract that is inherent in local food system commercial transactions? What is the normative framing of business contracts among producers, processors, distributors, and retailers that builds trusting relationships? What is the nature of power differentials among local food system businesses and how does the differential affect the functioning of a values-based short local food supply chain?

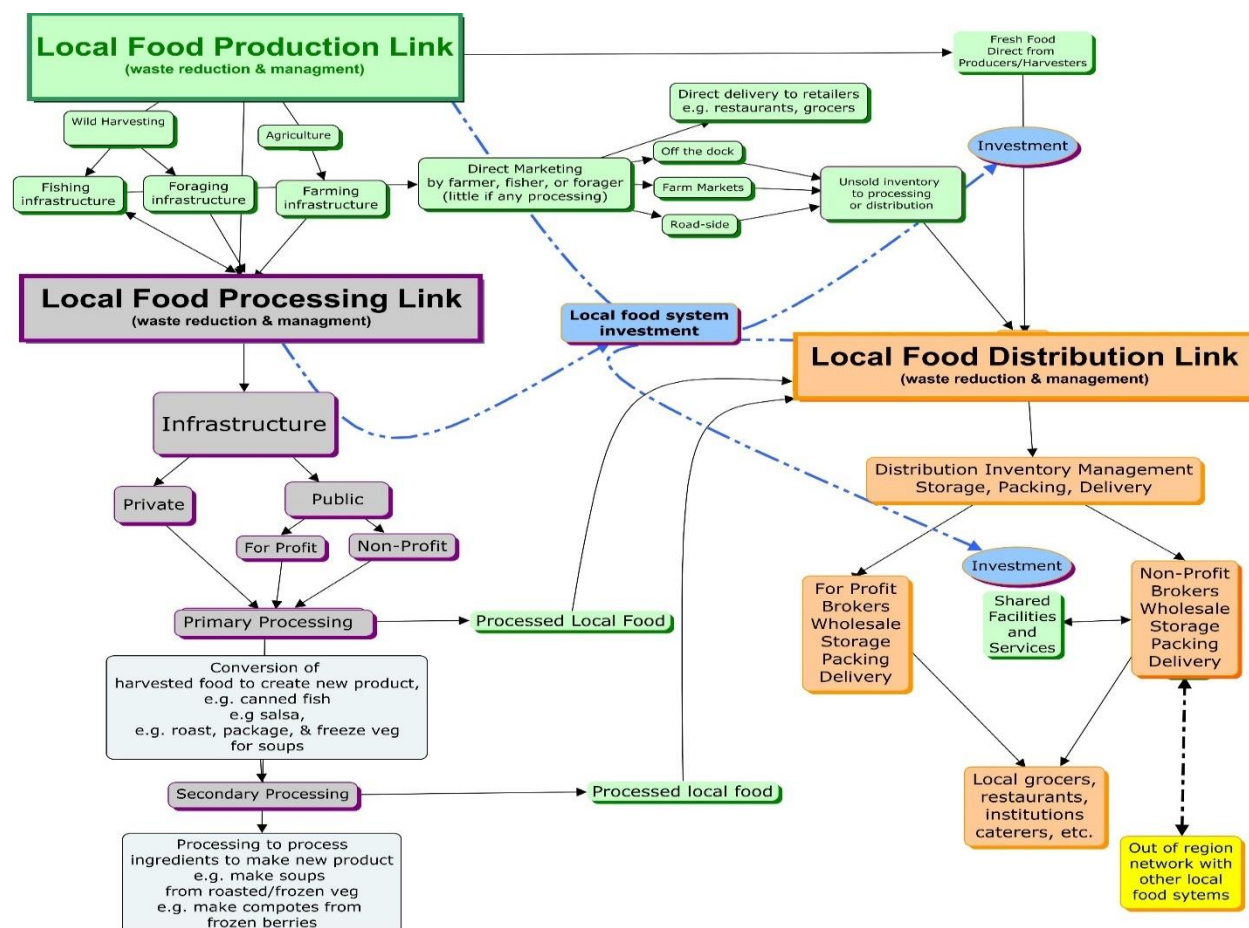
The dominance of the industrial food system has established a hierarchy of control that diminishes decision making the closer one gets to growing, harvesting, and/or processing the food. I do not know if this area of research is neglected mostly due to the *local trap* but having more information about local food system relationships will help to articulate the key relationships within a local food value chain. Not only is it useful for local food system development, but without this information food system transformation runs the risk of accepting the value chains that corporate industrial planners are developing (Clapp & Mosely, 2020; Wise, 2020). It is important to understand how local food systems are different from the industrial food system based on the nature and attributes of key relationships. Adding to this area of research is a key goal of Closing the Supply Gap Demonstration Project 2.0 as it goes forward. The next section presents a model of a short local food supply chain.

Schematic of an Emerging Short Local Food Supply Chain

Figure 10 illustrates the components and functions of a localised short food supply chain that could operate the local food system in this region, and could be adapted for use in other locales. It includes the components necessary for localised scaling up of food production, including fishing, farming, wild harvesting, and processing. This system holds the potential of linking with other re-localised food systems based on embedded values of sustainability.

A key attribute of this short local food supply chain model is that it is not vertically integrated but, rather, invests decision making in each of the components with the nexus being the production node. In this model, farmers, fishers, and other wild harvesters can make a diversity of marketing decisions supported by system infrastructure. They can choose selling direct to eaters, direct to primary and secondary processors, direct to retailers, and direct to distributors. If they wish they can choose any or all of these mechanisms at the point of production, depending upon their business model and relationships within the locale. Importantly, whatever their choices, in this model the system is in place to ensure that production decisions are not being made in a void.

Figure 10: Schematic of a Local Food System Short Supply Chain



In the schematic I have indicated polygonal pathways to show that this local food short supply chain is not a two-dimensional or linear chain but, rather, is interactive from any point in the chain to any other point in the chain, depending on what is needed to create or maintain resilience in the system and to ensure diversified decision pathways. It discourages vertical integration that concentrates power in a few corporations or institutions. It is a power-sharing model. In this way, it can accommodate planned redundancy if necessary to support resilience, such as to advance climate action or address extraordinary needs in a pandemic. The vertices within the supply chain are representative of choices that can be made by participants within the chain rather than externally. They are the pathways for building those relationships that make the system sustainable.

Following the arrows, the schematic illustrates that options remain open within the chain for public and privately owned infrastructure and for several links into the distribution system. It indicates that waste reduction and waste management—both of which are huge issues in the industrial system—are integrated into the operational culture of each component. The character and sustainability of the chain will depend upon the nature and quality of relationships that are built within the chain and the values proposition that people within the locale embed in this re-localised food system. The relationships will determine the value of food and access equity in the social structure of the locale. The schematic illustrates that distribution to food programs can be built into production and processing as part of the system, so that high quality food is available for all. The chain creates the structure for building the socio-ecological-economic relationships within a values based environmental and cultural matrix, a priority identified by participants in this research.

It is reasonable to assert that in the process of reshaping the culture of the food system, local sovereignty will emerge. Food policies will change and local investment will be drawn to the system. Given the priority that participants in this research placed on relationships within the food system, it is reasonable to predict that the success of the players in each of the nodes is dependent on equalisation of power with the players in the other nodes. Most significantly the polygonal pathway is a mathematical metaphor for the transformational potential of this model, including scalability while maintaining the integrity of the food supply in the originating locale. In this schematic local food for local use is the first priority while suggesting that local food systems can be networked based on local food system principles and values.

Summary

I organised my research questions and research design around the theory and practice of changing the food system. Changing values, relationships, and power relations brings food production and food culture under the microscope of critical analysis and transformational potential. In this chapter I reflected on how the participants in this research demonstrated knowledge and understanding of the issues embedded in the food system. They created plans of action that test their capacity to build a local food system in the locale where they live and they have committed to base that system on a values proposition of sustainability, diversity, and knowledge. The research considered the question of what is local and what does it mean; it calls for a more advanced understanding of the aspects that are problematic in conceptualising a local food system's scale, spatiality, and what Eriksen (2013) calls domains of proximity: geography, relations, and values (p. 48). These qualities place food within a *locale*.

The research has developed the conditions for change and has put in place a demonstration project that is continuing beyond the timeframe of this research project. It has also

embedded new research into the next stage of this work. As noted in Chapter Four, time is an important attribute in a PAR design. In the case of my research design timeliness is also significant as participants employ the advantages of heightened awareness due to the COVID-19 pandemic to advance an ambitious agenda. In the next chapter I reflect on the sum of my research and speculate that a local-global nonbinary relationship can define food system transformation.

Chapter 6: Transformative Action

The industrial food system is built on a narrative of scarcity, that countries in the global south could not produce enough of their own food and, therefore, needed scientific intervention (Borlaug, 1968; Lionaes, 1970). As the research literature points out, the green revolution promised and continues to promise health, wealth, and scientific innovation for the countries where researchers and investors have launched its experiment; they promise to share these benefits around the world (AGRA, 2009; Borlaug, 1968; Harris, 2009; Matson, 2012). Instead, the green revolution has replaced traditional foods with vast production of exportable crops. An analysis of green revolution impacts shows that it has used a particular application of scientific research to create a one-dimensional food landscape and culture. The IPCC reports that the resulting industrial food system is a major contributor to climate change and ecological degradation around the globe (IPCC, 2019). Unimaginable numbers of people are hungry, wasting, stunted, and are part of an inclusive group called food insecure. The FAO reports that health care costs for chronic illnesses due to industrial food will reach more than a trillion dollars per year in the near future (FAO, 2020). Instead of scarcity of food there is now unthinkable food waste. The industrial food system has, indeed, produced wealth, but that wealth and associated power are concentrated in the hands of an increasingly smaller number of people. As Clapp (2021) explains in her analysis of the financialisation of the industrial food system

this corporate concentration and power can shape food systems in profound ways, with enormous implications for equity, sustainability, and democratic participation. The power at the disposal of concentrated firms, and the strategies they pursue to influence the market, technology, and policy contexts, overlap and reinforce each other in complex ways. (p. 406)

This dissertation reports on research that has set in motion a re-localising of the food system in this locale aimed at situating equity, sustainability, and local sovereignty at the core of the system. Despite decades of struggle, local food advocates and supporting organisations have not been able to overcome the control that transnational corporations have over the food system; the organisation of local food for local use continues to be fragmented. As noted previously, local food has become a niche product in the industrial commodification of food. My research asked a set of questions pointed at how to build a place-based food system that embeds localised values grounded in local culture and including sustainability. It explored how we can bring theory and practice together to frame a change process that is focused not on fixing the industrial system but, rather, that turns attention to how we can build a localised food system from within. It asked what kinds of relationships are involved, and how can research help to balance power and decision making toward local control of the supply of food. The factors that structured the research and played a key roll in the emerging results are an emphasis on using collaboration to build leadership across the food sector, establishing a systems perspective, and building a cross-sectoral values proposition to underpin the work and the priority actions. Critical theory and PAR framed the research design and process. PAR itself expressed a localising core value of equitable power relations, inclusion, and acknowledgement that food system development involves a combination of academic, experiential, and traditional knowledge (Fals Borda, 2007; Roberts, 2000). I observed that it is out of this combination that shared meaning was built and infused the actions with shared energy. In the analysis it points to the inappropriateness of conflating industrial food with a global food system and in the interests of scalability, begs the question of whether local food systems can be globalised through sustainable networking. This path is part of the short local food supply chain that is illustrated in Figure 10.

In this dissertation I have outlined the actions that participants initiated and supported in a collaborative context. There is no précis that can adequately represent the process of this research with all of the reflections and persistence in the shared belief that not only *can* we build a local food system in this region but, as the pandemic interrupted business as usual, there is a growing conviction expressed that we *must*. Using PAR's reflexive and reflective qualities my research critically engaged participants in collaboratively considering how a local food system could function, not as a niche alternative, but fully in its own right. Participants organised and attended the Local Food Economy Symposium and hatched a plan for a demonstration project that is designed to create and test a short local food supply chain. They decided that the demonstration should focus on building a region-wide local food distribution network as the fulcrum that will prompt, and maybe secure, increased agricultural production, fishing, wild harvesting, processing, and investment in local food for local use. This work is ongoing. It is based on the values proposition that participants created. Equally importantly, the plan is based on a deep sense of what local means in a local food system, a point on which theory and practice are working in dialectical relationship. The plan they developed makes it clear that the system shall be defined by the values and relationships that participants have been discussing through the many months of the research. A key factor that participants have built into the plan are the physical attributes of the locale in which this food system will function. With this plan the participants have brought together the domains of proximity—geography, relations, values—through sub-regional development that are also a significant theoretical construct in the literature; they are demonstrating in practice what *local* means in a local food system (Born & Purcell, 2006; Erikson, 2013; De Shutter, et al, 2019).

Defining and understanding the locale must be an essential first step in establishing the physicality of the place. Traditional and Indigenous knowledge as it applies to the food system inherently support this contention. In establishing a local food system knowing the attributes and interaction among geography, environment, and socio-ecological circumstances is foundational. Emboldened perhaps somewhat by the experience of living in a sudden and disastrous pandemic, the participants in this research are engaging in a values-based plan of action. The plan moves forward as I write this dissertation; discussion is in progress that ranges from the efficacy of developing a collaboration charter that may provide a governance structure for local food system leadership and work is underway to establish a baseline of localised capacities that will form the structure of the new supply chain.

The ongoing work is also research-based with a parallel group developing the metrics that will add information to what we know about the nature of relationships within a short, values-based local food supply chain. The participants are contributing to defining the priority questions driving the metrics. Growing out of the collaborations it has been possible to develop a schematic that shows the components of the supply chain, their key functions, and their linkages. The functions are not only financial in nature but are intended to embed the values that people in this region want their food system to reflect. The schematic provides a concrete starting point for engaging food sector leaders in defining the culture and sustainability attributes of the supply chain. It is intended that the supply chain will be a dynamic environment that emerges as the system changes.

Recently, emerging research is showing that at the same time as the United Nations is counting the 1.3 billion hungry, wasting, stunted, and food insecure people around the world, it stood arm in arm at the 2021 UN Food System Summit, the first of its kind, with the promoters

of and investors in the resurgence of the green revolution in Africa through the Alliance Green Revolution in Africa (AGRA, 2021) (Canfield, et al, 2021, Clapp, et al, 2021). The UN is linking its ambitions for food system transformation to philanthropic donors who are investing in infrastructure to support export crop development, and corporate-controlled technology and distribution mechanisms. As in the 1940s when the green revolution was launched, the development of AGRA since 2006 is promising to rid the continent of hunger. Planning and financial investment in this system are dominated by a group of corporate executives, high level government elected and non-elected officials, and extraordinarily wealthy private donors (AGRA, 2009, 2010). On reflection, the understandings expressed by the participants in my research indicate that a local food system cannot be made by people from someplace else. This may seem obvious or superficial but, I assert, it is a quality that must be named because it is a foundational difference that has quantitative and qualitative significance in distinguishing between a localised food system and the industrial one. If it is a local food system then locale and its physicality matter and give meaning to the food system that people from the locale create; they assign the scope and content of production, wild harvesting, and distribution practices that are required for that locale. They define the food system values that matter to them. In taking these actions they lay claim to their food culture and food system sustainability and sovereignty.

From its very beginnings the industrial food system was created and managed by people from someplace else. I made mention of this earlier in the observation that the green revolution was entirely instigated and established by the leaders of that initiative going into someone else's locale, other than their own. They brought different production methods and crops, and they changed the food culture and local access to food. And to the present time the industrial food system continues to grow and operate on the basis of shareholders, equity investors, and

corporate owners inserting their financial interests and values into other people's locales. It is this institutionalisation of corporate power over food that brings into play the financialisation of the industrial food system (Clapp & Isakson, 2021) which is perpetuating and reproducing itself in a way that is from *no place*.

In terms of its own business model, the industrial food system is only sustainable if it is global which ironically, recent research affirms, is creating an unsustainable world (IPCC, 2019). It is producing waste and hunger as a part of the model. In the current climate change crisis and the transformative measures that must be taken in the interests of global life it may well be the case that the globe is only sustainable if we blanket it with a network of local food systems. This proposition is supportable within a critical social theory framework that seeks not only transformation but transcendence to achieve new solutions. The proposition requires a commitment to a dynamic transdisciplinary process that makes space for the complexity and diversity of the problem (Hirsch Hadorn, et al, 2006). Such a process is "seen as part of a social process with strong elements from the bottom up" (p.121) and is not far removed from PAR and Indigenous knowledge, both of which come from a tradition of understanding both the spatiality of food and its cultural significance. It is possible that a transdisciplinary framework has the scope to consider scalability from local to global without binary boundaries and without losing values of common good and sustainability of the planet. It is supportable to assert that strong short local food supply chains based in local values and decision making can be networked to create a new market place that rebalances instrumentalism and marketness in favour of food, not as a commodity and all that implies (Hinrichs, 2000; Vivero-Pol, 2017; Wise, 2021), but as a shared cultural bond in a one-planet world. Not that long ago this may have been described as a pie-in-the-sky proposition, but with the confluence of a persistent pandemic and a climate crisis

it feels like a necessary proposition. Participants in my research and the actions that are in progress in this locale suggest that the proposition is gaining probability. This transformative process can be part of the urgent commitment to climate action, diversity, and social justice that is emerging when local knowledge is embodied with agency. Critical social theory supports the assertion that localising the food system will not happen based on individual food choices but, rather, will emerge from deep social and institutional change.

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