

How Canadian Local Governments Enhance Food Security:
*Exploring food security approaches in
urban, rural, and suburban contexts on Southern Vancouver Island*

by

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Authors Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners. I understand that my thesis may be made electronically available to the public.

Abstract

The objective of this research is to identify what actions local governments are taking in the urban, suburban, and rural context, and how food security has been conceptualized. Food security is commonly understood to exist when all people at all times have access to sufficient, safe, nutritious, and culturally appropriate food so that they can maintain a healthy and active lifestyle (FAO, 2019; Food First NL, 2019). Health Canada currently provides food security studies and services as part of its objective to help Canadians maintain and improve their health.

Current actions and strategies that address food security are generalized in nature, and do not differentiate between political and professional audiences, or urban, suburban, and rural contexts. It is important to understand the differences between contexts and audiences for food security objectives to be effectively prioritized, as urban, rural, and suburban communities may conceptualize and address food security differently. While some attention has been placed on understanding the tools that local governments can use to address food security, additional research is needed to identify how urban, rural, and suburban local governments can support local food systems within their distinct contexts.

The themes and strategies uncovered in this thesis can be identified for other jurisdictions. Additionally, these themes can highlight areas for future research. It is estimated that the Province of British Columbia is only able to meet 46% of its food needs with local production (ALC, 2015), and local non-profit activist organizations claim only 10%-20% of food needs are met locally on Vancouver Island (Cowichan Green Community, 2010). In the context of a dynamic global market that is susceptible to downturns, collapses, and disruptions, it is apparent that some level of local production capacity is necessary to ensure that communities are resilient so they can respond to the impacts of potential hazards and mitigate their risk exposure if access to foreign resources is disrupted.

Given recent trends in local population growth and the development of agricultural land, combined with its location in a geographic area prone to earthquakes, Vancouver

Island is at a particular risk for the impacts of natural hazards and functions as a useful case study area. I interviewed 11 public officials and 9 municipal professionals to identify how local governments are conceptualizing food security, and which actions and tools these governments are utilizing to address food security. This extensive examination of municipal actions has been contextualized in urban, rural, and suburban contexts so that the findings can be useful for communities with similar conditions.

The results of this study identify how local governments understand food security, and the approaches that have been taken to address food security issues. This thesis contributes to the literature by helping to operationalize the concept of food security within a market-based economy, while identifying the gaps between public policy and food security literature by contextualizing the findings in urban, suburban, and rural communities.

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Chapter 1: Introduction

1.1 – Food Security in the Municipal Context

Throughout human history, food systems have shaped the growth of settlements and cities (Wright, 2004). The advances in agricultural technology and access to foreign markets have been able to support the growth of cities beyond the carrying capacity of their local resources (Pothukuchi and Kaufman, 1999); however, these global markets are not always secure. Disruptions can impact the costs of imported goods, which typically impacts low-income individuals (Tarasuk, 2010; Satterthwaite et al., 2010; Pelletier et al., 2000). When disruptions occur and food prices rise, these individuals are generally limited to buying lower quality food, which can lead to health problems (D'Angelo et al., 2011). This, in turn, can impact the levels of public health funding. For this reason, food security policy, programs, and infrastructure have become core components of public health programs throughout Canada (Seed et al., 2013). While the least advantaged citizens are more susceptible to the impacts of food insecurity, all citizens are exposed to some level of risk. In the event of a market disruption, food insecurity has the potential to impact all members of a society, not only the least advantaged.

Food security requires that all individuals at all times within a community have access to the food they require to lead a healthy lifestyle (FAO, 2019). Grassroots organizations have also promoted food sovereignty in an effort to reduce local vulnerability to food insecurity. One of the principles of food sovereignty is that communities should be able to produce enough food to feed their populations so that they are not dependent on the stability of foreign markets (Food Security Canada, 2015).

Based on the definition of sustainable development stated in the *Report of the World Commission on Environmental and Development: Our Common Future (1987)* as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs,” it would seem that food security requires some level of sustainable local food production to account for market shortfalls, resulting in some level of food sovereignty. Additionally, the Brundtland report (1987), which pointed to the decline of the availability of arable land, included strategies such as creating national reserves of arable land and coordinating with local land owners to provide incentives for restoration so that agricultural productivity can be maintained for subsistence farming.

Many planning practitioners have recognized that food security must be a consideration for a healthy and sustainable community (de la Salle and Holland, 2010; Koc et al., 1999). Furthermore, approaches to urban planning like *Agricultural Urbanism* promote strategies for identifying and developing sustainable food systems, and provide high-level objectives such as preserving agricultural land through regional and community master plans. This approach only provides guidelines for creating tools, rather than highlighting specific tools and strategies that planners can utilize (de la Salle and Holland, 2010). Other practitioners have pointed to predominantly urban solutions to address food security. Urban expansion in particular has resulted in the loss of significant portions of agricultural land, as well as the establishment of obstacles to urban agriculture (Koc et al., 1999). Morgan and Sonnino (2010) point to Toronto, New York, and San Francisco as North American urban food strategy pioneers. Other practitioners, such as Mendes et al. (2008), recognize Vancouver and Oregon for their novel approaches

to address food security through urban agriculture. While understanding that rural-urban interrelationships are critical for addressing urban food-security issues (Koc et al., 1999), only San Francisco is credited for a holistic strategy that embraces both the city and its hinterland (Morgan and Sonnino, 2010).

Food security has typically been seen as a public health concern better addressed by public health authorities rather than a local government responsibility (Morgan, 2009). Some planners have noted that the low levels of involvement in food system issues are the result of the perception that the food system is not a function of planning agencies (Pothukuchi and Kaufman, 2000). Since the food system is primarily driven by the private sector, politicians may not link food systems to community planning (Pothukuchi and Kaufman, 2000). Literature aimed towards planners and politicians highlights the importance of placing food security on the political agenda rather than identifying practical tools to address it. For instance, *Agricultural Urbanism* has been promoted as the start of a paradigm shift in planning by some practitioners, but it only provides high-level suggestions like developing regional strategies and preserving agricultural land (de la Salle et al., 2010). Others, such as Mansfield and Mendes (2013), note that comprehensive municipal food strategies are still lacking, and have attempted to advance understanding of food strategy implementation by local governments. There is a small but growing academic investigation into food systems planning (Mansfield and Mendes, 2013), but it may be limited to urban or suburban contexts. It is important to recognize the differences between urban, suburban, and rural communities, as actions that may be effective in one context may not be as effective in others.

Interestingly, public health officials have been highlighting the importance of local

governments in food system issues in both modern and historic contexts. The New York Department of Health argued for the creation of municipal food departments to control distribution and acquisition in times of crisis (Salthe, 1918). While food security is still a relatively new subject matter for municipalities (Mendes et al., 2008), the potential crises they face in light of peak oil, climate change, and urbanization share similar themes. Public health practitioners have noted that promoting healthy communities is at the heart of local government (PlanH, 2010). Even though the primary responsibility for health services rests with higher levels of governance, local governments can significantly impact the health and wellbeing of citizens at the community level (PlanH, 2010).

The available literature describes different dimensions of food security. For instance, there are clear links to health and sustainability (de la Salle et al., 2010), food accessibility and social justice (FAO, 2019; Tarasuk, 2010), community resilience and disaster preparedness (Kulig et al., 2008; Roberts, 2008), and economics (Desrochers and Shimizu, 2013). To date, food security research has largely focused on the dimensions and indicators of food insecurity at the individual, household, community, and international levels. These dimensions often identify the relationship between food security and public health, poverty, low-income individuals, food production, food distribution, and food safety (Collins et al., 2014; Wekerle, 2004). Despite the emergence of food security research in urban-planning literature, the role of local government remains unclear in practice (Pothukuchi et al., 2007).

Notwithstanding this gap between literature and practice, some planning practitioners consider food systems to be a critical component of sustainable urban design, and recognize that local government can achieve this by providing resources,

undertaking projects/programs, advocating/facilitating, and by regulating and establishing policy (Buchan et al., 2015). Since the research of Buchan et al. (2015) has identified the overarching goals/objectives that local governments can take, food security indicators/ conditions, as well as the relationship between public health and food security, the existing literature provides a framework for examining the roles that local governments play, and the rationale that they rely upon.

1.2 – Research Question

The objective of this thesis is to assess the diversity of food security approaches and concepts at the local government level, including tools and actions. To address this objective, the following questions will be posed:

- How is food security conceptualized at the local government level?
- What tools, methods, or policies have been introduced at the local government level?
- Are there any potential tools that could be introduced at the local government level?

This research identifies how some local governments have attempted to reduce food insecurity at the local level, explores how local government officials and bureaucrats have conceptualized food security, and identifies specific tools, policies, and actions that relate to high-level municipal and provincial public health/food security objectives, which can reduce vulnerability to market fluctuations and facilitate more resilient communities. These objectives will be met through a case study of the Greater Victoria Area in the Capital Regional District, British Columbia.

1.3 – Study Rationale

Food security research has been increasing in popularity in both academic and government circles. This research is primarily focused on how food security is conceptualized by policy makers and politicians at the municipal level within the Capital Regional District in British Columbia. The dimensions of food security can be framed in terms of public health, and is also being explored in terms of community resiliency and sustainability. Planning and public policy literature also frames dimensions of food security as a foundation of both public health and overall sustainability. The aim of this case study is to identify the variety of meaning ascribed to food security by the people who create policies and make decisions at the local government level.

It is possible that some case study communities may not ascribe value to food security policy, and portray food security as part of a populist movement. These dimensions of food security are also described in the literature. For instance, some critics of local food policies may suggest that the global market will always supply the needs of local communities, and that when disruptions and disturbances occur, the market will correct itself (Desrochers and Shimizu, 2013). These practitioners have also pointed to the fact that greater reliance on long-distance trade has produced more abundant and affordable goods to local consumers, which can significantly improve their quality of living (Desrochers and Shimizu, 2013). Some, such as Pierre Desrochers in *The Locavore's Dilemma* (2013), have suggested that the local food movement is a romanticized view held by some of the wealthiest individuals, rather than a genuine movement to bolster community resilience, resulting in less food diversity and higher

prices that restrict the marginalized from participation. Other practitioners have noted that eating local food is not automatically more ecologically sustainable or socially just on the merits of being local, and caution planners to avoid the assumption that local is always better (Born and Purcell, 2006).

Despite criticisms of local food movements, planners have a professional obligation to defend the public interest. Even if planners assume that the market will self-correct, local food supplies must be able to meet the needs of the population during times of disruption. In the event of a market collapse, this need is even greater. This thesis will help to operationalize the concept of food security as it is understood at the local level by politicians and planners in the Capital Regional District of British Columbia. This inquiry will also help to clarify whether or not food security is being viewed as a component of the public interest by the planners and politicians who help to shape public policy.

1.4 – Thesis Assumptions

As described by McCracken (1998), the goal of qualitative research is to identify patterns of interrelationship between many categories, with the isolation and defining of these categories occurring during the research process. This lens of research is not as precise as quantitative work. It is much broader in nature, with data that is normally messy and unorganized, requiring the researcher to sort the data by seeking patterns of association and assumption (McCracken, 1998).

As described by Tongco (2007), purposive sampling techniques are crucial for key informant selection as this allows researchers to identify and select people who can, and

are willing to, provide information on the research question by virtue of their knowledge or expertise; additionally, purposive sampling provides robust and reliable data despite its intentional bias. The major assumption of this thesis is that qualitative, in-depth key information interviews with community leaders and professionals who have first-hand knowledge about food security issues can provide meaningful insight into the nature of food security in the municipal context, while highlighting tools and approaches that municipalities have utilized. Given that purposive sampling techniques are a supported method for key informant interviews, and given that the targets of this investigation are planners and politicians who help to shape public policy that can impact food security, this research approach is assumed to be effective. Additionally, all participants were asked the same set of main questions in structured interviews.

An objective of this study is to highlight the common themes that emerge from conversations with municipal politicians and professionals who understand how food and agricultural policies can be implemented in the municipal context. In this context, purposeful sampling is more efficient than random sampling because a random member of the community at large may not be as knowledgeable and observant as an expert in municipal policy and practice (Tongco, 2007). To minimize researcher bias, experts were selected and interviewed with a set of questions asked in the same manner and sequence.

1.5 – Research Contributions

It could be argued that the current methods of food production reflect a market failure. A ‘market failure’ describes a situation where the market fails to allocate resources in a socially desirable nature so as to maximize overall economic wellbeing

(Blais, 2008). This can lead to market distortions where unpaid externalities create artificially cheap commodities that, like urban sprawl, change consumer habits, which further exacerbates the issue (Blais, 2008).

Within the case study communities, advocacy groups have alleged that there is a growing housing crisis (Affordable BC, 2019). Surging real estate prices associated with speculative realty (Sorensen, 2016) put agricultural land at risk. Investors and speculators take prime agricultural land out of production and out of the hands of farmers (Tomlinson, 2017). Overvalued land costs contribute to pre-existing market distortions that further impede the economic feasibility of local food production. This creates an overreliance on foreign food production and leaves communities less resilient to change as local farmland is taken out of production and developed. Given that the real estate market has an impact on the cost of local food production lands, there is an apparent need to explore the concept of food security within this local context. This impact is present in the case study communities, and the provincial government recently passed legislation to protect designated agricultural reserve land by limiting the size of new housing that can be built on it (Lehn, 2018).

This research will help to identify and highlight the production of food as an important element of community resiliency, and discuss how it fits in the municipal realm of responsibility. The key contribution of this research is to identify how food security is conceptualized, and which methods are used to address food security objectives within the municipal context in the case study communities. While the findings of this research is inherently limited to the study area, this method can be applied to other communities across British Columbia and in other areas of Canada. While the geography of the case

study region is unique, key topics of urban-rural interrelationships, housing pressures on agricultural land, and dependence on global markets are not.

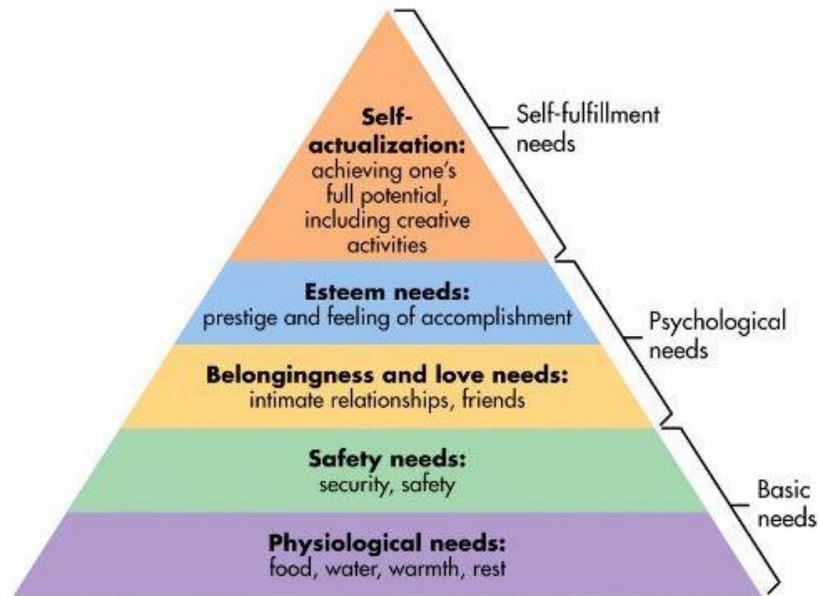


Figure 1 – Maslow’s Hierarchy of Needs (McLeod, 2007)

Planners have an obligation to uphold the public interest (Canadian Institute of Planners, 2015), which can be contextualized in Maslow’s (1943) Hierarchy of Needs (Figure 1), which emphasizes physiological needs like food and shelter as basic human needs. While Maslow’s Hierarchy of Needs can help inform what qualifies as being part of the public interest, the progress towards these goals from a municipal perspective is not easily gauged in terms of efficiency indicators, and could be indicative of larger systemic issues (Rittel and Webber, 1973). It is important to note that Maslow’s Theory of Human Motivation has been criticized in recent years, and the claim of universality of the model is being critiqued as being inapplicable for some communities. Mawere (2016) concluded that this hierarchy does not represent a universal motivational theory, and

that it must be critiqued in a non-Western context. Since planning professionals have a professional code of conduct that underpins the importance of respecting the diversity, needs, values and aspirations of the public, and encourages the discussion of these matters (PIBC, 2012), Maslow's hierarchy can only serve as one perspective, and planners must engage with the public to determine what other factors and perspectives contribute to the public interest.

The analysis of the diversity of food security approaches and concepts at the local government level, including tools, actions, and conceptualization, is required to identify the types of tools and policies that local governments are using to address food security in the rural, urban, and suburban contexts. This will also add to the toolkit (*Local Food Production Tools and Roles – Appendix 5*) introduced by Buchan et al. (2015). The principle goal of Buchan et al.'s 2015 article was to establish food system planning as a planning issue for local governments to address. Their toolkit provides a brief list of regulatory tools that have been documented in North Saanich, Vancouver, Kelowna, and Campbell River. My thesis will also contribute to the growing list of extensive food policy tools, including those identified for the urban context by Mansfield and Mendes (2013), which lacked a distinction between urban, suburban, and rural municipal food strategies. By providing policy makers with a better understanding of the tools that can be utilized in their communities, they will be empowered to take action at the local level and facilitate the creation of resilient sustainable food systems.

This research project will attempt to broaden the definition of food security by highlighting the various themes that planners and politicians associate with the term. Additionally, it will help provide policy makers with a better understanding of the tools

that can be utilized to address food security and enhance sustainability in the rural, suburban, and urban contexts. Finally, this research will provide insights from specific case studies in British Columbia, Canada, and provide the framework for potential policy changes at local, regional, and provincial levels. In summary, my research should help to:

- a) Advance the academic discussion surrounding food security by:
 - identifying the types of tools and actions that local governments are using to address food security.
 - contextualizing food security at the municipal level to aid in future research.
- b) Provide a potential toolkit for local governments by:
 - identifying the types of tools urban, rural, and suburban governments are using.
 - Highlighting the political and staff perspectives.
- c) Establish a rationale for provincial policy changes by:
 - Identifying and describing potential tools and actions that municipal staff and politicians identify.

Chapter 2: Literature Review

2.1 – Defining Food Security

Prior to discussing tools that can achieve food security, the ideas of what constitutes a food secure community must be identified. While the concept of food security has been defined in various academic and government documents, the intent of this research is to gauge how food security is conceptualized at the local level; therefore, one of the main themes that I have discussed with research participants is how they define food security.

Existing literature on food security tends to focus on the availability and accessibility of food, but does not always consider where this food comes from. This is important because the processes involved in food production and distribution have environmental and social impacts. For example, Weber and Matthews (2008) note that buying local can help to reduce the greenhouse gas emissions associated with industrial food production and long-distance distribution, which they refer to as food miles. Other practitioners have cautioned that food security is more nuanced, and food systems themselves need to be evaluated on their various benefits and impacts (Born and Purcell, 2006). In addition, if communities are entirely dependent on specific markets for food, there may be resiliency implications should those markets be disrupted through natural or man-made disasters.

Since many urbanized communities have outsourced their food production so that farmland can be transformed into residential, commercial, or industrial land to support the growing populations, mere accessibility can create a false sense of security because the foreign markets that supply their food are subject to disturbances.

If these suppliers become unavailable, urban communities may have to fall back on their local food production capacity. In this regard, many Canadian communities are not food secure because they do not currently have the capacity to meet local needs with local production.

Despite the emergence of local food research, there is no consistent definition of “Local Food”. This has been recognized in both the academic and grey literature (Chait, 2019; Eriksen, 2013), and has resulted in a diverse landscape of meaning. Since local isn’t officially defined or monitored, it could be conceptualized as a factor of the distance it takes to get goods to market, or based on provincial, city, regional, or national boundaries (Chait, 2019). ‘Local’ is inherently idiosyncratic and not universal; therefore, researchers have notes that considerable research on local food is still needed. For this research, ‘local food’ is conceived as food produced or prepared within the case study communities which provides a regional perspective on food production.

As defined by the World Health Organization, food security “exists when all people at all times have access to sufficient, safe and nutritious food so that they can maintain a healthy and active lifestyle while meeting their food preferences and dietary needs” (FAO, 2019). This is traditionally founded on four pillars: the availability of food, the accessibility of food (income, infrastructure, etc.), the utilization of food (knowledge, preparation, health, etc.), and the stability of food (FAO, 2019). Despite this encompassing definition, food security remains a complex sustainable development issue. Sustainable development depends on the ability of existing populations to meet their needs without compromising the needs of future generations, and can only be pursued if a population’s size and growth are in harmony with the productive potential of the

dynamic ecosystems in which they are located (United Nations, 1987). While Canadian officials have created an *Action Plan for Food Security* and recognize that implies sufficient food supplies as part of a sustainable food system, it does not provide tools or recommendations at the local level (Agri-Food Canada, 2015).

Prime agricultural land in Canada is under development pressure due to both population growth and the global marketplace, which has offset the limits of the local carrying capacity. Some academics suggest that with this increase in population size, the focus on local food production systems is an unsustainable practice, and argue for an increased dependence on foreign markets (Desrochers and Shimizu, 2013). However, foreign markets are not always reliable. Global markets are subject to fluctuations and disturbances, as well as collapses (von Braun, 2008). When these collapses and/or disturbances occur, communities are at risk of being temporarily or permanently cut off from their food sources. If such an event were to happen, food insecurity would be experienced by most community residents, rather than just those who qualify as vulnerable individuals.

For example, Roberts (2008) points to the Cuban Garden Revolution to demonstrate both the risks of being over-reliant on the global market, as well as the ability to meet a population's food needs with innovative farming techniques. When the Soviet Union collapsed, Cuban communities could not depend on foreign markets to feed their citizens, and had to turn to urban agriculture (Altieri et al., 1999).

During this transition, Cuban citizens were unable to access sufficient food to facilitate healthy and active lifestyles (Roberts, 2008). In this particular example, the

government was forced to make progressive agricultural policies. If these policies and practices were in place prior to the collapse of the Soviet Union, Cuban communities may not have suffered malnutrition and starvation during the forced transition from dependence on foreign markets to urban agriculture. While an event of similar severity may be unrealistic for Canadian communities, some communities are highly dependent on select unsustainable foreign markets. Furthermore, these markets will face additional threats as the costs of production and distribution rise, and the impacts of climate change are realized.

It is apparent that in order to achieve food security, local communities must be able to meet the nutritional needs of their populations at all times. This requires enough local production capacity to meet their needs. As such, food security requires some level of food sovereignty that recognizes citizens' rights to healthy and culturally appropriate food that is produced locally and with sustainable methods (Food Security Canada, 2015). Given that disruptions to foreign food sources can impact the accessibility of food, it would appear that in order for a community to be food secure, it should have sufficient access to farmland so that it can produce enough food to feed its population. In order to fully operationalize the concept of food security, food sovereignty must be considered a vital component to fulfil the "all people at all times" requirement of food security (FAO, 2019). The Canadian government recognizes that, despite plentiful food production on a global basis, global and regional food security can be affected by variations in the macroeconomic environment, regional climatic phenomena, and other interruptions such as natural disasters or civil strife (Agriculture and Agri-Food Canada, 1998).

The British Columbia Ministry of Agriculture and Lands (2006) estimates that the average person requires 0.524 hectares of farmland to meet their annual food needs based on Canada's Food Guide, which recommends 4 to 6 servings of animal products (meat and dairy) per day. It is important to note that the Canadian Food Guide has been updated since the case study interviews (Government of Canada, 2019), and less animal products are identified as being part of a recommended diet. This may change the 0.52 hectare estimate by the British Columbia Ministry of Agriculture and Lands, however, and up-to-date statistic has not been published by the ministry. The province of British Columbia established an Agricultural Land Reserve (ALR), a provincial zoning that identifies and protects agricultural land. Some 4.7 million hectares of 'agriculturally suitable' land is protected in British Columbia (ALC, 2015), which implies that the province is only able to produce 46% of its food needs through conventional farming on provincially designated agricultural land.

However, not all land within the ALR is actively farmed, or able to be farmed without significant land alteration. For instance, further north of the case study area, the city of Campbell River boasts 5,000 hectares of ALR-designated lands within its jurisdiction (Campbell River, 2011); however, only 18.7 hectares are actively farmed and less than 0.4% of the ALR land is cleared. The remaining ALR land is forested or within sensitive ecosystems, including 146.8 hectares of wetlands (City of Campbell River, 2011). Based on the provincial standard, nearly 16,500 hectares of agricultural land is required, but only 18.7 hectares are actively farmed when farms both within and outside of the ALR are accounted for. While these calculations are imperfect because they do not account for foraging, hunting, aquaculture, or backyard gardening, it provides a snapshot

of the agricultural capacity of cities and regions. It is evident that merely setting aside large tracts of agricultural land doesn't contribute to local food security, and additional tools are required at the local level to enhance community resiliency. To relate this to the case study area, the City of Colwood has several large tracts of provincially designated agricultural land; however, these lands are not being used for any sort of farming. Rather, they exist as public parks, golf courses, and oceanfront property that could be desirable for future development, or for preservation as community amenities. While the Agricultural Land Commission (ALC) has a mandate to protect ALR lands and regulate non-farm uses, it does not force these lands into agricultural production.

2.2 – Sustainability and Community Resilience

It appears that local food security requires some level of local production of food to account for market shortfalls, and this implies some level of food self-sufficiency. Local food production can be hindered or fostered by municipal actions as municipal authorities regulate land use; therefore, both existing municipal actions and potential municipal actions will be main themes that I will discuss with research participants. Since municipal governments are also bound by provincial legislation, I will explore potential provincial actions with research participants as a main theme.

It is evident that food systems and agricultural production have shaped the growth of past human settlements and civilizations. While the advances to agricultural technologies and delocalization of trade and markets have enabled communities to grow beyond their local production capacity (Pothukuchi and Kaufman, 1999), the consequences for being too reliant on trade can have devastating impacts on societies. For example, the Roman civilization enabled trade throughout the empire, but when the

empire collapsed, populations shrank and became dependent on local production technologies. Wright (2004) refers to this as a 'progress trap' – a condition in which societies become overdependent on a singular resource (or method of obtaining it), which inevitably prevents further progress and can lead to collapse (Wright, 2004).

Wright (2004) views world history as a succession of progress traps, and implies that with sufficient political will, contemporary societies can learn from past mistakes and avoid progress traps in the future. Wright (2004) suggests that civilization is an experiment, and that while humankind's inability to foresee long-range consequences has plagued historic civilizations, our collective knowledge puts us in a unique position to make long-ranged decisions based on our understanding of where these past societies failed.

The preservation of local agricultural land is essential for the stability of societies, as it provides communities with the land base to produce locally, and may reduce their dependency on foreign markets as economic conditions change. Global populations are expected to reach nine billion by the year 2050, requiring significant agricultural intensification to meet the needs of the global population (Branca et al., 2013). Currently, more than one billion people are undernourished (Neff et al., 2011). Sustainable agricultural production methods will be essential for ensuring the food security of the global population (Branca et al., 2013). Despite this growing need, increased urbanization compromises viable agricultural land to the point where land speculation and investment in North America's urban fringe has resulted in large tracts of agricultural land being owned by individuals and/or corporations with non-agricultural interests (Bunce, 1985). This is part of the reason greenbelts and other forms of provincial

agricultural zoning are not enough to ensure ongoing food security. They don't guarantee farming; they only protect land from development.

Despite federal farmland preservation policies like Toronto's Greenbelt and British Columbia's Agricultural Land Reserve, investment in agriculture has declined and the cost of farmland has risen, which has prevented new farmers from entering the market while allowing prime agricultural land to go unused (Bunce, 1985). Interestingly, the forerunners of modern planners predicted these issues. Ebenezer Howard published his vision of the Garden City utopia in 1902. Howard's ideal city capped population growth within the local carrying capacity, tied cities to agricultural land, and attempted to prevent land speculation (Agriculture & Urbanism, 2010). Since Howard failed to account for the political realities that govern decision-making in the continental USA, the Garden City model was never fully realized. Ironically, the garden city model was used to justify the automobile-dependent suburbs, which has led to the creation of food deserts and exacerbated the impacts of food insecurity.

The ability for a community to meet its own food needs contributes to its overall resiliency. Community resiliency is defined as the ability of a community to deal with adversity/disruptions and gain strength through it (Kulig et al., 2008). The concept of community resiliency is considered a component of long-term sustainability (Brundtland, 1987). While there are apparent differences between the needs of rural, urban, and suburban communities, food is a basic human need that contributes to the resiliency and health of residents despite their location (Kulig et al., 2008).

Potential disturbances to the food system include urbanization, food and gas prices,

market changes, droughts, and floods (Gregory et al., 2005). As such, climate change poses a significant threat to the global food system, and since agriculture is a major contributor of greenhouse gases, it is also feeding into the climate change issue (Gregory et al., 2005). The impacts of climate change have the potential to negatively impact food systems, while adding additional stresses to the market systems that communities rely on for food in lieu of local production (Gregory et al., 2005).

Dependence on foreign markets for food is clearly observable in British Columbia, where 70% of its imported fruits and vegetables come from California, which is experiencing severe droughts that are not expected to dissipate (CBC News, 2014). Since the growing population in British Columbia has been reliant on this foreign market, it will need to explore new markets, which are also vulnerable to climate change. Alternatively, the Province can attempt to revitalize local markets in an effort to adapt. Much of the prime agricultural land is owned by land speculators who inflate the cost of farmland in anticipation of urban development. While new farmers are interested in working in the industry, they are often prevented from doing so based on the high cost of agricultural land. As a result, some have turned to innovative agricultural practices, but may run afoul of city bylaws that do not allow agricultural practices in city limits.

Food insecurity is typically measured at the individual and household level, factoring dimensions like quantity, quality, psychological acceptability, and social acceptability (Radimer, 2002). While significant strides have been made towards reducing the factors that lead to food insecurity, individual food security (particularly for children) is currently an area of concern (Radimer, 2002). While this research is important and these vulnerable populations must be considered, since the predominant

focus has been on vulnerable populations, the typical citizen appears to associate food security with economic vulnerability, rather than a condition that exists when all people have access to healthy food at all times. As such, they may fail to recognize their own food insecurity, and the inadequacies of their existing food sources.

2.3 – Public Health and Market Volatility

The link between food security and public health is not always evident; but it has become abundantly clear that many British Columbian's do not have sufficient resources to buy healthy food on a consistent basis, and that these barriers have broad impacts (Dieticians of Canada, 2011). Many vulnerable individuals rely on food banks to meet their dietary needs, however, food banks were introduced in 1989 as a temporary measure and often do not have the capacity to supply impoverished residents with a healthy, balanced diet (Dieticians of Canada, 2011). It is important to note that food banks are not necessarily tied to municipal boundaries and may serve regional populations as opposed to local ones.

Recent work by Wegener et al. (2012) notes that, in spite of the limited insight into how planning and policy decisions impact food systems, government actors have an important role to play in creating policies that support public health, and facilitate access to healthy food. Wegener et al. also note that there have been few studies that explore the ways in which food system ideas reach the political agenda.

Some of the potential solutions that have been cited include allowing food production in urban areas, increasing public awareness on food security, and participating in edible landscaping (Dieticians of Canada, 2011). The Dieticians of Canada

(2010) maintain that focusing on local food production will reduce British Columbia's dependence on imported food and improve access to healthy food in neighbourhoods where it is currently limited. In fact, the nutritional value of these foods will be enhanced because they can be harvested at peak ripeness (Dieticians of Canada, 2010).

British Columbia's Provincial Health Authority has recognized food security as a core component of public health. The Ministry of Health notes that food security programs are complex and can be difficult to directly link with health outcomes (Ministry of Health, 2014). The Ministry maintains that food security, particularly in the context of a sustainable local food system, is the foundation for healthy eating (Ministry of Health, 2014). The academic literature has predominantly focused on vulnerable populations, such as single-parent families, homeless and low-income individuals, who experience food insecurity despite work being done at the community level (Ministry of Health, 2014). Critics of the globalized food system suggest that it is designed to maximize profits as opposed to delivering optimal health (Stuckler and Nestle, 2012). In addition, the existing food system in Canada fails to provide safe and nutritious food for the entire population, with one in six families struggling to put food on the table (VitalSigns, 2013).

Access to healthy foods can facilitate healthier diets and reduce the rates of diet-related chronic diseases (Ollberding et al., 2012). The consumption of unhealthy food has led to an epidemic of obesity, which puts significant stress on the provincial healthcare system (Dieticians of Canada, 2011). It is estimated that obesity alone costs the Province of British Columbia an estimated \$730-\$830 million a year (Community Nutritionists Council of BC, 2004). One of the strategies being promoted to combat this epidemic is the re-localization of food systems to ensure a stable supply of healthy, local food (Dieticians

of Canada, 2011). For perspective, 100 years ago, 22% of the provincial population lived on farms, and now only 1.5% are farmers (MacNair, 2004). In fact, British Columbia is now one of the most urbanized provinces in all of Canada (CBC, 2007), but global agricultural yields are projected to decrease by as much as 16% as a result of climate change, and many Canadian farmers are approaching retirement and young farmers are not replacing them (VitalSigns, 2013).

To address the issues of accessibility, most researchers have studied low-income individuals and poor neighbourhoods. In particular, researchers have focused on neighbourhoods that do not have sufficient access to grocery stores, farmer's markets, or other producers of healthy foods, which they deem "food deserts" (Wrigley, 2002). This exacerbates the issues faced by low-income individuals who are unable to afford healthy food, as they experience less food choice offerings (Wrigley, 2002). In food deserts, individuals are only able to access foods if they have access to private transport or sufficient funds to pay for public transit if it is available (Wrigley, 2002).

Research has linked food deserts to increasing health inequalities that are tied to under-nutrition and diet (Wrigley, 2002). Wrigley (2002) notes that, while planners have put an emphasis on developing local solutions to deal with these issues, this mode of reasoning is still tied to the global market. While long-distance food trade has helped bolster the growth of local communities, the loss of local resilience brings a range of unseen costs to the environment and leaves many citizens undernourished (Halweil, 2002). Global markets that supply food are volatile by nature, and shocks or crises can result in extreme volatility that leads to malnutrition (Prakash, 2011).

To establish community resiliency in the face of climate change, poverty, and energy costs, local communities must develop the capacity to assess their food issues and adapt through innovation. While the industrial globalized food production model produces enough food to feed the global population, it is not currently an ecologically sustainable or socially just production model (Altieri and Nicholls, 2012). This model was launched under the assumption that abundant water and cheap energy would fuel modern agriculture and that the climate would be relatively stable (Altieri and Nicholls, 2012). Despite the current reliance on the global production model, localized sustainable agricultural production can meet the needs of local populations if they are empowered via resources and policy initiatives (Altieri and Nicholls, 2012). Sustainable food systems are intimately tied to community resiliency; however, overreliance on local sources is also criticized for its lack of resiliency as such systems are susceptible to risks such as climate, biological pests, and man-made disruptions (Desrochers and Shimizu, 2013). An appropriate balance must be identified so that communities can take advantage of international markets while retaining the capacity to produce food locally.

2.4 - Municipal Food Policy

While food security is typically considered low on the planning agenda, there is a professional and political rationale for pursuing it (Pothukuchi and Kaufman, 2000). In an effort to understand why this is the case, one of the main themes that I have discussed with research participants is their corporate culture (i.e., where there is support and resistance to food security objectives).

Health practitioners have claimed that the greatest contribution to the health of the nation over the past 150 years was made by local governments, but is underappreciated

(PlanH, 2010). In fact, the Municipality Act (1872), the first local government legislation in British Columbia, listed the preservation of public health as one of the 31 areas of local government responsibility (PlanH, 2010). These public health efforts formed the foundation of local government services that evolved into community planning, building inspection, public works, and more (PlanH, 2010). These practitioners recognize that food security policies address issues of public health by facilitating healthy lifestyles, providing healthy food options, and reducing pollution (PlanH, 2010).

Despite rapid urbanization that global markets have been able to facilitate, hundreds of millions of urban dwellers face under-nutrition (Satterthwaite et al., 2010). Interestingly, hundreds of millions of urban dwellers also rely on urban agriculture for part of this food consumption or income (Satterthwaite et al., 2010). Greenbelts and similar provincial agricultural zoning have been promoted as a solution for preserving farmland, but are often seen as unsuccessful, and many citizens who own land in these areas hold negative opinions on the development restrictions (Yokohari et al., 2000). In addition to the push for food policy by politicians and staff, there has also been a grassroots push from community members and food justice activists to raise food-related concerns within municipal government (Wekerle, 2004). Given the involvement of special interest groups, and that some of the services they provide may be beyond the scope of municipal government, one of the main themes that I have discussed with research participants is the role for municipal advocacy and education.

Despite the increasing recognition of food security and food systems policy as an essential component of public health and responsibility of local government, no specific tools have been created for municipalities to utilize; in fact, many communities still have

barriers to innovative agricultural practices. For instance, farming is typically seen as a rural profession in Canada, thus many farming practices were not included in the permitted uses of urban lands (REFBC, 2013). While farming in cities has always existed, the scale and legal status of these practices as business models are not always recognized or supported by local government (REFBC, 2013). Wegener et al. (2012) notes that little attention has been paid to understanding the tools local governments can use to develop local food systems. Local food systems represent an opportunity to address sustainability given that there are multiple health, environmental, and local economic benefits that can be achieved through strong and diverse food systems (Wegener et al., 2012). Since economic benefits are associated with food systems, one of the main themes that I have discussed with research participants is the economic aspects of food security.

de la Salle and Holland's *Agricultural Urbanism* (2010) identifies tools that can help to bolster local food systems in the urban environment. While the primary focus of agricultural urbanism is to promote the local food system through urban design, de la Salle and Holland also identify tools such as community gardens, edible landscaping, community events, business licensing, demonstration gardens, and proactive policies to manage stormwater management and market gardens (de la Salle and Holland, 2010). While this work provides a great starting point for municipal government, it is focused on an urban context, and it is possible that urban solutions to food insecurity will vary from suburban or rural solutions. Buchan et al. (2015) expand on this work by identifying local food production tools. They recognize that local governments can provide resources, undertake projects and programs, advocate and facilitate, as well as regulate and establish policy (Buchan et al., 2015). Under the "regulate and establish policy"

category, tools like farmland preservation, progressive agricultural zoning, and food procurement policies are listed (Buchan et al., 2015). While this provides a robust list of tools and actions local government can take, the authors do not give examples of where local governments use specific tools or describe the conditions where they are effective. Rather, the authors point to examples where other local governments have utilized these tools, such as the emergence of ‘urban hen’ bylaws (Buchan et al., 2015). They conclude that these tools, while extensive, are not exhaustive, and that the list will expand and evolve over time (Buchan et al., 2015).

The intention of this research is to build upon these previous works by highlighting the specific tools the case study communities have used, and assess the ways that local authorities conceptualize food security, which may serve to help identify their justification for the actions they support. Without this base understanding of why local governments address food security and how they address it, they may take on redundant work that has already been carried out in other municipalities in order to address the concerns of local residents and power holders. Urban chicken bylaws are a great example of this because they are often controversial when they are proposed, despite having consistently been demonstrated as a low-impact activity that requires little to no municipal resources to maintain/administer.

2.5 – Summary of Main Themes

As identified in the above literature review, the main deductive themes that will be utilized to explore the diversity of food security approaches and concepts in the municipal context are:

1. Food Security (i.e., how is food security defined?)
2. Municipal Actions (i.e., what are municipalities doing to address food security issues?)
3. Potential Municipal Actions (i.e., what do municipalities identify as potential steps to address food security issues?)
4. Municipal Advocacy and Education (i.e., are there opportunities for municipalities to partner with other organizations or engage in education?)
5. Potential Provincial Actions (i.e., what sort of actions do municipalities identify as a priority for higher levels of government?)
6. Economic Aspects (i.e., are there economic benefits associated with local food systems?)
7. Corporate Culture (i.e., where do the barriers and challenges lie?)

Chapter 3: Methods

3.1 – Research Goals

One of the research goals is to further operationalize the concept of food security by engaging with community leaders and professionals who can identify how they conceptualize food security and what tools they believe are effective. This will highlight common themes, as well as the differences between rural, urban, and suburban communities. Since this research is exploratory in nature, a qualitative research approach that utilizes key informant interviews and thematic analysis was selected for this study. As food security is a complex subject that involves a range of stakeholders with various concerns and perceptions, a qualitative approach offers the potential for richness and depth of understanding that is unlikely to arise from a quantitative approach (Skinner et al., 2000). This qualitative approach allows for purposive sampling strategies that allow the researcher to consider and identify the unique characteristics of the research subjects and settings (Devers and Frankel, 2000), such as the community leaders and professionals and their urban, rural, or suburban context in the case study area. Since the intent of this research is to uncover the various methods and tools used at the local level, purposive sampling enables the researcher to identify tools and themes that may not be readily apparent in the existing literature.

3.2 – Research Design

As there are 13 municipalities within the study area, my objective was to interview a planner and a politician (a minimum of two key informants) from each of the case study communities. However, since these professionals were not compensated for their time,

some of the individuals contacted did not respond to my interview requests, or declined the invitation. Despite these setbacks, I was able to conduct 20 semi-structured interviews between January 2016 and August 2016 with 11 politicians and 9 local planning professionals, all of whom work for municipal governments within the study area. Five of the interviews were completed in-person, and the remaining 15 were conducted over the phone. The reason for the disparity between in-person and telephone interviews is due to the fact that, in the majority of cases, telephone interviews best fit the schedules of the interviewees. As explained by Yin (2018), one of the most important sources of case study evidence is the interview, and interviews can provide important insights in identifying and reflecting the key informants perspectives.

As explained by Sandelowski (1995), purposeful small sample size can provide information-rich case studies. An ongoing struggle for qualitative research is that qualitative sample sizes can be too small to support broader claims of having achieved generalizable results, or too large to facilitate a deep, case-oriented analysis (ibid). Determining an adequate sample size in qualitative research is ultimately a matter of judgement in evaluating the quality of information collected against how it will be used, and that in some cases, a size of 10 may be sufficient for certain kinds of homogeneous or critical case sampling, provided that researchers understand that it is too small from which to develop a theory (ibid). The purposeful sampling of this study provides an information-rich insight into the case study communities, but is not sufficient to provide generalizations that can be applied to other populations. Given that the key informants have direct personal knowledge and/or experience as to how local governments effect local food security, they can be considered good sources of information. This sampling

approach reflects the selective or criterion sampling described by Sandelowski (1995), in which sampling decisions are made going into a study on reasonable grounds, rather than on analytic grounds after some data have already been collected.

To discover and highlight the key concepts/themes linked to food security in the case study communities, interviews were open-ended to avoid the pitfalls of a highly structured study. According to Skinner et al. (2000), highly structured studies may settle on an explanation too early in the process, and researchers must be diligent to avoid this problem. Due to financial limitations, and the time constraints of the research participants, audio-recording was utilized in both in-person and telephone interviews, rather than videotapes. As described by McCracken (1988), qualitative methods are a powerful tool to discover how a respondent sees the world, but special care must be taken by the researcher to maintain a balance of control while maintaining as unobtrusive an approach as possible (McCracken, 1988). Interviews may be open-ended and assume a conversational manner provided that a protocol is followed (Yin, 2018).

To meet the objective of this thesis, the following questions were posed (Appendix 2):

- How do you understand the term “food security” in the municipal context?
- Has your municipality created policies that address or touch on food security?
- With or without policy, has your municipality introduced any tools/methods to address food security issues?
- Why address food security issues? Is there a legislative mandate or rationale?
- What would you recommend to other cities looking to create food security policies?

Initially, a questionnaire/survey (Appendix 4) was provided to key informants, but due to time constraints, many participants were unwilling or unable to commit to both the questionnaire and the interview. I had also planned a review of relevant municipal policies and plans (i.e., official community plans) as part of this investigation, but some municipalities stated that the applicable policies and plans needed updates, and would not paint an accurate picture of the current corporate direction. Therefore, the focus of investigation shifted to the key informant interviews. According to Yin (2018), a major strength of case study data is that they can make use of multiple sources of evidence and can provide an in-depth study of a phenomenon in a real-world context. The original intent of this study was to conduct mixed methods research with surveys, key informant interviews, document analysis, and thematic analysis; however, due to the outdated policies and failure of the survey I shifted my approach to pure thematic analysis of the key informant interviews.

Interviews were transcribed and analyzed in an attempt to identify which responses connected to the seven broad themes derived during the literature review to help focus the analysis. In hindsight, the interview questions could have been designed to explicitly match the seven broad themes; nevertheless, the data-rich sub-themes are still valuable because they provide insight into the differences between urban, rural, and suburban contexts.

After transcription of the interviews, an analysis was completed to identify the links between the seven broad themes and the interview responses, followed by a second analysis to identify patterns within the interview responses associated with each of the seven main broad themes. The objective of this approach was to focus the analysis of the

sub-themes identified in the data analysis by relating them to the main themes identified in the literature review. According to Miles and Huberman (1994), it is important to document the frequency of responses in order to keep the investigator honest and protected from bias. Furthermore, identifying the frequency of themes can help to rapidly break down large batches of data and allow researchers to identify their general drift. In this circumstance, identifying the frequency helps to contextualize the findings.

3.3 – Thematic Analysis

This research utilizes the expertise and experiences of both planning professionals and politicians who directly deal with land use decisions that have impacts on food security issues. Pinpointing and examining patterns/themes within their responses provides an opportunity to analyze the qualitative data that arises from the key informant interviews.

The key informants from the various municipalities have direct experience with food security policies and land use decisions that have an impact on agriculture. For example, planners and politicians associated with the City of Victoria were in the process of drafting a “*Growing in the City*” program (officially adopted in 2017), which focused on identifying options for urban agriculture and removing zoning barriers to citizens. In contrast, the District of North Saanich adopted a “*Whole Community Agricultural Strategy*” in 2011, and recently approved a commercial development that resulted in an 83-acre land transfer to the District to be used and managed as public agricultural land (Heywood, 2017).

Thematic analysis is a widely-used qualitative research technique, and is one of a cluster of methods that focus on identifying patterned meanings across datasets (University of Auckland, 2016). Schutz (1967) recommends that investigators formulate theoretical constructs, known as ideal types, in accordance with the type of questions being asked, so that the phenomenon being examined can be interpreted and described layer by layer. Thematic analysis in this context is to search for themes that emerge from the data, which then become categories for analysis (Schutz, 1967). Themes can be considered manifestations of expressions in data, which can originate directly from the data and from the investigator's prior theoretical understanding of the phenomenon under study (Ryan and Bernard, 2003).

Many other methods of analysis are essentially thematic at their core, but claim to be something else, such as discourse analysis, or even content analysis (Braun and Clarke, 2006). There are three main methods of content analysis: Inductive Conventional Analysis, which derives coding categories from the content of data; the Directed Deductive Approach, which starts with theory or research to guide the initial codes; and Inductive Summative Analysis, which involves the counting of keywords or comparable content (Hsieh and Shannon, 2005). In each case the goal is the same, to analyze patterns in text or interviews. With regards to thematic analysis, Fereday and Muir-Cochrane (2006) suggest a fourth hybrid approach of inductive and deductive thematic analysis that integrates data-driven codes with theory-driven ones based on the tenets of social phenomenology. This can be applied to both interview transcripts and organizational documents to identify overarching themes (Fereday and Muir-Cochrane, 2006).

One of the benefits of thematic analysis is its flexibility. However, there is a possibility that a researcher's own theoretical positions and values can skew findings (Braun and Clarke, 2006). For example, Braun and Clarke (2006) note that insufficient attention is often given to reporting the process and detail of thematic analysis, which leads to researchers identifying emerging themes from the data without acknowledging the active role the researcher plays in the identification of patterns/themes. They conclude that it is important for researchers to acknowledge the active role they play in selecting themes of interest, rather than subscribing to the naive realist view in which researchers simply give voice to the data (Braun and Clarke, 2006). In this research, the combination of purposive sampling and the open-ended interview format enabled the participants to express their views on the subject of food security. I acknowledge that I intentionally focused the interview questions with the purpose of uncovering how food security is treated at the local government level. However, my research was not obtrusive, as participants were able to express their own views in response to my questions and interview prompts.

For the purposes of this research, thematic analysis was utilized during the initial literature review to identify main themes for investigation. Once the interviews with key informants were completed, the responses were sorted based on their relation to these main themes. Since the purpose of this research is exploratory, and the intent for these sub-themes was to be data driven, it was important to establish the sub-themes after the interviews had been conducted so that the results were shaped by the key informants' responses. These groups of data were separated and further analyzed for patterns in interviewee responses. Similar responses were grouped into sub-themes. These

sub-themes were further grouped based on the qualities of the key informant associated with them, such as whether the interviewee was a staff member or a politician from an urban, rural, or suburban municipality. This allows for the overarching main and sub-themes to be analyzed in the urban, rural, and suburban contexts.

As described by Bazeley (2009), once data is gathered, reading and interpretation are the starting points for meaningful analysis. In contrast, a heavy focus on themes prior to the interviews can affect the quality of the findings by prompting superficial answers. To mitigate this risk, the broad themes reflected the research objectives of this exploratory inquiry, rather than anticipated results. This approach enabled the sub-themes to be appropriately linked to broader themes, and be based on the key informant responses. Responses that corresponded to the focus questions were categorized based on the broad themes, and then further separated or grouped based on their common characteristics. By grouping sub-themes that shared common characteristics, the frequency of responses can be identified which can be used to indicate how the sub-themes vary between different groups (Bazeley, 2009). This provides an opportunity to move beyond simple description of themes, and show the meaningful associations between different groups (Bazeley, 2009) such as urban, rural, suburban, politician, and staff key informants in this research.

As explained by Thomas (2006), the objective of inductive qualitative analysis is to develop categories that summarize raw data and convey key themes. Categories resulting from the coding process are the core of inductive analysis (Thomas, 2006). The general inductive approach seeks to identify the core themes/meanings from the data through the analysis, and describe the most important themes through the

presentation of findings. Furthermore, this approach groups themes or categories based on their relevance to the research objectives (Thomas, 2006). Thomas (2006) describes a refinement process whereby researchers undertake an initial reading of the text, highlight specific segments related to the research objectives, group these segments to create thematic categories, and then reduce overlap/redundancy among these categories before presenting them as themes. Upper level or more general categories are typically based on the research aims/objectives, while the lower level specific categories are derived from multiple readings of the raw data (Thomas, 2006).

My approach mirrored the refinement process described by Thomas (2006). Establishing broad themes allowed for a targeted approach with respect to the lower level specific categories (sub-themes), which were identified and grouped after multiple readings of the raw data. This approach focused the research/analysis based on the research objectives, and ensured that the inductive sub-themes were based on the commonalities between the key informants' responses. Although this approach is not as strong as others in the area of theory or model development, it does provide a simple, straight-forward approach for deriving findings linked to focused evaluation questions, and is considered useful for qualitative data analysis (Thomas, 2006). Since the goal of this research is exploratory in nature, a general inductive analysis is appropriate.

3.4 – Method Rationale

Braun and Clarke (2006) note that the framework and methods in inquiry must match what the researcher wants to know, and that the researcher must acknowledge these decisions of analysis, and recognize them as decisions. I utilized Fereday and Muir-Cochrane's (2006) hybrid approach of inductive and deductive thematic analysis

that integrates data-driven codes with theory-driven ones. This allowed me to investigate my research questions as deductive themes in key informant responses, while allowing for inductive data-driven themes to emerge from the interviews. The deductive broad themes are the key categories under which the inductive sub-themes are grouped.

The focus of this fieldwork is to understand the issue of food security from the perspective of planning practitioners who have developed localized solutions within their communities. By understanding this process, I should be able to identify tools that may be replicable in comparable communities within British Columbia and across Canada. Since this research is qualitative, it provides a data-rich case study but is not generalizable to other areas. This means that further research is needed to determine if these tools are replicable in comparable municipalities that were not the subject of this specific investigation. This research is concerned with the roles played by policy makers within local governments, and the rationale that they use during the enhancement of local food security, so a mixed inductive and deductive research approach will be required.

By primarily using a qualitative approach, this research will highlight approaches that deal with food security within local governments based on the views of the professional key informants (Creswell, 2013), as well as the tools they utilize. In this sense, the research will also identify political perspectives as it includes key informants who set the priority for food security at the local level. Understanding these perspectives will provide benefit to the case study communities and other institutions throughout Canada (Creswell, 2013). In contrast, the qualitative data will speak to the need for food security, and identify the current state of the case study area.

3.5 – Qualitative Analysis

According to Creswell (2013), qualitative inquiry is used to acquire a broad explanation for behaviour and attitudes, paired with relevant variables. For instance, organizational or societal culture can be analyzed to examine stability or change as well as social organization (Creswell, 2013). Qualitative theories guide researchers by shaping which questions are asked, how data is collected and analyzed, and which issues are important to examine (Creswell, 2013).

Qualitative research focuses on the study of human social behaviours and cultures, and ultimately aims to understand social phenomena in measurable terms (Agius, 2013). Since community values, organizational values, and political agendas will inevitably shape food policy and programs/tools, it is important to understand how these social dynamics affect the planning process (Agius, 2013). While qualitative methods can appear obscure to the uninitiated, methods like interviews, interpretation of texts, and case studies can be more effective than quantitative methods (Agius, 2013). In essence, qualitative researchers ask “what,” while quantitative researchers ask “how much” (Agius, 2013).

In this study, I will be asking what tools are available to local governments. Once these tools have been established and practised, quantitative researchers may ask “how effective have these tools been?” Therefore, further quantitative research can be useful in identifying the generalizability of findings. Since the themes I will be investigating may apply to settings beyond the case study area, this qualitative research approach can be conducted in similar settings to identify the social/cultural phenomenon (Agius, 2013). My research approach has transferability, meaning that it can be conducted in other

communities to see if the results are similar. Since quantitative research can draw from larger sample populations, its results can be more generalized.

To explore food security in the municipal context, emerging themes from interviews with key informants must be identified. According to Ryan and Bernard (2003), the analysis of text involves discovering themes and sub-themes, deciding which ones are of importance to the research question, building code books (theme hierarchies), and linking themes to theoretical models.

Since the aim of this research is to uncover methods for addressing food security issues in the municipal context, deductive template-codes have been created based on the theoretical understanding of food security and food systems planning that have driven the key informant interview questions. In addition to deductive themes, inductive themes that are data driven will also be generated when observed in the interview analysis process.

Using a hybrid approach, data-driven codes, which emerge from the analysis of interviews and document analysis, will be paired with template-codes or added to the codebook in their own category. These themes will be used in the theme identification process. This will demonstrate how interpretations of the data have been achieved with quotations from the raw data that have been grouped with similar quotations based on the themes they touch upon (Rice and Ezzy, 1999).

3.6 – Interview Strategies

Local government professionals and politicians from each member municipality of the CRD were contacted based on their anticipated expertise and insider knowledge on

the subject of food security. These individuals are considered experts by virtue of their jobs as they are the individuals making land use decisions and producing public policy that can impact local food security. A goal of two key informants from each of the region's member municipalities was targeted, and snowball sampling was used to find participants. This purposive sampling provides robust and reliable data despite its intentional bias (Tongco, 2007), which has resulted in the intentional selection of participants based on their knowledge about the study area and topic, specifically, municipal staff and politicians. Some professionals were cold-called/emailed, while others were approached at food/agricultural related events. A survey (Appendix 4) was also provided to research participants, however, the majority opted out of the survey due to time constraints or because they felt that the questions posed required in-depth explanations, which would be made possible through the interview process. My goal was to interview key informants from rural, urban, and suburban jurisdictions

Policy research necessarily makes use of both people and documents (Owen, 2013). Interviews can be used to identify the nature of the tools that are being used, as well as the identity and values of the organization that utilizes them (Owen, 2013). The interview questions were drafted based on the investigation goals of this research; specifically, asking how the key respondents understand food security in the municipal context, why they address it (i.e., is there a mandate), what tools or policies they have used, and which tools or policies they recommend. This approach to semi-structured interviews has been used to gather qualitative information and is promoted as a valuable tool for working with small samples in specific situations (Gouvernement du Quebec, 2009). This semi-structured approach provides access to perceptions and opinions of

key informants to gather insight into the issues they face (ibid).

By conducting interviews, I identified how planners and politicians interpret policy, while highlighting emergent issues and values that impact decision-making. Participants were asked to explain how they understand the term 'food security,' the processes that enabled policy tools to be successfully implemented in their jurisdiction, and to speculate as to what policies should be in place for other tools to be implemented. They were asked to explain their role as a planner or politician in this process (Vandermause and Fleming, 2011). As an interviewer, I had some responsibility in framing the issue, but ultimately worked with the interviewee to determine what food security means to them, as well as the values and contexts that enabled the success of these agricultural policies so that other jurisdictions can make use of similar tools.

3.7 – Study Area

The Capital Regional District (CRD) in British Columbia was selected to serve as a case study area, which includes the municipalities of Central Saanich, Colwood, Esquimalt, Highlands, Langford, Metchosin, North Saanich, Oak Bay, Saanich, Sidney, Sooke, Victoria, and View Royal, as well as electoral areas on Salt Spring Island, the Southern Gulf Islands, and the Juan de Fuca Electoral Area.

This case study area is unique because island living provides a different perspective of finite natural resources such as farmland availability, and extreme climate or geological events can have a major impact, so emergency preparedness is a serious concern (VitalSigns, 2013). Although the farmland on Vancouver Island is capable of supplying local food needs, it is estimated that only 5-10% of food needs are met locally

(Duncan Farmers Market, 2015). Farley (1979) provides a province-wide snapshot of historical agriculture from 1911-1971 which shows that agricultural uses became more concentrated and productive over time (Appendix 1).

On the surface, using key informant interviews might appear to have the risk of a response bias because there is a relatively small sample size from a specialized position in local government. However, since I will be grounding these interviews in an analysis of existing policy, this should act as a control factor so that biases are evident. In addition, since I will be interviewing planners and politicians from 13 municipalities, one regional government, several electoral areas, and several jurisdictions in the Islands Trust, this diversity should help moderate any response bias that any single jurisdiction may provide.

3.8 – Community Background

The Capital Regional District contains 16,406 hectares of provincially designated agricultural land, which is approximately 7% of its total land area (CRD, 2008) (Figure 2). Given that the BC Ministry of Agriculture and Lands (2006) estimates that the average person requires 0.524 hectares of farmland to feed one person annually, this means that the carrying capacity of the land within the Agricultural Land Reserve can meet the needs of 31,309 individuals each year. Current population estimates place the regional population at 378,232 (CRD, 2015). Therefore, a total of 198,193 hectares (85% of the regions total land area) is needed to support the local food needs of all citizens on an exclusively local diet.

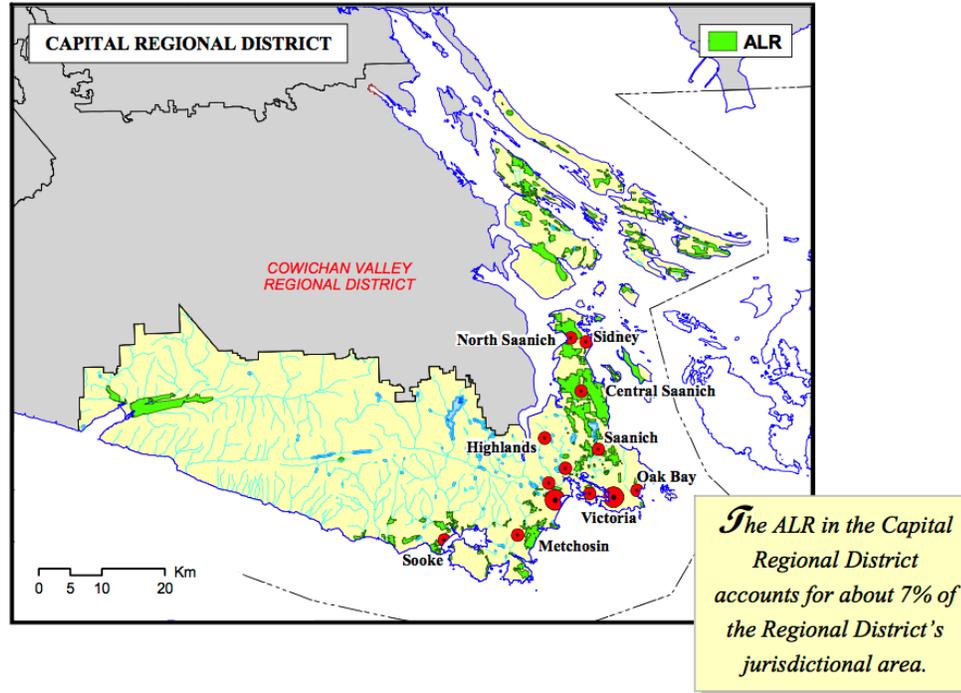


Figure 2 – ALR in the Capital Regional District (CRD, 2008)

For the purpose of this study, Victoria, Saanich, and Langford were classified as urban. North Saanich, Colwood, View Royal, and Esquimalt were classified as suburban, and the Highlands, Central Saanich, the Electoral Areas, and Metchosin were considered rural (Figure 3). This breakdown is largely based on how key informants identified their communities. While this approach is useful by allowing key informants to represent their perspectives as urban, rural or suburban, it is not without its limitations. Some of these communities contain both urban and suburban lands; for example, Saanich has an urban containment boundary which establishes urban, suburban and rural lands within the jurisdiction. It may be worth refining this approach in future research so that Urban, Rural and Suburban lands are based on population and land base rather than in the perspectives of key informants. The region has experienced a 6.5% growth from the 2011 census to the 2016 census, and is anticipating significant growth (CRD, 2017b).

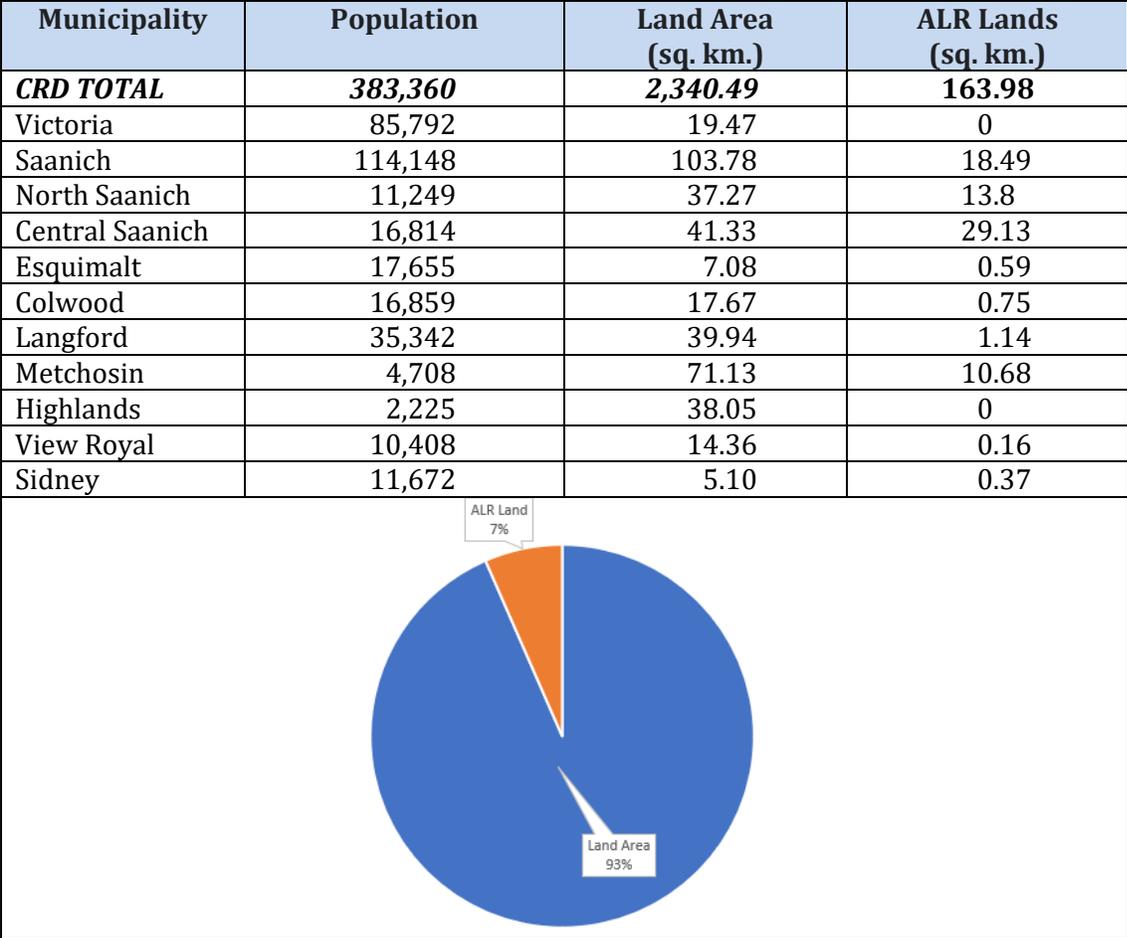


Figure 3 – Study Area Comparison (Statistics Canada, 2017)

The Capital Regional District (CRD) is expected to reach a population of 460,000 by 2036, which would exceed the local carrying capacity of all land in the CRD by 7,800 hectares. The CRD has recognized that poorly executed development projects can negatively impact farmland, and that it is imperative to accommodate future growth in a manner that meets the needs of the present without compromising the ability for future generations to meet their own needs (CRD, 2009).

Food security is identified as a high priority at the regional level, and is considered to be a topic of growing public interest (CRD, 2017a). The CRD has highlighted the

increasing average age of farmers, limited 72-hour supply of fresh food in an emergency, increasing rates of diet-related chronic diseases, and lack of local knowledge of how to grow and prepare healthy food as key areas of concern (CRD, 2018). Given the projected growth, it is likely that the price of agricultural land will continue to increase due to real estate pressures, and that without policy intervention, local diets from conventional farms will not be available for all residents. While the global market can make agricultural products available from other jurisdictions to offset the lack of local production, if these supply chains are disrupted, there may be an impact on local residents.

On average, the population in the region is older than in the rest of British Columbia, with the average age at 43.3 years and the largest group between the ages of 20 to 44 (Island Health, 2018). The greatest growth is anticipated for the 65 to 74, and 75+ age groups over the next 10 years (Island Health, 2018). The proportion of low income adults is higher than the provincial average, while the proportion of low income seniors is lower than the rest of British Columbia (Island Health, 2018).

Critics of the local food movement point out that augmenting the local carrying capacity by diversifying food sources from the global market reduces vulnerability to food insecurity by increasing options for local consumers (Desrochers and Shimizu, 2013). Furthermore, while there are social, environmental, and financial subsidy costs for cheap globalized foods (Hern, 2010), the land required to support local food needs would also lead to significant environmental costs as local ecosystems would need to be converted into production land. Conversely, the loss of local farmland, as well as loss of training, appropriate skills, investments, and education in the agricultural sector,

increases local vulnerability to global market disruptions and collapses. It would appear that overreliance on global production, as well as overreliance on local production both have the potential to create conditions of vulnerability to food insecurity.

Chapter 4: Results

4.1 – Interview Summary

My goal was to interview a politician and professional from each municipality. Some did not respond to my request for interviews, while others declined, explaining that food security was not a policy issue they were currently dealing with. By the end of the interview process, 20 participants representing urban, suburban, and rural communities had participated in key informant interviews. Seven key informants from urban municipalities, seven from suburban municipalities, and six from rural municipalities responded. While the majority felt that food security was an important issue to be addressed at the municipal level, several expressed doubt about the priority of this topic when compared to other areas of municipal responsibility.

Initially, interviewees were asked to fill out surveys (Appendix 4) that were distributed through email, and to participate in qualitative key informant interviews (Appendix 2). Interviewees were asked to fill out surveys prior to the interviews. Several offered to return them via email, but none were received. Since the interviewees did not fill out the pre-interview surveys, or return them after the interviews, the main source of data for this study is the key informant interviews. The interviews took place in 2016 between January and May. On average, these interviews typically took half an hour to complete; however, due to the semi-structured nature of the interview, some took as little as 20 minutes, while other stretched to 50 minutes in length. Two common reasons for the lack of participation in the survey were time constraints, and that the topics on the survey required an in-depth explanation that could not be provide in a survey format. The survey was not returned by the key informants.

As noted above, the interviews took place in 2016, meaning that there has been a three-year gap between the initial research and the publication of this thesis. Since 2016 there has been staff turnover in some of the jurisdictions, as well as a municipal election. It is possible that the attitudes of the planners and politicians may be different today; however, additional research would be required to determine how these perspectives and approaches change over time.

As indicated in the methodology section of this thesis, there is a possibility that my theoretical positions and values could impact the findings derived from the data (Braun and Clarke, 2006). I acknowledge that I have played the active role in the identification of patterns/themes; however, sub-themes of interest that are identified during the interviews were connected to the seven main themes derived from the literature. This avoids the flawed 'anything goes' approach to qualitative research, and allows the findings to be theoretically and methodologically sound (Braun and Clarke, 2006).

4.2 – Main and Sub-themes

Seven broad themes were identified during the literature review. Since this is exploratory research, it is also important to link sub-based themes to the data analysis so that my findings reflect the research goals. To facilitate this goal, these seven broad themes are used deductively to group the sub-themes that are identified during the data analysis.

Within these seven main theme groups, 62 sub-themes were generated during the data analysis as patterns (see Table 1). These seven themes are deductive, theory-based

themes that were generated from a theoretical understanding of the research topic to create categories and codes by which to evaluate the qualitative interview transcripts. As the interview transcripts were evaluated, sub-themes were generated within these seven main themes to further deconstruct the data.

Inductive sub-themes were generated from the interview transcripts when patterns were identified during the analysis of the interview transcripts. The identification of data-driven themes that are linked to the main themes was important, as this highlighted the patterns of interest contained in interviewee responses. Raw data was grouped with similar quotations based on the themes they touch upon (Rice and Ezzy, 1999).

Given the exploratory nature of this thesis, having the flexibility to allow themes to emerge organically through focused conversations with key informants was important in addressing the gap in existing food security literature. This inductive approach allowed unanticipated themes to emerge within the context of the seven main themes under investigation, which highlighted new approaches to addressing issues of food security.

4.3 - Theme Overview

Table 1 – Main and Sub-themes

Main Theme (Deductive)	Sub-themes (Inductive)
1. Food Security	<ul style="list-style-type: none"> • Sustainability • Food systems • Resiliency • Food sovereignty • Cultural • Affordability • Health & wellbeing

	<ul style="list-style-type: none"> • Environment
<p>2. Municipal Actions (i.e., actions that interviewees reported to have undertaken)</p>	<ul style="list-style-type: none"> • Municipal plans • Municipal strategies • Zoning • Urban containment boundaries • Demonstration farms • Animal agriculture • Community gardens • Edible landscaping • Agricultural infrastructure • Financial barriers
<p>3. Potential Municipal Actions (i.e., actions that interviewees reported could be successful)</p> <p>Note: “*” indicates that this sub-theme was also identified by other key informants as “<i>Municipal Actions</i>”</p>	<ul style="list-style-type: none"> • Additional staff expertise • Land banking • Financial incentives • Amenity contributions • *Urban containment boundaries • *Community gardens • *Edible landscaping • *Demonstration farms • New technologies • Marketing • *Animal agriculture • *Zoning • *Agricultural infrastructure • Edge planning
<p>4. Municipal Advocacy and Education</p>	<ul style="list-style-type: none"> • Land protection • Non-profit partnerships • Staff training • Facilitate discussions • Educational outreach • Municipal collaboration • Public sector collaboration • First Nations collaboration
<p>5. Potential Provincial Actions</p>	<ul style="list-style-type: none"> • Provide staff support • Farm assessment updates • Model bylaw frameworks • Strengthen the ALR • Provide financial support

	<ul style="list-style-type: none"> • Invest in agricultural infrastructure • Provide a mandate
6. Economics Aspects	<ul style="list-style-type: none"> • Globalized markets • Land access • Local food economy benefits • Resource deficits
7. Corporate Culture	<ul style="list-style-type: none"> • Institutional barriers • Institutional support • Political barriers • Political support • Public barriers • Public support

4.4 – Main and Sub-themes: Food Security

Figure 4 illustrates the predominance of the eight sub-themes identified during the thematic analysis of the key informant interviews. This breakdown shows the key sub-themes and their overall frequency among the urban, rural, and suburban interviewees. Table 2 helps to further clarify these themes based on their frequency amongst the key informants, as well as their individual contexts (i.e., a rural, urban, or suburban politician or staff interviewee).

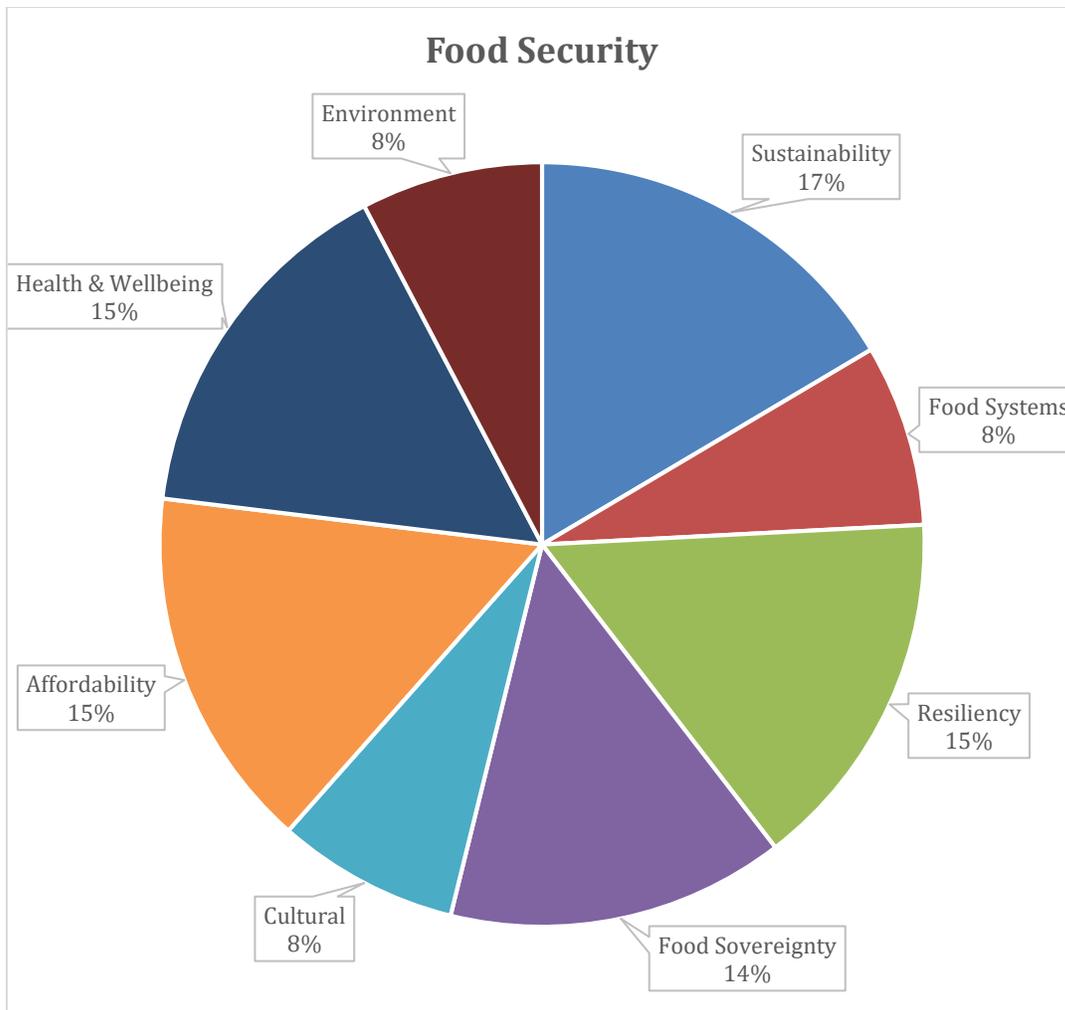


Figure 4 – Food Security Conceptualized in the Municipal Context

Table 2 – Food Security: Sub-theme Breakdown

Food Security	Frequency of Responses					
Sub-themes	<i>Staff</i>	<i>Politician</i>	<i>Urban</i>	<i>Suburban</i>	<i>Rural</i>	Total
<i>Sustainability</i>	7 (47%)	8 (53%)	5 (33%)	7 (47%)	3 (20%)	15 (17%)
<i>Food Systems</i>	5 (71%)	2 (29%)	4 (57%)	2 (29%)	1 (14%)	7 (8%)
<i>Resiliency</i>	6 (43%)	8 (57%)	6 (43%)	5 (36%)	3 (21%)	14 (15%)
<i>Food Sovereignty</i>	5 (38%)	8 (62%)	2 (15%)	5 (39%)	6 (46%)	13 (14%)
<i>Cultural</i>	3 (43%)	4 (57%)	4 (57%)	0	3 (43%)	7 (8%)
<i>Affordability</i>	7 (50%)	7 (50%)	6 (42%)	4 (29%)	4 (29%)	14 (15%)
<i>Health and Wellbeing</i>	6 (43%)	8 (57%)	7 (50%)	5 (36%)	2 (14%)	14 (15%)
<i>Environment</i>	2 (29%)	5 (71%)	3 (42%)	2 (29%)	2 (29%)	7 (8%)

The first theme, **Food Security**, was initially described to participants as a complex sustainable development concept that encompasses the availability of, and access to, healthy nutritional food at all times (FAO, 2019). This includes the individual, household, neighbourhood, and community level. In the context of a dynamic global market that is susceptible to downturns, collapses, and disruptions, food security requires some level of local production capacity to ensure that communities are resilient. During the interviews, participants were asked to describe how they understood the term ‘food security’ as it relates to the municipal context. Participants were also asked to discuss the initial description provided in the recruitment process, touching on whether or not it was productive to describe food security in these terms. The sub-themes that emerged during the data analysis help to broaden the definition of food security, while contextualizing it at the municipal level.

Under this main theme of **Food Security** (Figure 3), eight sub-themes were identified in the data analysis process. During the data analysis, it became clear that the attempts by participants to define food security within the context of municipal government included sub-themes of sustainability, food systems, resiliency, food sovereignty, cultural, affordability, health and wellbeing, and environment.

Sustainability was identified as a clear sub-theme linked to food security. Since 2008, the Capital Regional District (CRD) has accepted the United Nation's definition of sustainability as "meeting the needs of the present without compromising the ability of future generations to meet their own needs," as identified within the 1987 report on the world commission on environment and development (Brundtland, 1987). The CRD has expanded on this, suggesting that this is about being respectful of the environment, of the limits to resource consumption, and to each other (CRD, 2008). Furthermore, this commitment goes beyond environmental protection to encompass financial efficiency, social capacity building, and resource efficiency (CRD, 2008). When asked to define food security in the municipal context, several respondents noted that it was an aspect/tool of sustainability that is in the public interest. Sustainability accounted for 17% of the overall responses among the eight sub-themes. Of the key informants, 75% (15 of 20) identified sustainability as a key aspect of food security. For example, *Respondent 6* noted that food security planning should focus on "building a strong, productive, sustainable food system... that supports an agricultural industry, and a food system that is a vital part of the economy."

Food systems also became a clear sub-theme as participants linked food security as a part of larger planning issues, such as land use considerations for the infrastructure

involved in processing and distributing food, rather than just growing it. Food systems integrate food security with a community's ecological, social, environmental, and economic wellbeing (Potukuchi et al., (1999). In essence, food systems encompass all activities and land use decisions/impacts related to the production, pressing, transportation, consumption, and disposal of food. Several respondents indicated that food systems is a more appropriate way to conceptualize food security at the municipal level because it allows for a more multi-pronged approach that can more clearly relate to basic government services and programs. Food systems accounted for 8% of the overall responses among the eight sub-themes. Of the key informants, 35% (7 of 20) identified food systems as a key aspect of food security. For example, *Respondent 7* noted that food security is more “than just focusing on the consumption of food, [but also related to] lowering carbon footprints... To me, food security is one component of the term I prefer, which is a more sustainable local food system.”

Resilience was identified as a clear sub-theme linked to food security.

As previously discussed, resilience is a component of sustainability referring to a community's ability to respond to adversity/disruptions and gain strength through it (Kulig et al., 2008). Vulnerable individuals or institutions are less able to anticipate, cope with, resist, or recover from the impact of a hazard (Blaikie et al., 2003). Conceptually speaking, disasters occur when vulnerable individuals or institutions face barriers when facing hazards/disruptions that prevent their normal functions (Blaikie et al., 2003). In this sense, a hazard can trigger a disaster if individuals or institutions are unable to cope with the disruption. Several respondents indicated that food security was urgently needed to build community resiliency in the face of natural or man-made disasters/

emergencies. Many pointed to the need to identify local risks and prescribe appropriate policy tools and interventions to buffer communities from possible impacts so that they are less vulnerable when disasters occur. Resilience accounted for 15% of the overall responses around the eight sub-themes. Of the key informants, 70% (14 of 20) identified resilience as a key component of food security. For example, *Respondent 3* noted that food security relates to whether or not “there is going to be enough food... if there [is] an emergency.”

The **food sovereignty** sub-theme refers to the ability for local communities to produce enough food to feed its population so that they are not dependent on fluctuating foreign markets (FSC, 2015). Participants hit on key tenants of food sovereignty when they indicated food security was important as an issue of local accessibility, where the goal is to produce as much local food as possible. Several participants indicated that food security at the municipal level means that we need to make sure we encourage enough local production to sustain our basic needs. Some suggested that, given the possibility of disruptions to global food systems, municipalities have an obligation to provide space and opportunities for people to grow their own food and become more self-sufficient. Of the overall responses, 14% identified food sovereignty as a key component of food security. For example, *Respondent 14* noted that food security is an issue of both “access to fresh, affordable food, [as well as] being able to grow [your] own food.”

The **cultural** sub-theme relating to food security refers to when participants highlighted food security as a value-based mindset that has become popular in both public and political spheres. Respondents suggested that food was becoming increasingly popular in public engagement sessions. Some identified this as a matter of public

opinion, while others identified it as being part of the public interest, given the attention it has received. In many cases, respondents suggested that this component of food security was value-based at the individual level, and can change significantly between urban, rural, and suburban/interface communities. “Cultural” accounted for 8% of the overall responses among the eight sub-themes. Of the key informants, 35% (7 of 20) suggested that there is a cultural component to food security. For example, *Respondent 17* noted that food security is about a “desire to feel good and [in some cases] unrealistic from an urban perspective [since] most people don’t realize the amount of work it takes to produce food.”

Many participants pointed to **affordability** as a key area of focus when discussing local food security. In essence, this theme identifies issues of food access based on marketplace constraints and the economic capacity of community members. It was clear that food security encompasses the ability of community members to access healthy food regardless of socioeconomic, financial, or logistical barriers. This also has links to addressing issues of poverty, and was framed as a basic physiological need that takes precedence over others (Maslow, 1943). While some respondents admitted that components of this theme were beyond the scope of municipal authority, there were actions they could take to empower their citizens and provide opportunities. Affordability accounted for 15% of the overall responses among the eight sub-themes. Of the key informants, 75% (14 of 20) identified affordability as a key component of food security. For example, *Respondent 4* noted that food security “is the ability of people to acquire and have the necessary resources to feed themselves, [such as individuals who are] below the poverty line.”

Participants made it clear that **health and wellbeing** is one of the key roles of local governments in British Columbia, and was identified as a sub-theme linked to food security. In fact, health practitioners have suggested the greatest contributions to the health of the nation have come from local governments (PlanH, 2010). Community health has been one of the core areas of local government responsibility since their creation under the Municipality Act in 1872 (PlanH, 2010). Health practitioners suggest that local governments still have an important role to play in terms of health promotion and risk prevention through environmental design (PlanH, 2010). Many participants reflected these attitudes and pointed to health as a vital objective of food security. Municipalities already promote healthy lifestyles through fitness and recreation, and several interviewees suggested that it made sense to include food as part of that system. Health and wellbeing accounted for 15% of the overall responses among the eight sub-themes. Of the key informants, 70% (14 of 20) identified health and wellbeing as a key component of food security. For example, *Respondent 14* related food security to Maslow's Hierarchy of needs and noted that "we clearly have an issue of affordability in this region."

Lastly, the **environment** was identified as a sub-theme. Many participants pointed to the relationship between food production and the **environment**. Of the spectrum of interests that planners and politicians consider, the environment is significant. Participants pointed to the benefits of local production as a potential tool to offset existing impacts on the environment associated with intensive agriculture, but also warned that there would need to be a balance so that local agriculture respects the local context. Environment accounted for 8% of the overall responses among the eight sub-themes. Of the key informants, 35% (7 of 20) identified the environment as a key

component of food security. For example, *Respondent 1* noted that food security “also relates to... ecological justice issues.” This was mirrored by *Respondent 7*, who noted that there is also an “ecological perspective in terms of habitat values and wildlife.”

4.5 – Main and Sub-themes: Municipal Actions

Figure 5 illustrates the predominance of the 10 sub-themes identified during the thematic analysis of the key informant interviews. This breakdown is based on how these themes relate to each other. Table 3 helps to further clarify these themes based on their frequency amongst the key informants, as well as their individual contexts (i.e., a rural, urban, or suburban politician or staff interviewee).

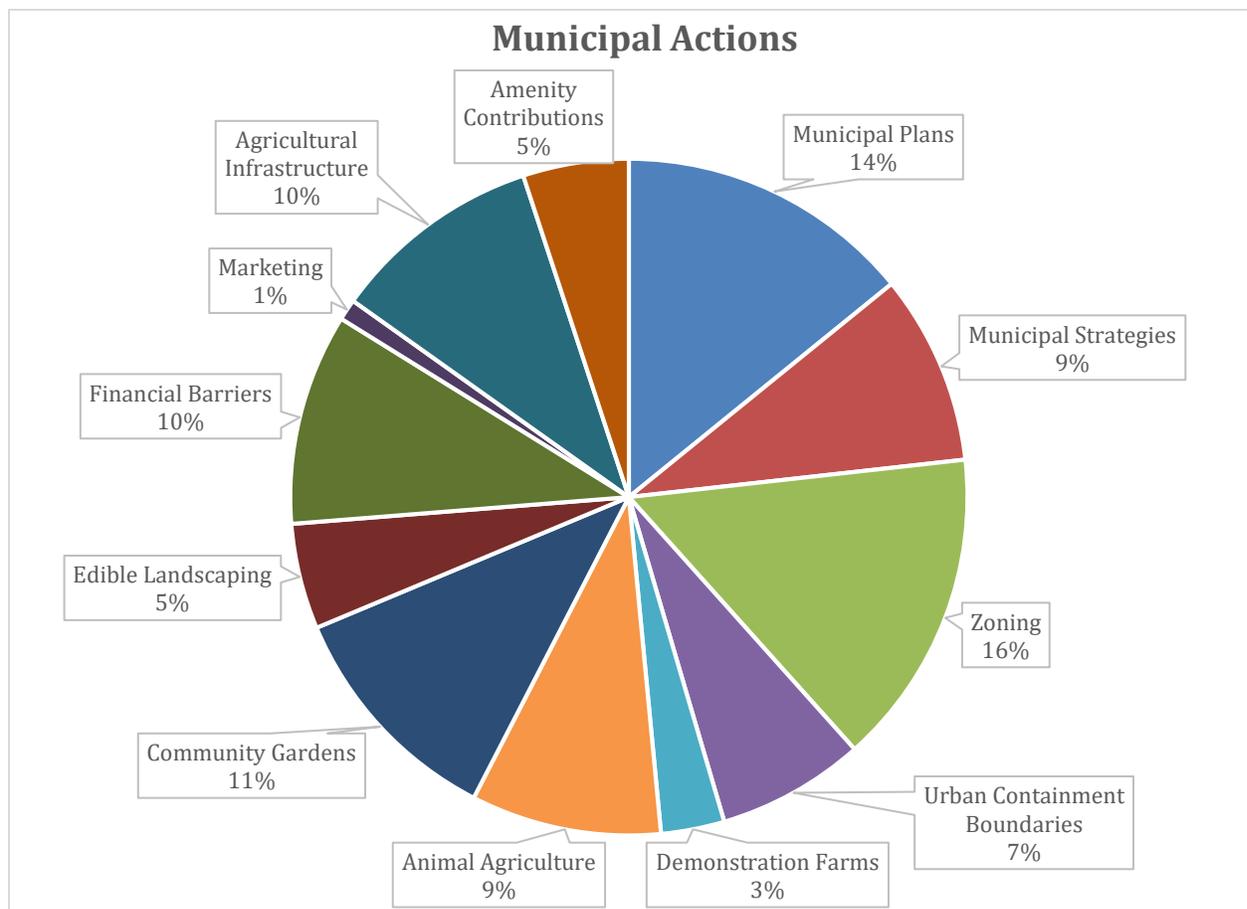


Figure 5 – Municipal Actions

Table 3 – Municipal Actions: Subtheme Breakdown

Municipal Actions	Frequency of Responses					
	<i>Staff</i>	<i>Politician</i>	<i>Urban</i>	<i>Suburban</i>	<i>Rural</i>	Total
<i>Demonstration Farms</i>	0	3 (100%)	2 (67%)	0	1 (33%)	3 (3%)
<i>Animal Agriculture</i>	3 (33%)	6 (67%)	2 (22%)	3 (33%)	4 (45%)	9 (10%)
<i>Community Gardens</i>	5 (45%)	6 (55%)	5 (46%)	3 (27%)	3 (27%)	11 (11%)
<i>Edible Landscaping</i>	2 (40%)	3 (60%)	3 (60%)	1 (20%)	1 (20%)	5 (5%)
<i>Agricultural Infrastructure</i>	4 (40%)	6 (60%)	2 (20%)	4 (40%)	4 (40%)	10 (10%)
<i>Financial Barriers</i>	2 (20%)	8 (80%)	4 (40%)	4 (40%)	2 (20%)	10 (10%)
<i>Municipal Plans</i>	6 (43%)	8 (57%)	4 (28%)	5 (36%)	5 (36%)	14 (14%)
<i>Municipal Strategies</i>	3 (33%)	6 (37%)	4 (45%)	3 (33%)	2 (22%)	9 (9%)
<i>Zoning</i>	7 (47%)	8 (53%)	7 (47%)	3 (20%)	5 (33%)	15 (16%)
<i>Urban Containment Boundaries</i>	2 (29%)	5 (71%)	4 (57%)	2 (29%)	1 (14%)	7 (7%)

Since the identification of tools is one of the objectives of this research, the second theme, ***Municipal Actions***, was contained in several of the main questions posed to participants: “has your municipality created any policies that address food security or food security issues?” and “can you think of good examples from elsewhere in the region that you would point to?”. This was also motivated by the research goal of identifying innovative solutions for food insecurity. This theme encompasses all actions and policies that local governments are taking to address the issue of food security within their jurisdictions. Sub-themes generated during the data analysis can help to form a toolkit for municipal policy makers in similar communities.

During the data analysis, it became clear that the tools and actions participants highlighted for the municipal level could be categorized under the sub-themes of municipal plans, municipal strategies, zoning, urban containment boundaries, demonstration farms, animal agriculture, community gardens, edible landscaping, agricultural infrastructure, and removing financial barriers.

Demonstration farms is a sub-theme that refers to publicly owned land that is made available to the community for agricultural purposes. These are typically managed by non-profit organizations and the land is leased from the municipality on the basis that it will provide opportunities for community members, can stimulate growth in the local agricultural sector, and may have a public component such as workshops, gardens, farmers' markets, or public trails. Community-supported educational farms can act as incubators for the local agricultural industry while increasing public knowledge about farming. Demonstration farms accounted for 3% of the overall responses among the 10 sub-themes. Of the key informants, 15% (3 of 20) identified the environment as a municipal action. However, this recommendation was purely from the political respondents, and no suburban respondents identified this theme. For example, *Respondent 2* noted that their municipality leases land to an "organic farm operation... that is a demonstration farm."

Many participants pointed to reducing policy barriers to **animal agriculture** as a sub-theme in urban contexts. The intent of this approach is to increase opportunities for individuals to participate in their food systems. The most popular of these is the keeping of poultry, particularly chickens, in residential backyards, however, this may also include bees, rabbits, sheep, goats, and pigs. The majority of jurisdictions within the CRD allow

for backyard chickens, and several are considering making an allowance for goats on residential properties. Animal agriculture accounted for 9% of the overall responses among the 10 sub-themes. Of the key informants, 45% (9 of 20) identified animal agriculture as a municipal action. For example, *Respondent 12* noted that “nearby municipalities [allow] backyard chickens” and that their municipality had “worked on a chicken bylaw.”

Similar to demonstration farms, **community gardens** was identified as a sub-theme that empowers community members who may lack access to land of their own by providing an opportunity to participate in their local food system. These are also typically managed by non-profit organizations, and may include a public or charitable component. Cities may choose to subsidize some of the costs associated with community gardens, such as by providing access to water. Community gardens accounted for 11% of the overall responses among the ten sub-themes. Of the key informants, 55% (11 of 20) identified community gardens as a municipal action. For example, *Respondent 7* noted that they were in the process of “reviewing a community gardens policy”.

Edible landscaping was a sub-theme identified by several participants as an easy step to strengthen local food production. This includes landscaping done by the City on public property, as well as landscaping associated with private developments, particularly at the interface of public and private lands. Passive examples of this were pointed to in scenarios where cities populated boulevards or city parks with food bearing plants, while other communities highlighted demonstration gardens that were being actively maintained by city staff. Edible landscaping accounted for 5% of the overall

responses among the 10 sub-themes. Of the key informants, 25% (5 of 20) identified edible landscaping as a municipal action. For example, *Respondent 2* noted that they were exploring incentives for “developers to incorporate [food garden] plots, or [to] plant trees [that produce] food.”

The sub-theme of **agricultural infrastructure** was also mentioned. This includes allowing for the creation of farmers’ markets, food-processing facilities, abattoirs, and planning for increased demands on existing infrastructure such as municipal water. Provincially designated agricultural land (ALR) was also identified as an important piece of local agricultural infrastructure that municipalities can have some leverage over. Agricultural infrastructure accounted for 10% of the overall responses among the 10 sub-themes. Of the key informants, 50% (10 of 20) identified agricultural infrastructure as a municipal action. For example, *Respondent 10* highlighted “providing infrastructure, [such as] a mobile abattoir” as a way for municipalities to encourage local farming. In contrast, *Respondent 15* pointed to their “local community [farmers’] market, [where] people bring their excess food.”

The **financial barriers** sub-theme was identified as a challenge for individuals in the agricultural industry. According to some participants, there is an opportunity to reduce or eliminate utilities such as water rates when there is a clear agricultural use. Several respondents noted that this had been achieved in their jurisdictions through a proposal to directly subsidize farm activities, or by establishing different water rates for farmers and homeowners to subsidize the water requirements of crops. While water was a key financial barrier, other components such as land access can also be reduced through the establishment of demonstration farms and community gardens. Financial barriers

accounted for 10% of the overall responses among the 10 sub-themes. Of the key informants, 50% (10 of 20) identified financial barriers as a municipal action. For example, *Respondent 16* noted that in the past, municipalities had resisted “[upgrading] water meters [for farms that weren’t] on a major line... but now it’s almost [automatically approved] unless there is a capacity issue.”

The **Municipal Plans** sub-theme was identified as one of the starting points for taking action on food security, and was the most frequent response. Municipal plans accounted for 14% of the overall responses among the 10 sub-themes. Of the key informants, 70% (14 of 20) identified municipal plans as a municipal action. For example, *Respondent 12* noted that there is “language in the official community plan... and speaks to [what] the City should be doing [to support] local food systems.” This is naturally linked to the **Municipal Strategies** sub-theme. Municipal strategies accounted for 9% of the overall responses among the sub-themes. Of the key informants, 45% (9 of 20) identified municipal strategies as a municipal action. For example, *Respondent 13* noted that their municipality had established an “agricultural strategy... [which as been reflected in] the economic development strategy.”

The **Zoning** sub-theme was identified as one of the more influential municipal tools because it can both limit or preserve the agricultural potential of land. For communities that lack staff resources, zoning was one of the primary tools that preserved agricultural land. Zoning accounted for 16% of the overall responses among the 10 sub-themes. Of the key informants, 75% (15 of 20) identified zoning as a municipal action. For example, *Respondent 5* pointed to the work that the City of Victoria has been

doing “in recognizing and trying to change areas of their bylaws that restrict people from urban [farming].”

Lastly the **Urban Containment Boundary** sub-theme refers to a tool local government can utilize to restrict the spread of growth and preserve rural lands by focusing density in town centres. Urban containment boundary accounted for 7% of the overall responses among the 10 sub-themes. Of the key informants, 35% (7 of 20) identified urban containment boundaries as a municipal action. For example, *Respondent 17* noted that Saanich has established and “maintained an urban containment boundary... [and that] one of the key [actions to protect farmland] is maintain the exclusivity of farmland [especially from urban encroachment].”

4.6 – Main and Sub-themes: Potential Municipal Actions

Figure 6 illustrates the predominance of the 14 sub-themes identified during the thematic analysis of the key informant interviews. This breakdown is based on how these themes relate to each other. Table 4 helps to further clarify these themes based on their frequency amongst the key informants, as well as their individual contexts (i.e., a rural, urban, or suburban politician or staff interviewee).

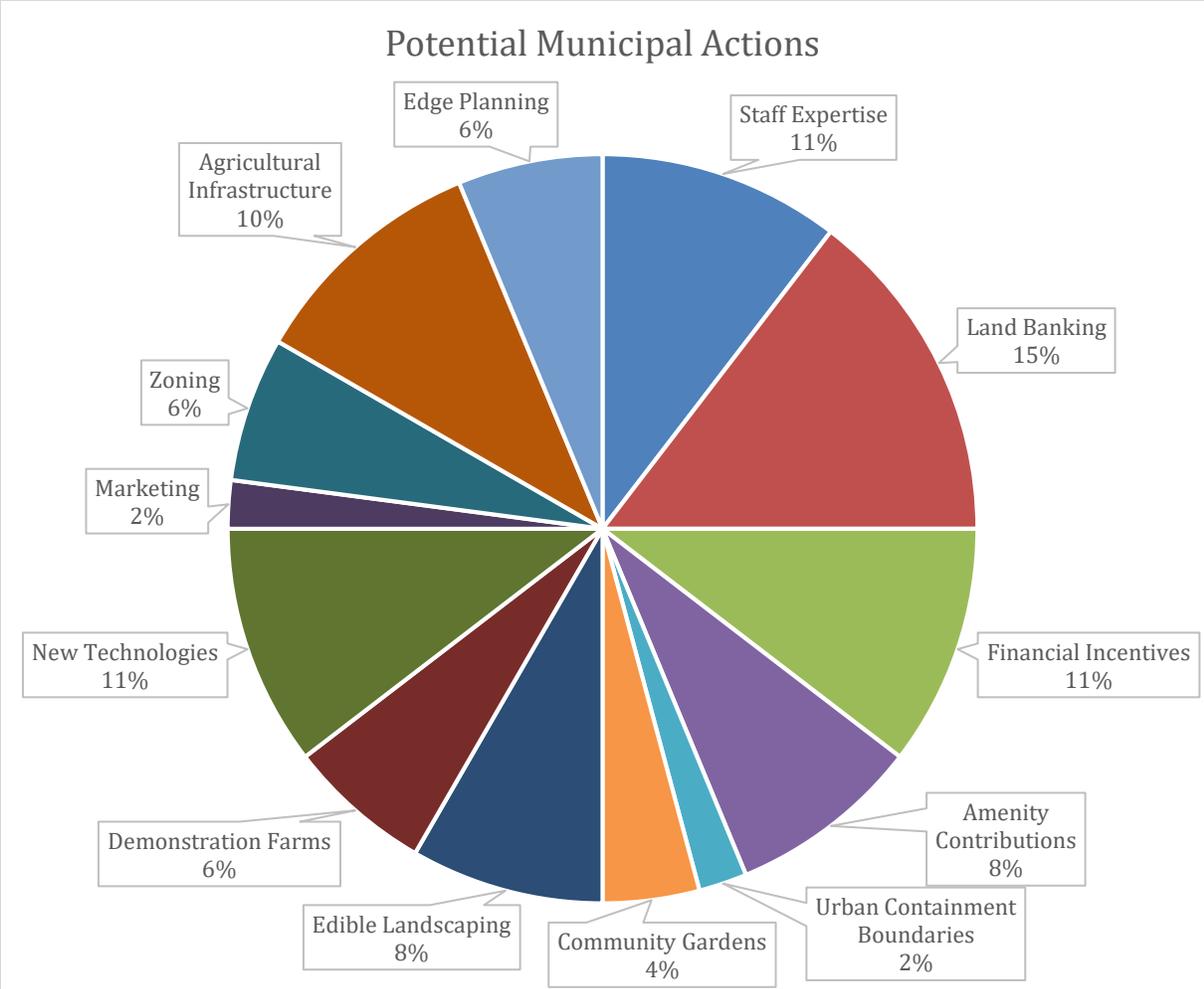


Figure 6 – Potential Municipal Actions

Table 4 – Potential Municipal Actions: Sub-theme Breakdown

Potential Municipal Actions	Frequency of Responses					
	Staff	Politician	Urban	Suburban	Rural	Total
Staff Expertise	5 (100%)	0	2 (40%)	2 (40%)	1 (20%)	5 (11%)
Land Banking	1 (14%)	6 (86%)	3 (43%)	3 (43%)	1 (14%)	7 (15%)
Financial Incentives	2 (40%)	3 (60%)	2 (40%)	1 (20%)	2 (40%)	5 (11%)
Amenity Contributions	0	4 (100%)	2 (50%)	2 (50%)	0	4 (8%)
New Technologies	1 (20%)	4 (80%)	2 (40%)	2 (40%)	1 (20%)	5 (11%)
Marketing	0	1 (100%)	0	0	1 (100%)	1 (2%)

<i>Edge Planning</i>	1 (50%)	1 (50%)	0	1 (100%)	0	2 (6%)
* <i>Edible Landscaping</i>	2 (50%)	2 (50%)	1 (25%)	2 (50%)	1 (25%)	4 (8%)
* <i>Demonstration Farms</i>	1 (67%)	2 (33%)	0	2 (33%)	1 (67%)	3 (6%)
* <i>Zoning</i>	2 (33%)	1 (67%)	1 (67%)	2 (33%)	0	3 (6%)
* <i>Agricultural Infrastructure</i>	1 (20%)	4 (80%)	2 (40%)	2 (40%)	1 (20%)	5 (10%)
* <i>Community Gardens</i>	1 (50%)	1 (50%)	0	2 (100%)	0	2 (4%)
* <i>Urban Containment Boundaries</i>	0	1 (100%)	0	0	1 (100%)	1 (2%)
<i>*indicates a tool that is already being used in surrounding jurisdictions</i>						

The third theme, **Potential Municipal Actions**, was identified during the literature review and reflected in one of the main questions posed to participants: “*what other methods would you like to see introduced to address food security issues?*”. This was also motivated by the research goal of identifying innovative solutions for food insecurity, particularly in identifying potential tools that local governments could use. Sub-themes generated during the data analysis can help to form a toolkit of potential options that municipalities can explore. Interestingly, there is some overlap between potential actions and current actions since some municipalities in the region have already implemented some of these ideas.

Under this main theme of **Potential Municipal Actions** (Figure 6), 14 sub-themes were identified in the data analysis process. During the analysis, the potential tools and actions participants highlighted for consideration at the municipal level were categorized under the sub-themes of additional staff expertise, land banking, financial incentives, amenity contributions, urban containment boundaries, community gardens, edible

landscaping, demonstration farms, new technologies, marketing, animal agriculture, zoning, agricultural infrastructure, and edge planning.

Additional staff expertise was highlighted as an important sub-theme for municipalities that wanted to take an active role in developing agricultural policy. Depending on a municipality's resources, this could be a dedicated staff position for collaborating between departments and external organizations. or encouraging staff training and workshops that focus on food security to ensure that policy makers have a realistic understanding of the issues. Additional staff expertise accounted for 11% of the overall responses among the 14 sub-themes. Of the key informants, 25% (5 of 20) identified additional staff expertise as a potential municipal action. For example, *Respondent 7* noted that "having the staff resources [is] important... [as groups like] food policy councils [need] staff working in the background [so that they are] successful."

Albeit controversial for some, the concept of **land banking** (or farmland trusts) was generally describe positively. This is the idea that local authorities should actively purchase and preserve high-quality agricultural land. Most commonly, the idea was that the regional authority should be able to invest public funds to preserve farmland and support the municipalities who bear the brunt of the responsibility for preserving agricultural land. If approached at the regional level, the notion is that all residents should be supporting the rural lands that provide both food and aesthetic benefits to the region. Land banking accounted for 15% of the overall responses among the 14 sub-themes. Of the key informants, 35% (7 of 20) identified land banking as a potential municipal action. For example, *Respondent 1* noted that "we [may wish to consider going]

a step further and create a publicly owned land bank of agricultural land [as an alternative to putting constraints} on private land owners.”

Several participants also mentioned the theme of **financial incentives**. This relates to both passive financial incentives, such as creating tax structures that value and subsidize food security activities, as well as direct financial incentives through grants or purchasing policies that put money into the hands of local producers. In some instances, responses under this theme were left vague. Financial incentives accounted for 11% of the overall responses among the 14 sub-themes. Of the key informants, 25% (5 of 20) identified financial incentives as a potential municipal action. For example, *Respondent 10* noted that municipalities should “[explore alternative] tax structures... as a way to give [farmers] a hand [so that we] strengthen local food security.”

Amenity contributions is a sub-theme that touches on a municipality’s ability to leverage public goods from new developments. Provincial legislation currently allows municipalities to collect resources from developers to pay for the increases in demand associated with any given development. Amenity contributions can include parkland, infrastructure, affordable housing, and more. While there is no mandatory farmland Development Cost Charge, amenity contributions currently allow local governments to charge developers for the farmland needed to support the increase in population. Community amenities can include public spaces and facilities and parkland improvements (Ministry of Community, Sport and Cultural Development, 2014). Amenity contributions accounted for 8% of the overall responses among the 14 sub-themes. Of the key informants, 20% (4 of 20) identified amenity contributions as a potential municipal action. For example, *Respondent 3* noted that “[cities could charge]

an amenity fee that the developer must pay [at time of] rezoning, so [that there is] a net benefit to agriculture.”

New technologies is a sub-theme that refers to the positive impacts cities can have in promoting technologies that can bolster local food production or processing while making appropriate changes to local policy so that local growers are not faced with barriers. In particular, greenhouse technology was highlighted as an area where local governments could remove barriers to encourage local production. New technologies accounted for 11% of the overall responses among the 14 sub-themes. Of the key informants, 25% (5 of 20) identified new technologies as a potential municipal action. For example, *Respondent 1* noted that “[the city could provide] zoning opportunities [to support growers] with greenhouse technology.”

Marketing is a sub-theme that was highlighted by some participants as a key action to support local food systems. In the rural context, this may mean ensuring that sign bylaws support local agriculture and highlight local farmers’ markets. In contrast, in urban and suburban areas where farming may not be ideal, this may be an opportunity for local authorities to highlight food production in neighbouring municipalities so that their population is aware of, and can support, local farmers. Marketing accounted for 2% of the overall responses among the 14 sub-themes. Of the key informants, 5% (1 of 20) identified additional marketing as a potential municipal action. For example, *Respondent 15* noted that “[one of the key ways urban communities can support rural food producers is] to help with marketing... [for instance], a lot of these municipalities can have farmers’ markets.”

Finally, **edge planning** was a theme brought up by several participants. It relates to the buffering of agricultural lands from adjacent uses that can be conflicting. For example, in some instances residential development is brought right to the border of farms and creates conflicts between the landowners. Although participants reported that this concept is well researched and the best practices have been identified, some communities are still not using them, and none of the key informants from the case study communities identified it as an action their municipality had successfully undertaken. Edge planning accounted for 6% of the overall responses among the 14 sub-themes. Of the key informants, 10% (2 of 20) identified edge planning as a potential municipal action. For example, *Respondent 5* noted that “a lot of research has been done on ‘edge effects’, [and] best practices have [been identified but] still aren’t used. More consideration could be given to the edge effects around agricultural areas.”

4.7 – Main and Sub-themes: Municipal Advocacy & Education

Figure 7 illustrates the predominance of the eight sub-themes identified during the thematic analysis of the key informant interviews. This breakdown is based on how these themes relate to each other. Table 5 helps to further clarify these themes based on their frequency amongst the key informants, as well as their individual contexts (i.e., a rural, urban, or suburban politician or staff interviewee).

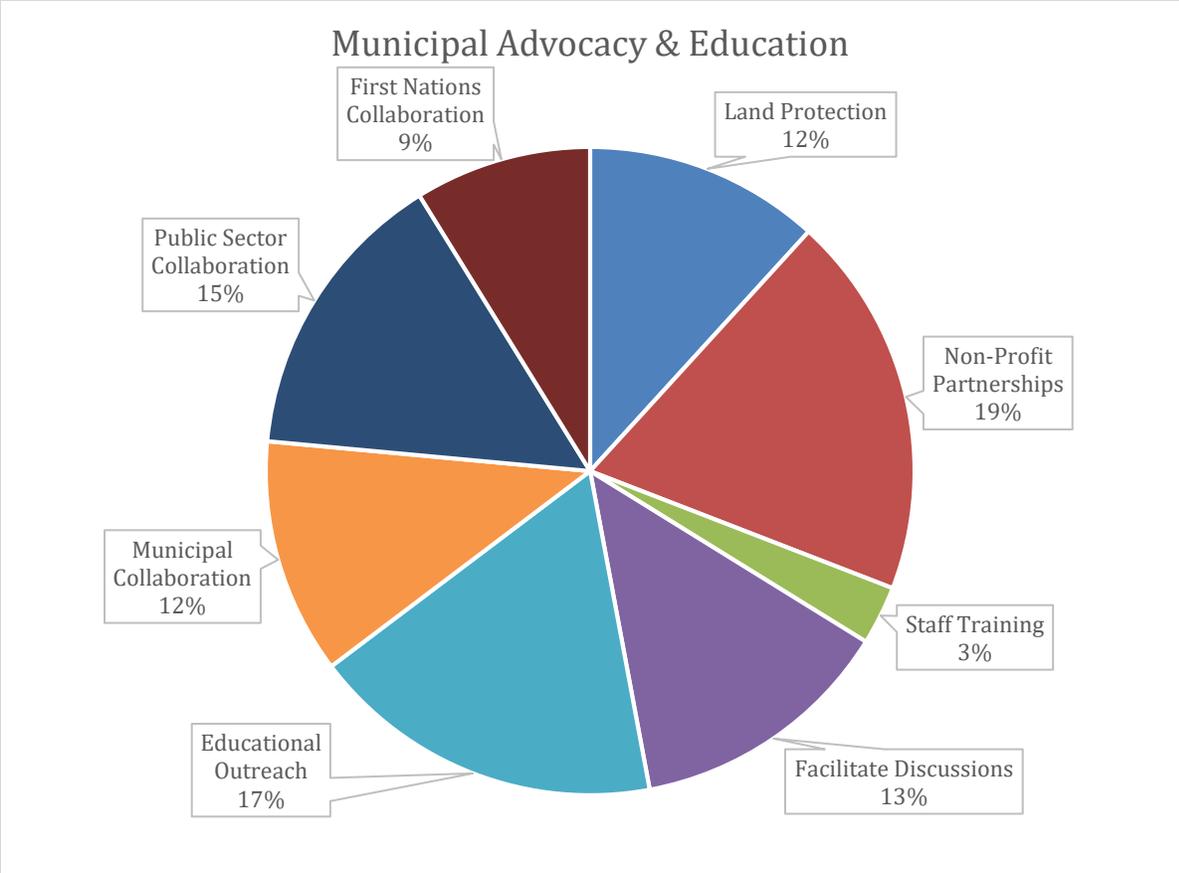


Figure 7 – Municipal Advocacy and Education

Table 5 – Municipal Advocacy & Education: Sub-theme Breakdown

Municipal Advocacy & Education	Frequency of Responses					
	Staff	Politician	Urban	Suburban	Rural	Total
Sub-themes:						
<i>Land Protection</i>	3 (37%)	5 (63%)	3 (37%)	3 (37%)	2 (26%)	8 (12%)
<i>Non-Profit Partnerships</i>	4 (31%)	9 (69%)	6 (46%)	4 (31%)	3 (23%)	13 (19%)
<i>Municipal Collaboration</i>	3 (38%)	5 (62%)	3 (37%)	4 (50%)	1 (13%)	8 (12%)
<i>Facilitate Discussions</i>	4 (45%)	5 (55%)	4 (44%)	4 (44%)	1 (12%)	9 (13%)
<i>Educational Outreach</i>	5 (42%)	7 (58%)	4 (33%)	5 (42%)	3 (25%)	12 (17%)
<i>Public Sector Collaboration</i>	4 (40%)	6 (60%)	3 (30%)	5 (50%)	2 (20%)	10 (15%)
<i>First Nations Collaboration</i>	4 (67%)	2 (33%)	2 (33%)	2 (33%)	2 (33%)	6 (9%)
<i>Staff Training</i>	1 (50%)	1 (50%)	0	2 (100%)	0	2 (3%)

The fourth theme, ***Municipal Advocacy & Education***, is intended to encompass responses that identify actions and opportunities that can advance food security issues, but that are not necessarily suitable for municipal governments to take on as a part of their regular operations, or would require collaboration with other organizations. For instance, there are organizations throughout the case study area, such as CRFAIR and LifeCycles Project, that manage projects that reduce food insecurity. While it may not be possible or advisable for municipalities to replicate these programs, there may be opportunities to work with them.

Under this main theme of ***Municipal Advocacy and Education*** (Figure 7), eight sub-themes were identified in the data analysis process. During the analysis, it became clear that the opportunities for municipal advocacy and education could be categorized under the sub-themes of land protection, non-profit partnerships, staff training, facilitate discussions, educational outreach, municipal collaboration, public sector collaboration, and First Nations collaboration.

The theme of **land protection** relates to both conventional food sources and unconventional sources, such as salmon, seaweed, and other hunting or foraging activities. The goal behind this theme is to provide opportunities to educate the public on the importance of agricultural land preservation as an integral part of a local food system, as well as the importance of supporting other communities so that they can maintain their lands. Land protection accounted for 12% of the overall responses among the eight sub-themes. Of the key informants, 40% (8 of 20) identified land protection as an option for municipal advocacy and education. For example, *Respondent 8* noted that “there has

to be land available for [farmers]... and [advocating for the] protection of agricultural land and agricultural communities [is] a top priority.”

One common theme that emerged was the importance of **non-profit partnerships**. Some participants noted that there were some elements of food security that local government should not be involved in. Particularly, programs and activities that non-profit organizations already carry out. Rather, local governments should identify the key service providers within their jurisdictions, and tap into the existing energy through partnerships, promotion, and, in some, resource sharing. Even participants who were critical of local government involvement in food systems issues noted that municipalities could bring attention to the non-profits that already work within their jurisdictions. Non-profit partnerships accounted for 19% of the overall responses among the eight sub-themes. Of the key informants, 65% (13 of 20) identified non-profit partnerships as an option for municipal advocacy and education. For example, *Respondent 14* noted that “[a local non-profit organization] runs a food pickup program... [and this is something that] municipal parks and recreation staff [could offer support to].”

Municipal collaboration emerged as a key theme, and was highlighted as a tool that could save municipal authorities both time and resources. The sentiment was that other municipalities have tackled these sorts of issues within their own jurisdictions, and it may be possible to borrow from their work, customize it to their own context, and build off of what others have already done. In addition to borrowing from others, there may be opportunities to work with other municipalities and borrow from each other’s experiences. This sub-theme has been identified in other work, such as Sonnino’s concept of translocalism (Sonnino, 2017). Municipal collaboration accounted for 12% of

the overall responses among the eight sub-themes. Of the key informants, 40% (8 of 20) identified municipal collaboration as an option for municipal advocacy and education. For example, *Respondent 25* noted that “building upon what others have done can save an enormous amount of time. [Cities] can look at what other places have done [and] customize those policies to [their] communities.”

Facilitate discussions refers to actions that surround engaging with members of the public or public organizations so that community members and individuals from other sectors with specialized knowledge (such as food banks, processing plants, etc.) can express the values they attach to food security and set local priorities. This sort of engagement puts more power in the hands of the public to identify local values and priorities. Facilitate discussions accounted for 13% of the overall responses among the eight sub-themes. Of the key informants, 45% (9 of 20) identified facilitating discussions as an option for municipal advocacy and education. For example, *Respondent 18* noted that “one of the key things local government can do is to facilitate communication... [community strength] comes from the people in the community that have come together and put their minds together.”

In contrast to ‘facilitating discussions,’ themes under **Educational Outreach** refer to directed engagement with members of the public on specific issues, and can be done in partnership with other organizations and municipalities. Educational outreach accounted for 17% of the overall responses among the eight sub-themes. Of the key informants, 60% (12 of 20) identified educational outreach as an option for municipal advocacy and education. For example, *Respondent 3* noted that “[many municipalities] have participated [in education around] water cisterns and collecting water... and the

CRD was given out composters at one point [and sharing this information] impacts agriculture.”

Public sector collaboration refers to actions and opportunities to engage with other levels of government and governmental organizations. The sentiment was that municipalities have the ability to express a government voice on issues that may be outside of the scope of what municipalities have a direct role in. For instance, the Island Health Authority has their own regulations for the sale of home grown eggs, and there are also regional, provincial, and federal aspects to food security. Public sector collaboration accounted for 15% of the overall responses among the eight sub-themes. Of the key informants, 50% (10 of 20) identified public sector collaboration as an option for municipal advocacy and education. For example, *Respondent 16* noted that “[provincial agrology staff] are being lost, and there might not be replacements for quite a while... [they] hope that municipalities lobby the [provincial] government to get someone on the ground.”

First Nations collaboration emerged as participants pointed to the importance of traditional food sources. While no direct partnerships were identified, several participants suggested that First Nations communities could be a very strong lobby group, particularly given the links between environment, cultural heritage, and traditional food sources. One participant pointed to instances where cities brought attention to Indigenous landscapes and uses through interpretive signage at native plant gardens. First Nations collaboration accounted for 9% of the overall responses among the eight sub-themes. Of the key informants, 30% (6 of 20) identified First Nations collaboration as an option for municipal advocacy and education. For example,

Respondent 13 noted that local governments must “consider First Nations’ interests... [and] unspoken voices have to be included in the public interest.”

Staff training was identified as an opportunity where planners and municipal staff could sit on provincial or regional planning committees, work closely with agricultural committees and groups, or attend food forums and talks outside of typical training courses. This is highlighting instances where staff members volunteer and seek out opportunities to be involved in, and learn about, their local food systems. Staff training accounted for 3% of the overall responses among the eight sub-themes. Of the key informants, 10% (2 of 20) identified staff training as an option for municipal advocacy and education. For example, *Respondent 13* noted that food security is a regional issue, so “[planners] must work regionally... and [seek] any opportunity to be involved in provincial or regional planning committees.”

4.8 – Main and Sub-themes: Potential Provincial Actions

Figure 8 illustrates the predominance of the seven sub-themes identified during the thematic analysis of the key informant interviews. This breakdown is based on how these themes relate to each other. Table 6 helps to further clarify these themes based on their frequency amongst the key informants, as well as their individual contexts (i.e., a rural, urban, or suburban politician or staff interviewee).

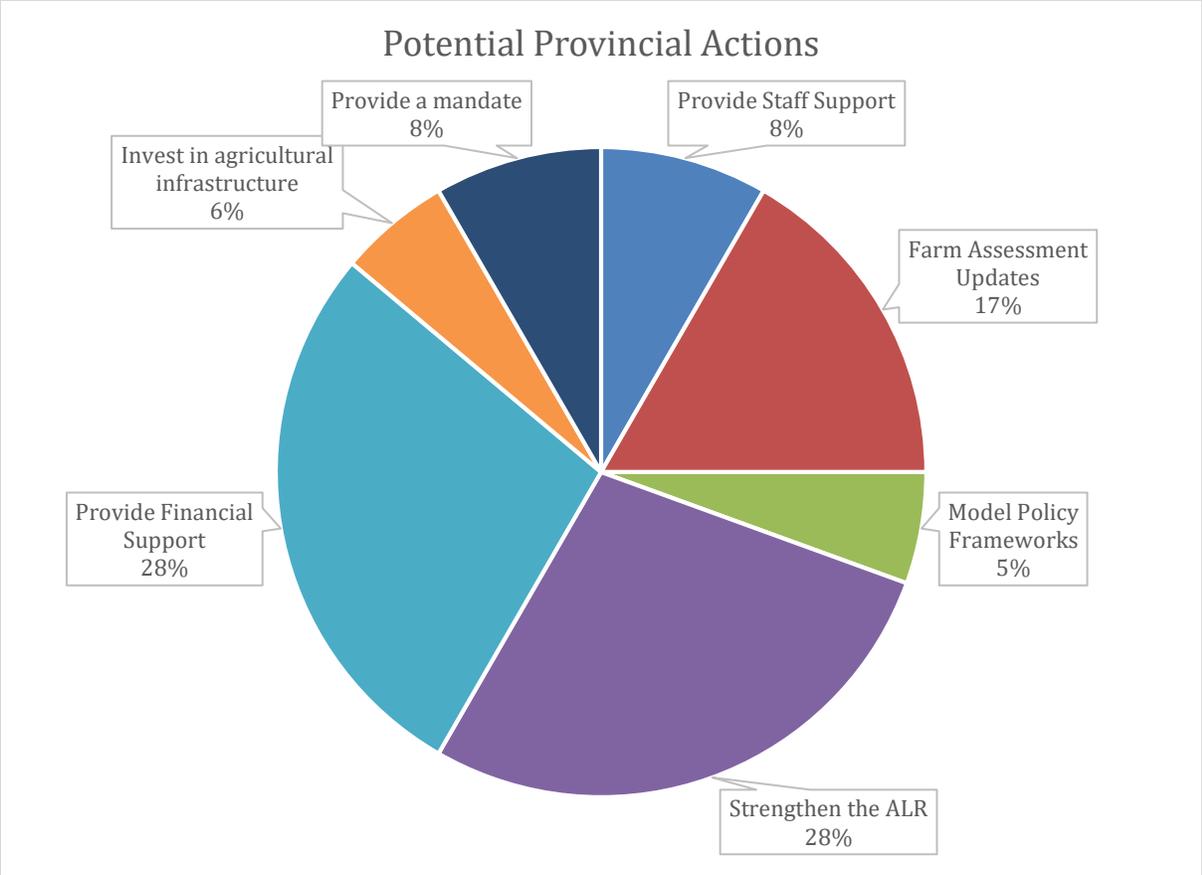


Figure 8 – Potential Provincial Actions

Table 6 – Potential Provincial Actions: Sub-theme Breakdown

Potential Provincial Actions	Frequency of Responses					
	Staff	Politician	Urban	Suburban	Rural	Total
<i>Strengthen the ALR</i>	3 (30%)	7 (70%)	1 (10%)	5 (50%)	4 (40%)	10 (28%)
<i>Provide Staff Support</i>	1 (33%)	2 (67%)	1 (33%)	0	2 (67%)	3 (8%)
<i>Provide Financial Support</i>	2 (20%)	8 (80%)	3 (30%)	4 (40%)	3 (30%)	10 (28%)
<i>Invest in Agricultural Infrastructure</i>	0	2 (100%)	1 (50%)	0	1 (50%)	2 (6%)
<i>Farm Assessment Updates</i>	1 (17%)	5 (83%)	1 (17%)	3 (50%)	2 (33%)	6 (17%)
<i>Model Policy Frameworks</i>	2 (100%)	0	0	1 (50%)	1 (50%)	2 (5%)
<i>Provide a mandate</i>	1 (33%)	2 (67%)	2 (67%)	1 (33%)	0	3 (8%)

The fifth theme, ***Potential Provincial Actions***, is intended to encompass responses that identify actions, policies, or tools that municipal authorities believe the Province of British Columbia should be considered to enhance the ability of local governments to address food security issues. Since one of the intended research contributions is to identify potential tools that would require provincial action, participants were asked what actions/initiatives they would like to see the Province initiate.

Under this main theme of ***Potential Provincial Actions*** (Figure 8), seven sub-themes were identified in the data analysis process. These sub-themes were providing staff support, farm assessment updates, model bylaw frameworks, strengthening the ALR, providing financial support, investing in agricultural infrastructure, and providing a mandate.

Strengthening the ALR emerged as a sub-theme when participants were asked how the province could improve the delivery of tools that assist local governments in strengthening food security. This included policy interventions, such as addressing land speculation issues and potentially identifying lands outside of the official ALR that hold agricultural value or potential. Strengthening the ALR accounted for 28% of the overall responses among the seven sub-themes. Of the key informants, 50% (10 of 20) identified strengthening the ALR as a potential provincial action. For example, *Respondent 11* noted that “there are backdoors, loopholes, and escape clauses which [can cause] perfectly arable land to disappear... and [improvements must be from] a provincial perspective [since they] control the agricultural land reserve.”

Staff support emerged as a minor sub-theme where provincial expertise can be made available to municipal government. For example, an extension officer service could be made available through the Agricultural Land Commission. Staff support accounted for 7% of the overall responses among the eight sub-themes. Of the key informants, 15% (3 of 20) identified providing staff support as a potential provincial action. For example, *Respondent 6* noted that “there is a [community desire for the Province to] continue to have agrology staff available to [provide] expertise.”

The staff support theme is linked to the sub-theme of **providing financial support**, which looks at providing incentives from both a taxation and grant perspective for farmers, purchasing policies, and municipalities. Providing financial support accounted for 28% of the overall responses among the seven sub-themes. Of the key informants, 50% (10 of 20) identified providing financial support as a potential provincial action. For example, *Respondent 15* noted that “[the Province] can provide funding... because municipalities are stretched so far, and [additional responsibilities] are continuously downloaded to them.”

Staff support and financial resources also ties into the sub-theme of **investing in agricultural infrastructure**, which emerged as participants pointed to opportunities that the Province could provide policy to protect agricultural lands, preserve soil quality, and purchase arable lands. Investing in agricultural infrastructure accounted for 6% of the overall responses among the seven sub-themes. Of the key informants, 10% (2 of 20) identified investing in agricultural infrastructure as a potential provincial action. For example, *Respondent 15* noted that “the Province does not have a safe soil policy...

if it did, municipalities [could] require soil deposit and garden soil to come from a clean certified source.”

Farm assessment updates emerged as a sub-theme when participants pointed to the need to reevaluate the definitions of farmland under BC assessment. For instance, farm status is granted based on the money a farmer generates from products grown on site. These can be crops, animal feed, or even Christmas trees. There appeared to be some agreement that individuals who are not fully utilizing agricultural land for food should still be valued for preserving the land, but that operators who grow food should receive the bulk of the benefits. Farm assessment updates accounted for 17% of the overall responses among the seven sub-themes. Of the key informants, 30% (6 of 20) identified farm assessment updates as a potential provincial action. For example, *Respondent 1* noted that “agricultural land [under the Provincial Government’s control] is not being used to benefit food production... [and] there needs to be a mechanism to [transition] the rural estates back into agricultural production.”

Model policy frameworks emerged as a sub-theme as participants pointed out the importance of guides, handbooks, and other policy frameworks as a way to empower local governments, as well as a tool to legitimize food security as a local government priority rather than leaving municipalities to develop these resources on their own. Model policy frameworks accounted for 5% of the overall responses among the seven sub-themes. Of the key informants, 10% (2 of 20) identified model policy frameworks as a potential provincial action. For example, *Respondent 5* noted that “[higher levels of government could provide] guides and handbooks so that local governments can have

something to refer to and implement, rather than trying to develop all of the knowledge themselves.”

Providing a mandate emerged as a sub-theme as participants pointed to the provincial level of government to clarify the roles and responsibilities of local government in the context of addressing food security issues. When a mandate is provided, it legitimizes government action and forces a base level of action in each jurisdiction. Additionally, when a mandate is provided, it is a justification for more funds and resources to be made available to local government. In some instances, participants indicated that some municipalities might not act on food security issues unless senior government makes it clear that they should. Providing a mandate accounted for 8% of the overall responses among the seven sub-themes. Of the key informants, 15% (3 of 20) identified providing a mandate as a potential provincial action. For example, *Respondent 10* noted that “as far as the Province is concerned, they [should] have policies and statements to preserve farmland and encourage agriculture.” In contrast, *Respondent 3* noted that “if [food security is a pressing concern] then senior government needs to [take action] and [provide] support [so municipalities] can legislate it.”

4.9 – Main and Sub-themes: Economic Aspects

Figure 9 illustrates the predominance of the five sub-themes identified during the thematic analysis of the key informant interviews. This breakdown is based on how these themes relate to each other. Table 7 helps to further clarify these themes based on their frequency amongst the key informants, as well as their individual contexts (i.e., a rural, urban, or suburban politician or staff interviewee).

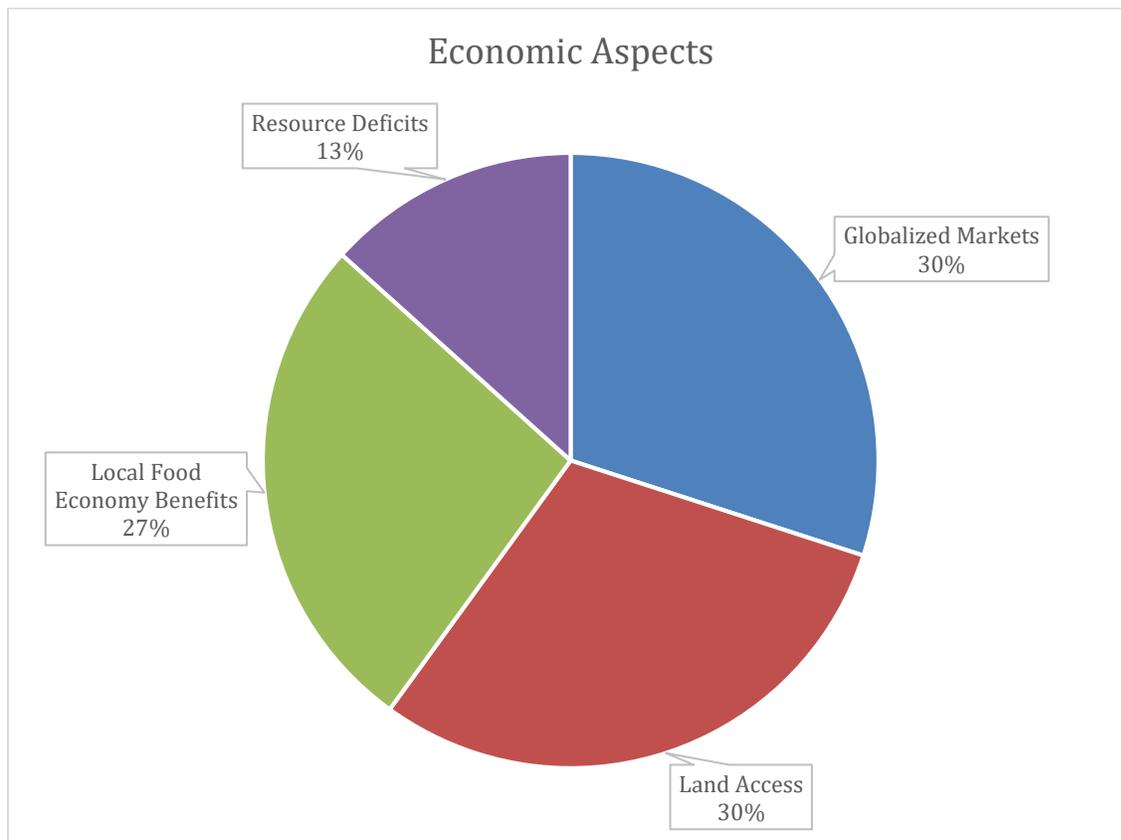


Figure 9 – Economic Aspects

Table 7 – Economic Aspects: Sub-theme Breakdown

Economic Aspects	Frequency of Responses					Total
	Staff	Politician	Urban	Suburban	Rural	
<i>Local Food Economy Benefits</i>	5 (63%)	3 (37%)	3 (38%)	4 (50%)	1 (12%)	8 (27%)
<i>Globalized Markets</i>	4 (44%)	5 (56%)	4 (44%)	3 (34%)	2 (22%)	9 (30%)
<i>Land Access</i>	5 (56%)	4 (44%)	3 (34%)	2 (22%)	4 (44%)	9 (30%)
<i>Resource Deficits</i>	2 (50%)	2 (50%)	1 (25%)	3 (75%)	0	4 (13%)

The sixth theme, ***Economic Aspects***, is intended to encompass responses that highlighted the economic challenges associated with establishing a vibrant local food system at both the individual and organization level, as well as the potential economic

benefits associated with enhancing food security. This was particularly useful in identifying some of the rationale that politicians and policy makers utilized when identifying appropriate actions for their communities.

Under this main theme of ***Economic Aspects*** (Figure 9), five sub-themes were identified in the data analysis process. During the data analysis, it became clear that the sub-economic themes that participants highlighted for the municipal level could be categorized as globalized markets, land access, local food economy benefits, provincial funding, and resource deficits.

Local food economy benefits is a sub-theme that emerged as participants pointed to beneficial economic aspects of local food systems. Participants noted that support for local farm markets and producers can be part of an economic development strategy that directly benefits other sectors of the local economy, which can generate social benefits and build resiliency into local food systems by preserving the skill set needed to respond to market disruptions. Local food economy benefits accounted for 27% of overall responses among the four sub-themes. Of the key informants, 40% (8 of 20) identified local food economy benefits as a component of economic aspects. For example, *Respondent 14* noted that “there are opportunities in local markets with more food protection and sales [to support economic growth]... and money spent in these markets stays within the community.”

Globalized markets is a sub-theme that emerged as participants stated attitudes towards the opportunities and challenges of promoting food security in the context of the global marketplace. In one perspective, there can be resiliency in the global system

because it reduces the dependency of local communities on their local circumstances. For example, it reduces the impacts of the risks and hazards associated with local climates. However, other participants expressed that this can also have a negative impact on local food resilience as overreliance on these markets can expose communities to supply risks when there are market downturns and disruptions. Globalized markets accounted for 30% of the overall responses among the four sub-themes. Of the key informants, 45% (9 of 20) identified local globalized markets as a component of economic aspects. For example, *Respondent 7* noted that “[at times of the year we] are really relying on the global market... but resiliency is about setting up a variety of different sources so that communities can [adapt] to a localized food system [when needed].”

Land access is a sub-theme that relates to the need to preserve agricultural land while making it attainable for individuals who want to grow their own food. Participants pointed to an apparent link between population growth and the loss of farmland, suggesting that part of growth management should be ensuring that people have an opportunity to grow their own food. Land access accounted for 30% of the overall responses among the four sub-themes. Of the key informants, 45% (9 of 20) identified land access as a component of economic aspects. For example, *Respondent 10* noted that “[municipalities] should focus on making agriculture more financially viable and finding ways to help younger farmers access affordable land.”

The sub-theme of **resource deficits** was used to highlight some of the challenges of balancing food security amongst other municipal realms of responsibility given the limits on staff time and resources. Resource deficits accounted for 13% of the overall responses among the four sub-themes. Of the key informants, 20% (4 of 20) identified recourse

deficits as a component of economic aspects. For example, *Respondent 9* noted that “staff and council have a lot of [responsibilities and can’t do everything]... there may be a willingness to support [food security] actions, but there are not necessarily champions who are making it happen.”

4.10 – Main and Sub-themes: Corporate Culture

Figure 10 illustrates the predominance of the six sub-themes identified during the thematic analysis of the key informant interviews. This breakdown is based on how these themes relate to each other. Table 5 helps to further clarify these themes based on their frequency amongst the key informants, as well as their individual contexts (i.e., a rural, urban, or suburban politician or staff interviewee).

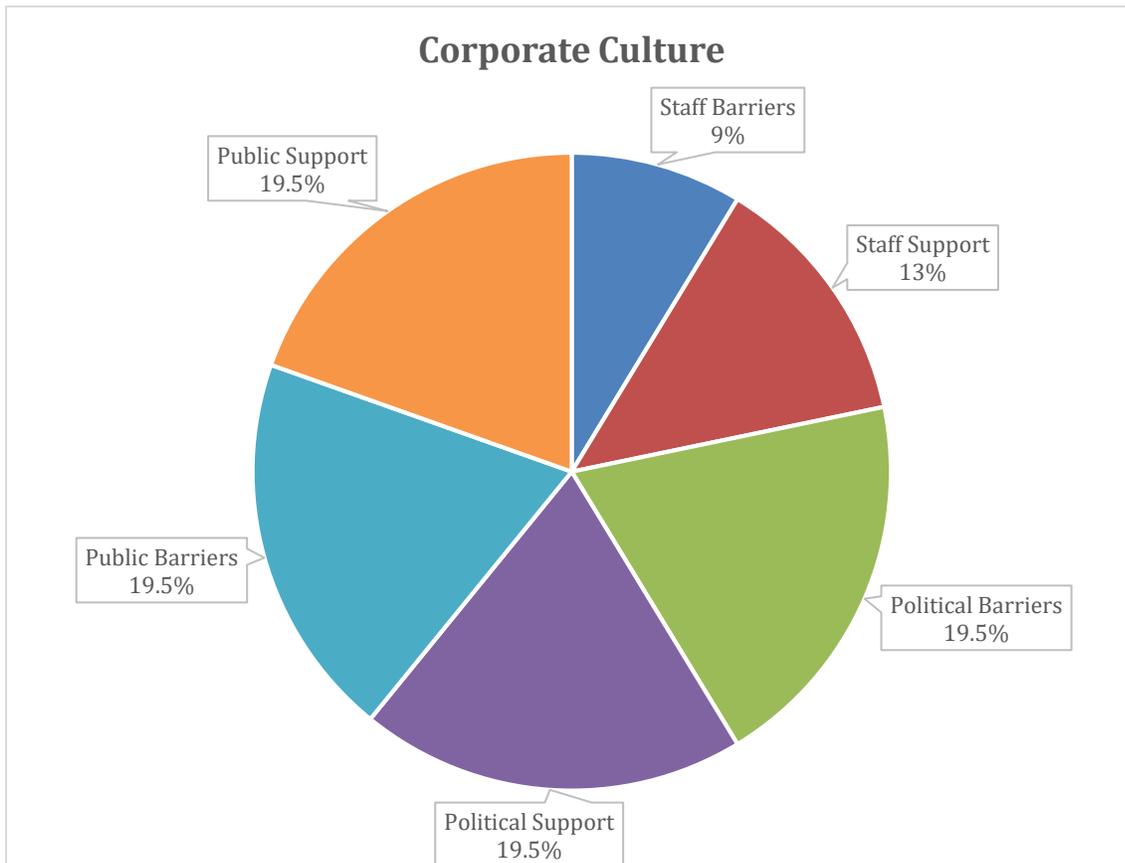


Figure 10 – Corporate Culture

Table 8 – Corporate Culture: Sub-theme Breakdown

Corporate Culture	Frequency of Responses					
	Staff	Politician	Urban	Suburban	Rural	Total
Political Barriers	3 (33%)	6 (67%)	3 (33%)	5 (56%)	1 (11%)	9 (19.5%)
Political Support	3 (33%)	6 (67%)	3 (33%)	4 (45%)	2 (22%)	9 (19.5%)
Public Barriers	4 (44%)	5 (56%)	2 (22%)	5 (56%)	2 (22%)	9 (19.5%)
Public Support	2 (22%)	7 (78%)	2 (22%)	4 (45%)	3 (33%)	9 (19.5%)
Staff Barriers	2 (50%)	2 (50%)	0	3 (75%)	1 (25%)	4 (9%)
Staff Support	5 (83%)	1 (17%)	3 (50%)	2 (33%)	1 (17%)	6 (13%)

Finally, the seventh theme, **Corporate Culture**, is intended to encompass responses that pointed to barriers or support for food security policies and actions within institutions, the political sphere, and the public realm. Research participants were directly asked about the barriers to establishing policies and actions within their own municipality, as well as whether or not they felt that their colleagues share their opinions.

Under the main theme of **Corporate Culture** (Figure 10), six sub-themes were identified in the data analysis process. During the data analysis it became clear that the sub-themes to corporate culture participants highlighted for the municipal level could be categorized as staff barriers, staff support, political barriers, political support, public barriers, and public support.

Political barriers is a sub-theme that emerged as participants pointed towards instances where they perceived a lack of political will or even resistance to food security actions by local, regional, and provincial politicians. Political barriers accounted for 19% of the overall responses among the six sub-themes. Of the key informants, 45% (9 of 20) identified political barriers as a component of corporate culture. For example, *Respondent 2* noted that when “[they] were trying to get food security into the regional

growth strategy, a number of politicians [were not familiar with the term] and [suggested that it was not related to] land use planning and transportation.”

In comparison, **political support** is a sub-theme that emerged as participants pointed towards instances where councils were supportive of food security tools and actions, particularly for councils that placed food security or food systems as a policy priority. Political support accounted for 19% of the overall responses among the six sub-themes. Of the key informants, 45% (9 of 20) identified political support as a component of corporate culture. For example, *Respondent 1* noted that “[their City’s initiatives] were a political decision to [prioritize local] food production.”

Public barriers is a sub-theme that emerged as participants pointed towards instances where public attitudes towards food security were negative or apathetic. For instance, in some suburban communities there seems to be a need for a critical mass of people who don’t have access to backyards to lobby for community gardens before it is established as a local priority. There are also potential issues when members of the public are disillusioned with the government’s ability to deliver food security objectives. Political barriers accounted for 20% of the overall responses among the six sub-themes. Of the key informants, 45% (9 of 20) identified public barriers as a component of corporate culture. For example, *Respondent 12* noted that “it is challenging for [smaller communities in] suburban landscapes... because people are dispersed throughout the community... and [without] a critical mass of people who don’t have access to backyards [initiatives like community gardens may not be successful].”

In comparison, **public support** is a sub-theme that emerged as participants pointed towards instances where members of the public clearly identified food security as an

objective, and pushed it forward by continuing to raise the issue to staff and members of council. Public support accounted for 20% of the overall responses among the six sub-themes. Of the key informants, 45% (9 of 20) identified public support as a component of corporate culture. For example, *Respondent 16* noted that “to be effective, [you must] involve the stakeholders... talk to the public and get them involved [and] they will drive it forward... politicians listen to their constituents.”

Staff barriers is a sub-theme that emerged as participants pointed towards instances where there was a lack of staff support or resources to work on food security issues. In some instances, food security hasn’t risen as a priority or is not entrenched in policy. Staff barriers accounted for 9% of the overall responses among the six sub-themes. Of the key informants, 20% (4 of 20) identified staff barriers as a component of corporate culture. For example, *Respondent 11* noted that “[it can be challenging to work in a municipal setting] because [city staff may dissuade] politicians from taking action because the direction is not supported by corporate policy... and [you’ve] got to have the policies in place to appease the bureaucrats.”

In comparison, **staff support** is a sub-theme that emerged as participants pointed towards positive staff attitudes and support for food security issues. Despite the existence of both barriers and support, the majority of responses pointed towards support. Staff support accounted for 13% of the overall responses among the six sub-themes. Of the key informants, 30% (6 of 20) identified staff support as a component of corporate culture. For example, *Respondent 6* noted that “[their] colleagues within the municipal planning field share [their] views on food security.”

Chapter 5: Discussion

5.1 – Overview

Since the interview responses were grouped into rural, urban, and suburban categories, as well as the professional and political groupings, the main themes and sub-themes discussed and contextualized in the municipal context for the case study communities may be valuable to similar contexts in other municipalities. However, further research would be needed to apply these findings to other case study communities. Each of the seven main theme groups identified in the data analysis have significance with respect to both the academic understanding of food security, as well as the implementation of food security tools/objectives within the municipal context.

The main objective of this research was to explore the boundaries and understanding of food security policies at the local government level, including tools and actions. By focusing the research on the seven main themes, I was able to group sub-themes for both existing and potential municipal actions, and illustrate what tools local governments use, as well as tools that local governments are willing to contemplate. There is also some overlap between the potential and current municipal actions.

The main deductive thematic groups have also provided an opportunity to understand the limitations municipalities face, such as economic aspects, and to identify tools that can be better implemented by other levels of government or non-profit agencies. For example, the main themes differentiate between actions that can be taken at the municipal level, and actions that can be taken at the provincial level which can affect municipalities. Furthermore, the main theme of *Municipal Advocacy & Education*

highlights ways that municipal authorities can engage with other governments or community groups.

A secondary objective of this research was to further understand the concept of food security, which may help to identify the rationale/values behind the actions municipal governments have taken to address food security at the local level. The sub-themes linked to the main deductive theme of food security provide valuable insight into how food security is conceptualized by planning professionals and political stakeholders in the municipal context. Furthermore, the differences between urban, suburban, and rural contexts is particularly useful for understanding which tools may or may not be successfully implemented within those jurisdictions. Similarly, the differences between political and staff responses may be useful for understanding which tools to promote depending on the audience.

Finally, this qualitative exploratory research provides opportunities for future qualitative and quantitative avenues of academic inquiry into the phenomenon of food security in the local government context. For example, community gardens were highlighted as a specific tool that municipal governments can use to help address food security. A quantitative study can build upon what has been reported by the key informants of this study by evaluating the effectiveness of community gardens as a tool to help bolster local resiliency. My research helps to support and expand upon the existing tools already identified by others, such as those identified by Buchan et al. (2015). Further investigation into these actions is merited. Quantitative inquiries may be able to uncover how successful these actions actually are, while qualitative inquiries can further explore the links between themes of corporate culture and municipal actions.

5.2 – Municipal Actions

The most frequently mentioned actions identified by respondents related to some form of public policy exercise. For instance, zoning and municipal plans ranked highest in terms of the overall response from key informant interviewees. These are tools that local governments can use to identify food security as a local priority in policies that guide future decision making and land use regulations. Often, public policy was pointed to as a starting point for municipal government, as any municipal strategy will be subordinate to the official community plan. An official community plan can speak to the general objectives and potential actions to address local food security priorities, while zoning regulates what can and cannot occur on particular properties to enable or disable opportunities to grow food.

As identified in Figure 11, there is some overlap between the sub-inductive themes associated with the main deductive thematic groups of *Municipal Actions* and *Potential Municipal Actions*. Where overlap exists, this highlights actions that have been taken by some municipalities and are on the radar of others. Since the data has been further broken down into urban, suburban, and rural groupings, this can help to further indicate why some actions are not utilized across the board. For example, despite 16% of the overall responses identifying zoning as a municipal action, 6% also identified zoning as a potential municipal action. Understanding the breakdown of the urban, suburban, and rural groupings is important for understanding why overlap exists. In the case of zoning, the primary focus within the *Potential Municipal Actions* thematic group comes from the suburban context, but no rural focus is given. It is possible that this difference exists because rural areas already have zoning regulations that support agricultural activities,

while urban areas typically have less access to land and more demand for food growing options that require changes to zoning regulations. In contrast, some suburban areas have zoning restrictions from the 1980s and 1990s that limit most food production opportunities in rural areas, while still providing access to larger lots than their urban counterparts. Given that suburban residents have access to land for growing food, there may be less demand on zoning changes to enable local food production.

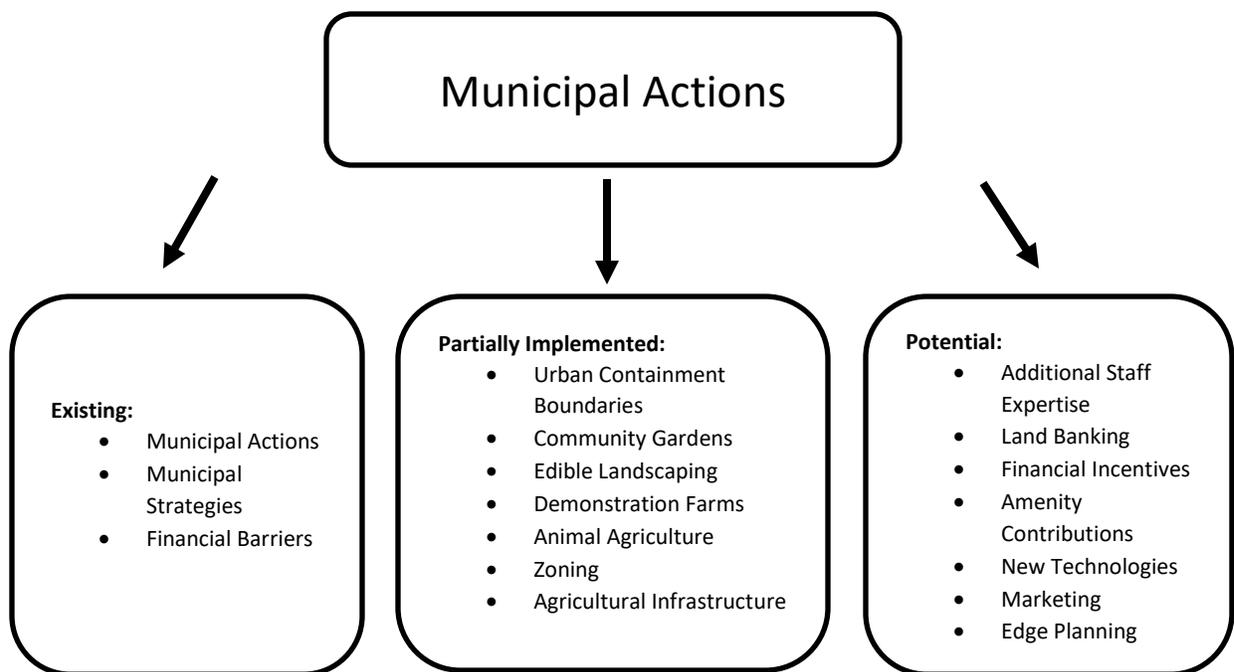


Figure 11 – Municipal Actions

It is worth noting that **urban containment boundaries, community gardens, demonstration farms, edible landscaping, animal agriculture, agricultural infrastructure, and zoning** were also identified within the municipal actions deductive thematic group. This means that of the 14 potential actions and policies, only half of the identified actions (**marketing, land banking, financial incentives, additional staff**

expertise, edge planning, amenity contributions, and new technologies) are not being used in the region. The remaining seven are not new ideas, but simply tools that have only been used in some of the municipalities in the region.

Overall, the sub-themes indicate that municipal actions to enhance local food security are similar, with different weight given to particular actions and policies based on community context. In addition, professionals tended to place an emphasis on getting the appropriate policies in place to prioritize food security goals and objectives before branching out into specific actions. In contrast, politicians tended to place an equal weight on actions. Both the political and professional informants identified an opportunity to collaborate with other governments and non-profit organizations as a way to avoid the duplication of work and services.

5.3 – Provincial Actions

The only provincial action identified by participants was the administration of the Agricultural Land Reserve, a province-wide agricultural designation that preserves farmland and restricts non-farming activities. While this is not a tool that municipal authorities have direct control over, it is a tool that impacts the viability of local farm lands, as well as local zoning and development potential.

As identified in Figure 12, key informants identified potential tools that can be better implemented by other levels of government within the Potential Provincial Actions deductive thematic group. Strengthening the ALR and providing financial support were the most frequent inductive sub-themes. Having had the opportunity to work in one of these case study communities after the initial collection of data from key informant

interviews, I have direct experience as an embedded researcher managing the various pressures placed on staff. The seven sub-themes associated with the potential provincial actions thematic group largely focus on opportunities to reduce impacts on municipal resources and providing greater protection for provincially designated farmland.

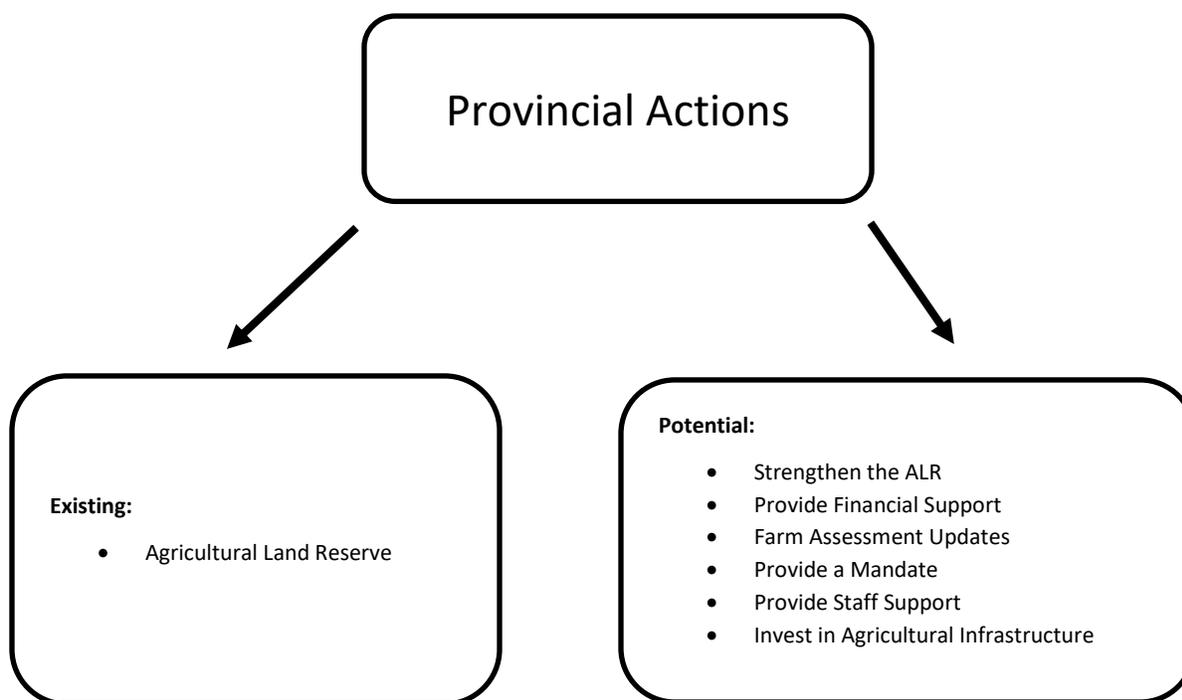


Figure 12 – Provincial Actions

Interestingly, the *Municipal Advocacy & Education* deductive thematic group is also largely focused on actions that have the effect of reducing the impacts on municipal resources by ensuring work is not duplicated in the provision of services and studies (Figure 13). The other inductive themes in this grouping are primarily focused on education, which may embolden citizens to engage other organizations or levels of government to address food security issues and alleviate pressure on of municipalities. One important observation associated with this theme is that while First Nations

partnerships were identified by key informants as an important potential partner, no direct partnerships were identified by any of the key informants in the case study communities. This may suggest that further relationship building is needed to ensure that First Nations perspectives are included in conversations about food security. Furthermore, by having an open and equal dialogue there may be opportunities for municipalities to join in dialogue on reconciliation and ensure that First Nations objectives are included in toolkits to address local food security issues (Reconciliation Canada, 2019).



Figure 13 – Advocacy & Education Priorities

5.4 – Food Security and the Global Marketplace

Key informants made it clear that local food security is largely market driven, and that there is resilience in seeking a balance of food sources, as complete reliance on one location may be both unsustainable and impractical. While many informants suggested

that the overreliance on the global market will have a negative impact on the resiliency of local food systems, others pointed out that to achieve this, there must be local incentives in place, which are largely a political decision.

It was suggested by some of the key informants that the role of the planner is not necessarily to establish a target for local food production, but rather to preserve the ability of the community to quickly respond to market forces so that local production is possible when market forces support it. Within the urban and suburban context in particular, key informants suggested that there were benefits associated with the local food economy, and noted that food security should be framed in an economic perspective to the greater public, while highlighting the social benefits that accompany it.

The potential for market failures was addressed in terms of resiliency, and informants note that some level of local production is required to maintain resilience. While some informants did not consider the notion of hazard abatement through food security useful, others noted that, generally speaking, Vancouver Island has a 48- to 72-hour food supply, and if there is an emergency or market failure, these cities do not produce enough to feed their populations. While the urban centers are dependent on the global market to be resilient, some key informants suggested that there is also resiliency in being part of a global system that ought to be taken into account, as foreign markets can help local communities to overcome climatic limitations.

5.5 – Framing ‘Food Security’

Interestingly, the sub-themes associated with ‘Food Security’ were shared across the rural, urban, and suburban municipalities, as well as the professional and political spectrums. However, it is clear that different priorities exist for different contexts.

This may provide a strategy for pursuing food security goals and objectives in environments that are critical of the concept. Several interviewees were critical of the term ‘food security’ during the interview process, noting that food security may be a manufactured political issue ranking low when compared to pressing issues like affordable housing and transportation. Notwithstanding this criticism, several of these respondents identified tools and actions they had implemented based on one of these sub-themes.

One of the key informants explained that part of the reason ‘food security’ can be a challenging topic is that it can be framed in multiple ways.

According to several of the participants, the reality of public policy is that planners are constantly reframing issues to help draw the link between municipal policies and actions to broader municipal goals and objections. This suggests that food security objectives can be achieved under the lens of ‘health and wellbeing,’ or other sub-themes identified during this investigation, by making the links between the two clear to the public.

Chapter 6: Conclusions

6.1 – Key Findings

6.1.1 – Operationalizing ‘Food Security’

As indicated during the literature review, food security research has largely focused in academic circles on the dimensions of public health, poverty, low-income individuals, food production, food distribution, and food safety (Collins et al., 2014; Wekerle, 2004), and does not clearly identify the role of local government in practice (Pothukuchi et al., 2007). To better operationalize the concept of food security in the municipal context, researchers should understand how politicians and bureaucrats perceive this concept in the context of their work.

Through the process of interviewing key informants within local government, sub-themes were identified that expand on the concept of food security. These sub-themes include dimensions of resiliency, food sovereignty, food systems, cultural and emotional, health and wellbeing, affordability, environmental wellbeing, and sustainability. The dimensions already identified in the literature have made the concept of ‘food security’ difficult for some practitioners and politicians to support as it is a complex and nuanced idea that extends beyond basic food accessibility and poverty reduction. The sub-themes identified through the key informant interviews help to contextualize food security by highlighting the key objectives municipal planners and politicians associate with it. This can be valuable for future research as these sub-themes can help frame the scope of research. For example, future studies on the effectiveness of community gardens could contextualize their findings within the context of local resiliency.

There is also value in identifying how the objectives of planners and politicians can align with the sub-themes identified in this research, as this can help to frame food security in a way that could be acceptable to a planner or politician who views food security as a cultural or manufactured issue. For example, some key informants only identified food security as an issue of affordability and access, noting that individuals who have rallied behind food security in a more general context may be doing so for cultural reasons because it is trendy, or through a desire to achieve food sovereignty for emotional reasons. Notwithstanding these criticisms, key informants who expressed skepticism towards the importance of food security within the context of local government were also supportive of the actions other municipalities had taken to achieve food security goals, and could even cite examples from their own jurisdictions. However, the objectives/rationale they cited for these actions were linked to the sub-themes under the deductive food security thematic grouping. In these circumstances, it may be worth avoiding the term 'food security' and focusing on the sub-themes that may be better received and will still allow for food security objectives to be met.

In a general sense, food security is recognized to exist when all people at all times have access to sufficient, safe, and nutritious food so that they can maintain a healthy and active lifestyle (FAO, 2019). This definition can be further refined at the individual, household, neighbourhood, and community levels. The sub-themes identified in this research help to refine the concept of food security at the community level. It would appear that food security is achieved at the community level when all citizens have the ability to access safe and nutritious food at all times from both local and foreign sources. Furthermore, to be secure at all times, communities must also have the capacity to shift

between local and foreign sources so that they can respond to market fluctuations and natural hazards. Additionally, the mechanisms by which communities maintain their food secure status can result in a variety of other social, environmental, and economic benefits realized at the local level.

6.1.2 – Urban, Rural, and Suburban Approaches to Addressing and Understanding Food Security

Due to the classification of key informant responses, the sub-themes were gauged generally, but could also be broken down based on the urban, suburban, or rural context, as well as the status of the key informant as a politician operating in local government, or a professional employed by a local government. While there is a clear overlap between the different priority areas within the main theme of food security, as well as similarities in the types of actions and policies that have been proposed to meet these priorities, different actions/priorities are weighted differently in different contexts.

Table 9 illustrates the differences between urban, suburban, and rural responses, as well as the differences between staff key informants and politician key informants with respect to the concept of food security (Table 2, Section 4.4), and shows how frequently the different sub-themes occurred between these different groups, and ranks them in order of most frequent to least. This table highlights examples of the municipal actions identified by the key informants (Table 3, Section 4.5).

The findings suggest that there is no uniform approach to deal with food security issues. Rather, solutions must be tailored to their communities; however, there are common sub-themes. These findings identify the themes and tools that may be better suited/received in different communities based on their urban, rural, or suburban

context. This can serve as a basis for facilitating discussions within the community by planning practitioners and elected officials. This is an important finding as it reflects the gap in the literature. While the primary focus has been on urban solutions, the interrelationship between urban, rural, and suburban communities must be explored when addressing food security. Some urban solutions may not be appropriate in suburban and rural contexts, and the suburban and rural communities tend to be the holders of significant tracts of agricultural land.

Policy makers and politicians can utilize these findings (Table 9) to guide how conversations about food security are framed, both within their organizations and to the general public. This also allows them to identify priority actions based on their status as an urban, rural, or suburban community. These actions are largely centered around policy creation, removing regulatory barriers, leading by example through projects and initiatives, and supporting organizations that already do work in this area. These findings may also help researchers to clearly relate their own research to the broader themes linked to food security, and highlight the actions best suited for their target communities.

Table 9 – Priority Actions in Urban, Rural, and Suburban Contexts

Priorities		
Context		
	<i>Staff</i>	<i>Council</i>
Framing the Issue (what objectives are we hoping to achieve?)	<ul style="list-style-type: none"> • Sustainability (7) • Affordability (7) • Resiliency (6) • Health & Wellbeing (6) • Food Systems (5) • Food Sovereignty (5) • Cultural (3) • Environmental (2) 	<ul style="list-style-type: none"> • Sustainability (8) • Resiliency (8) • Health & Wellbeing (8) • Food Sovereignty (8) • Affordability (7) • Environmental (5) • Cultural (4) • Food Systems (2)

<i>Urban</i>	<i>Suburban</i>	<i>Rural</i>
<ul style="list-style-type: none"> • Health & Wellbeing (7) • Affordability (6) • Resiliency (6) • Sustainability (5) • Food Systems (4) • Cultural (4) • Food Sovereignty (2) • Environmental (3) 	<ul style="list-style-type: none"> • Sustainability (7) • Resiliency (5) • Health & Wellbeing (5) • Food Sovereignty (5) • Affordability (4) • Environmental (2) • Food Systems (2) • Cultural (0) 	<ul style="list-style-type: none"> • Food Sovereignty (6) • Affordability (4) • Sustainability (3) • Resiliency (3) • Cultural (3) • Health & Wellbeing (2) • Environmental (2) • Food Systems (1)
Expanded Local Government Tools and Roles for Supporting Local Food Production		
Municipal Policies & Actions (listed in order of importance in the urban context)	<ul style="list-style-type: none"> • Remove zoning barriers • Support community gardens • Enshrine in municipal plans • Include in municipal strategies • Utilize urban containment boundaries • Remove financial barriers • Utilize edible landscaping • Enhance agricultural infrastructure • Support demonstration farms • Increase opportunities for animal agriculture 	
Municipal Policies & Actions (listed in order of importance in the suburban context)	<ul style="list-style-type: none"> • Enshrine in municipal plans • Remove financial barriers • Enhance agricultural infrastructure • Include in municipal strategies • Remove zoning barriers • Support community gardens • Increase opportunities for animal agriculture • Utilize urban containment boundaries • Utilize edible landscaping 	
Municipal Policies & Actions (listed in order of importance in the rural context)	<ul style="list-style-type: none"> • Enshrine in municipal plans • Remove zoning barriers • Enhance agricultural infrastructure • Increase opportunities for animal agriculture • Support community gardens • Remove financial barriers • Utilize urban containment boundaries • Utilize edible landscaping 	

6.1.3 – Expanded Tools and Roles for Supporting Local Food Production

In addition to identifying how priorities and tools vary in different contexts, the key informant interviews also provided an opportunity to identify additional tools and roles local governments can use to support food production (Table 10). This table summarizes the sub-themes associated with municipal actions (Table 3, Section 4.5), potential municipal actions (Table 4, Section 4.6), and municipal advocacy & education (Table 5, Section 4.7). These findings expand on the framework for categorizing local food production tools provided by Buchan et al. (2015).

This framework for categorizing local food production and the associated list of examples provided by Buchan et al. (2015) was expected to expand and evolve over time (Appendix 5). My findings add to Buchan’s list, provide guidance on which tools and roles are more likely to be prioritized in different contexts, highlights options for framing goals and objectives, and contextualizes how planning practitioners and politicians conceptualize food security. Policy makers can use these findings to identify what actions should be considered for their community, and provide guidance on how those actions should be framed in policy documents and during public outreach.

These findings build upon Buchan et al. (2015); however, my research is substantially different. *Local Food System Planning: The Problem, Conceptual Issues, and Policy Tools for Local Government Planners* (Buchan et al., 2015) provided an overview of the emergence of local food system planning topics in academic literature, described the importance of addressing food system issues, highlighted tools identified in academic and grey literature, and contextualized these tools with policy examples and actions from North Saanich, Vancouver, Kelowna, and Campbell River. The work of Buchan et al. is

useful as a reference for tools known in 2015. My work with key informants has identified additional tools (Table 10) that builds upon Buchan et al.'s work, while also identifying how food security is conceptualized by public servants and elected officials.

Table 10 – Expanded Local Food Production Tools
(adapted from Buchan et al., 2015 – See Appendix 5 for original)

Tool Category	Local Government Tools and Roles for Supporting Local Food Production in the Capital Regional District
1. Provide Resources (funds, land, facilities, and support staff)	<ul style="list-style-type: none"> • Land banking • Food banks • Provide land reserved for livestock grazing • Food policy taskforce • Commercial kitchens • Provide/support staff training • Community forums/dialogues • Municipal partnerships and resource sharing
2. Undertake Projects and Programs	<ul style="list-style-type: none"> • Wildlife management (i.e., deer, geese, and invasive species) • Edible landscaping • Food forests • Local marketing programs/initiatives
3. Advocate and Facilitate	<ul style="list-style-type: none"> • Collaborate with health authorities • Promote new technologies • Hydroponics • Collaborate with the Agricultural Land Commission • Collaborate with school districts • Collaborate with First Nations
4. Regulate and Establish Policy	<ul style="list-style-type: none"> • Animal control bylaws (chickens, bees, goats, pigs, etc.) • Development variances (rooftop greenhouses, farm buildings, etc.) • Reduced water rates for farmers • Parkland development cost charges • Edge planning (farmland buffers) • Urban containment boundaries

6.1.4 – Progress Traps and the Free Market

As indicated in the literature review, ‘progress traps’ occur when societies become over-dependent on a singular resource (or method of obtaining it), which inevitably prevents further progress and can lead to collapse (Wright, 2004). There was a clear

consensus that the urban, suburban, and rural case study communities are all reliant on foreign markets to meet local food needs, and that access to healthy and secure food in the face of a disaster or disruption is a public good. It was understood that a disaster such as a major earthquake could disrupt supply chains, and that living on an island adds an additional exposure to vulnerability. However, other factors, such as the fluctuating price of oil, impacts of climate change, exposure to foods from sources with less stringent food safety and environmental standards, may also result in disruptions. As it currently stands, the case study communities are not self-sufficient or even regionally sufficient if there was a need to shift from foreign markets to local ones.

While arable land that is converted to housing or industrial land is not impossible to convert back to farmland, it is not without its costs and does not allow for flexibility in the face of a disruption. Increased local food production was cited as a priority to embed local resiliency and avoid the progress trap of overreliance on the global marketplace. However, it was recognized by most that a balance of local and foreign sources was ideal, as this enables communities to respond to both local and foreign disruptions. In fact, key informants who were critical of food security movements highlighted the inherent resiliency of having access to multiple markets as opposed to just one. Food sovereignty has the ability to build local resilience in response to foreign market disruptions, but an overreliance on local food sources would also constitute a progress trap as local climatic and social disruptions have the potential to disturb local production. These findings would suggest that there should be some discussion on how much local production capacity should be enabled so that communities can easily shift from foreign to local markets depending on the types of disruptions they face.

It is worth noting that the key informants who expressed skepticism towards food security advocacy largely viewed 'food security' as an emotional/cultural movement to be self-sufficient in local food production that may stem from a desire to move away from a capitalist system of production and distribution. The findings demonstrate that food security has links to other themes that can be justified as being within the public interest. However, policy makers who are interested in achieving food security objectives should be mindful of this criticism, and clarify that the goal of resiliency is to avoid overdependence on any one source, foreign or local.

6.1.5 – Shared and Diverging Sub-themes

One key finding is that community resiliency is inherently linked to food security. Without some level of local production, communities are left vulnerable to hazards should disruptions occur. Neither staff nor politicians were value-neutral on this subject, with most citing food security as a component of the public interest.

As shown during the analysis of the Municipal Advocacy & Education sub-themes (see Section 4.7), planners tended to put a greater emphasis on policy under the main theme of 'municipal actions,' while politicians put a similar emphasis on actions and policies. However, in terms of municipal advocacy, staff tended to place a greater emphasis on partnering with other organizations and local governments to establish food security objectives.

While many of the sub-themes linked to food security could be argued as being part of the public interest for which planners are responsible for upholding, the presence of the 'cultural theme' suggests this view is not universally held.

6.2 – Areas for Future Research

These findings have identified tools and actions that local governments can use, and roles they take to address the issue of food security. The findings also highlight how food security is understood in the urban, suburban, and rural municipalities that were studied in this research. Both existing and potentials tools that can be utilized at the local level have been identified. The rationale/values behind these methods have been identified as sub-themes, which can be linked to broader municipal objectives and goals and broaden an understanding of ‘food security’ at the municipal level. Future research can add to the list of municipal tools and roles, and further refine the sub-themes linked to food security.

According to the experts and key informants who create and oversee public policy, these actions, if effectively implemented, can help communities to respond to market distortions and the impact of urbanization by building local resiliency and helping communities avoid progress traps. These findings have helped to better identify the differences between urban, rural, and suburban contexts.

The qualitative nature of this investigation is also not without limits. Effective tools were identified based on the experiences and opinions of experts and politicians involved in the planning profession. Efficiency indicators have not been quantified, as this was outside the scope of the key informant interview format. Further quantitative research is required to gauge the actual efficiency of the tools and policies identified by key informants so that policy makers can identify which tools are most effective, in addition to the guidance these findings provide in identifying how objectives should be framed, and which tools are more likely to be effective based on the community context. A further limitation is the relatively small sample size of participants.

These findings may be relevant to local governments beyond the case study communities within Canada. With global populations expected to reach nine billion by the year 2050 (Branca et al., 2013), this means that under optimal conditions 4,716,000,000 hectares of farmland is required to meet the global demand based on the BC Ministry of Agriculture and Lands (2006) estimate of 0.524 hectares per person. Already, more than one billion people are undernourished (Neff et al., 2011). A combination of flexible local and foreign market access is needed to ensure that communities can maintain resilience in the face of local and global disruptions, so that they can avoid progress traps and meet the basic needs of citizens.

This thesis describes how food security is conceptualized at the local government level, and how municipalities are addressing these issues through policy and action. It is my hope that this research will be of value to the planning practice and provide new avenues for academic inquiry. My research has contributed to the academic and theoretical understanding of food security by building upon the work of others in identifying tools that local governments do and can use to address food security in the urban, rural, and suburban context. Additionally, my work helps to contextualize food security in the municipal context by highlighting how food security is framed and understood by politicians and planners in the urban, rural, and suburban context. The sub-themes identified in Section 4.4 of this thesis can be used to operationalize the concept of food security within the municipal context, and may help planning practitioners to better understand the goals and objectives of food security policies and actions. While my findings are limited to the case study communities, further research in other case study communities can build on the themes identified in my work.

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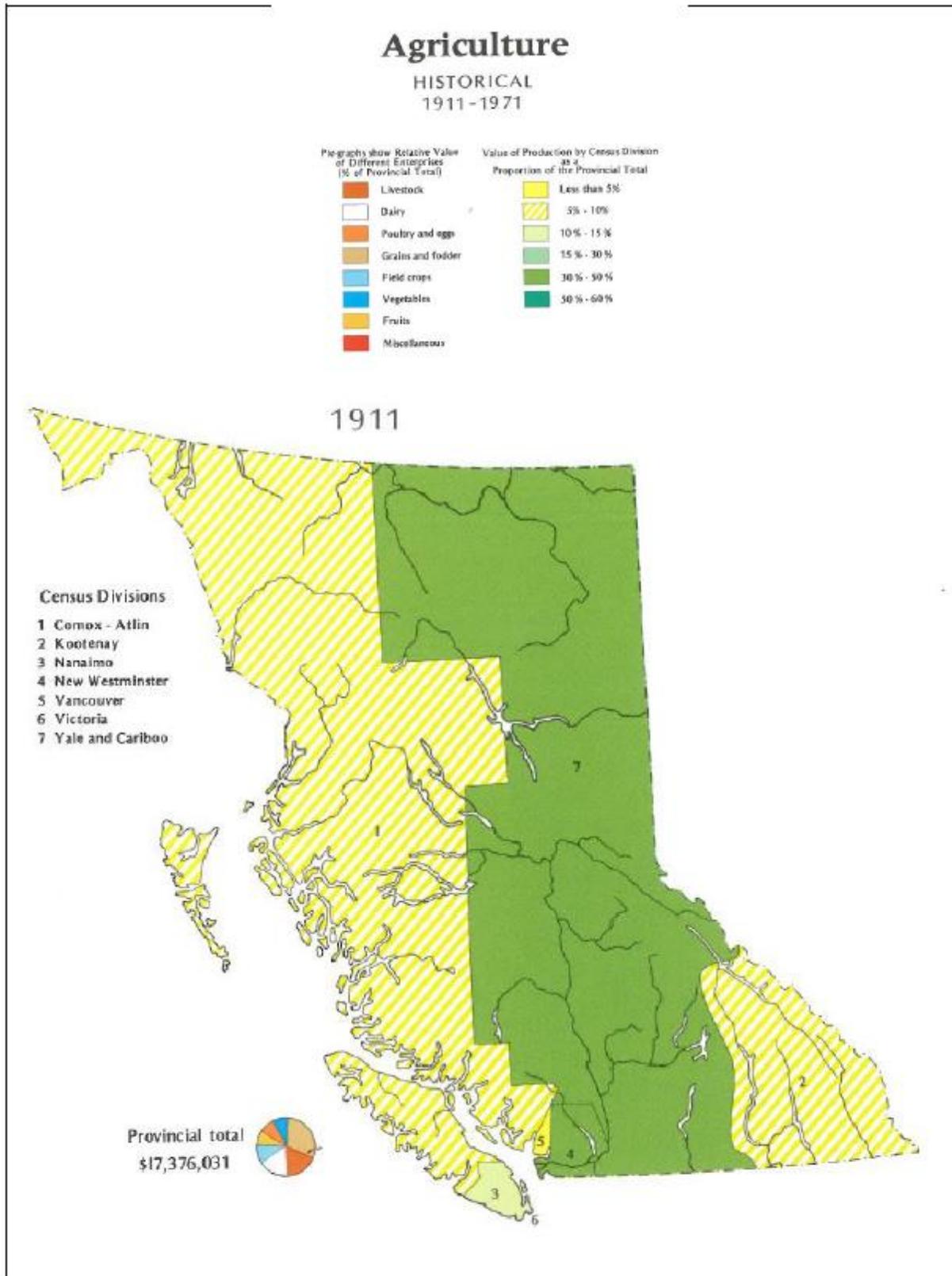
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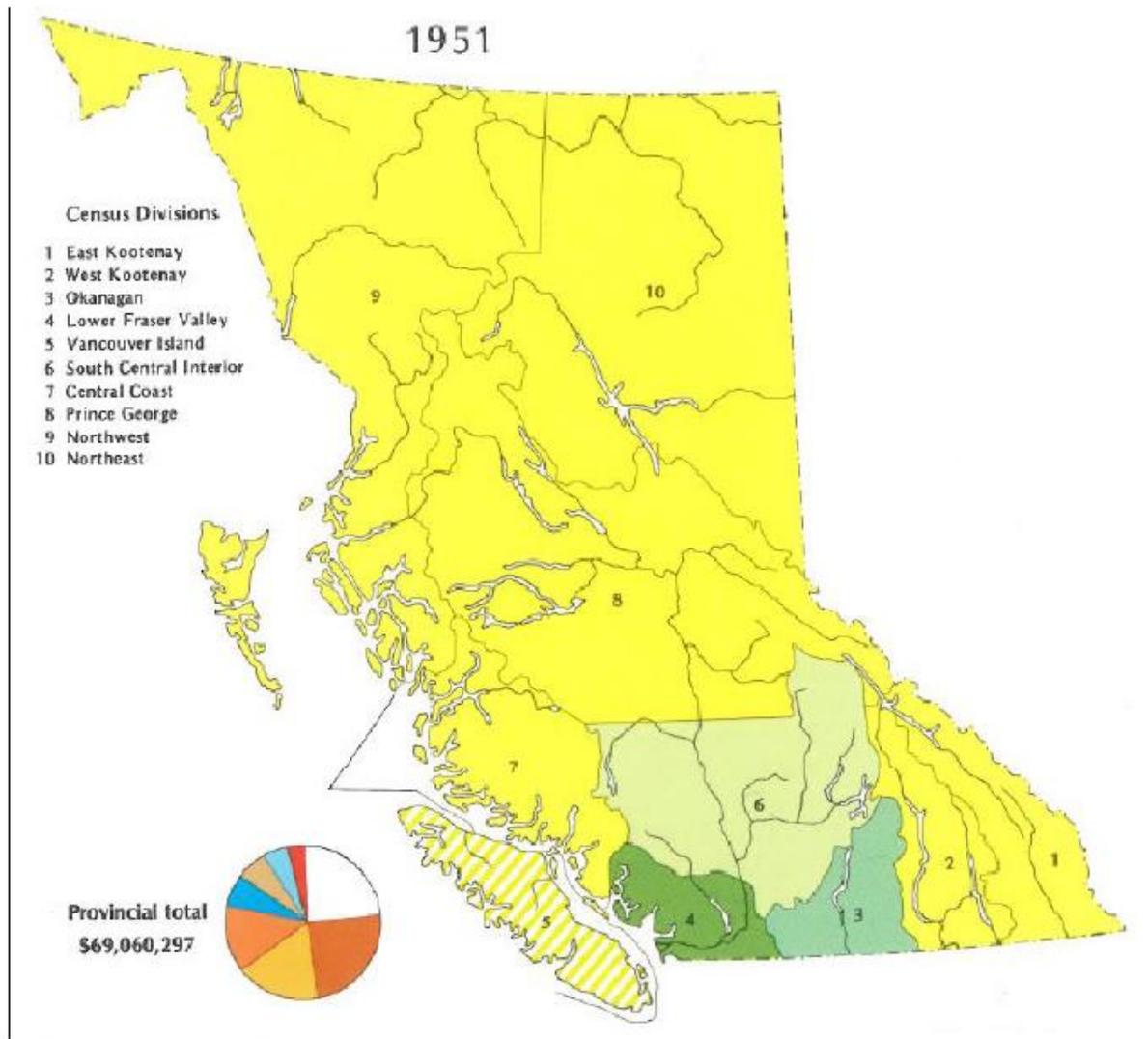
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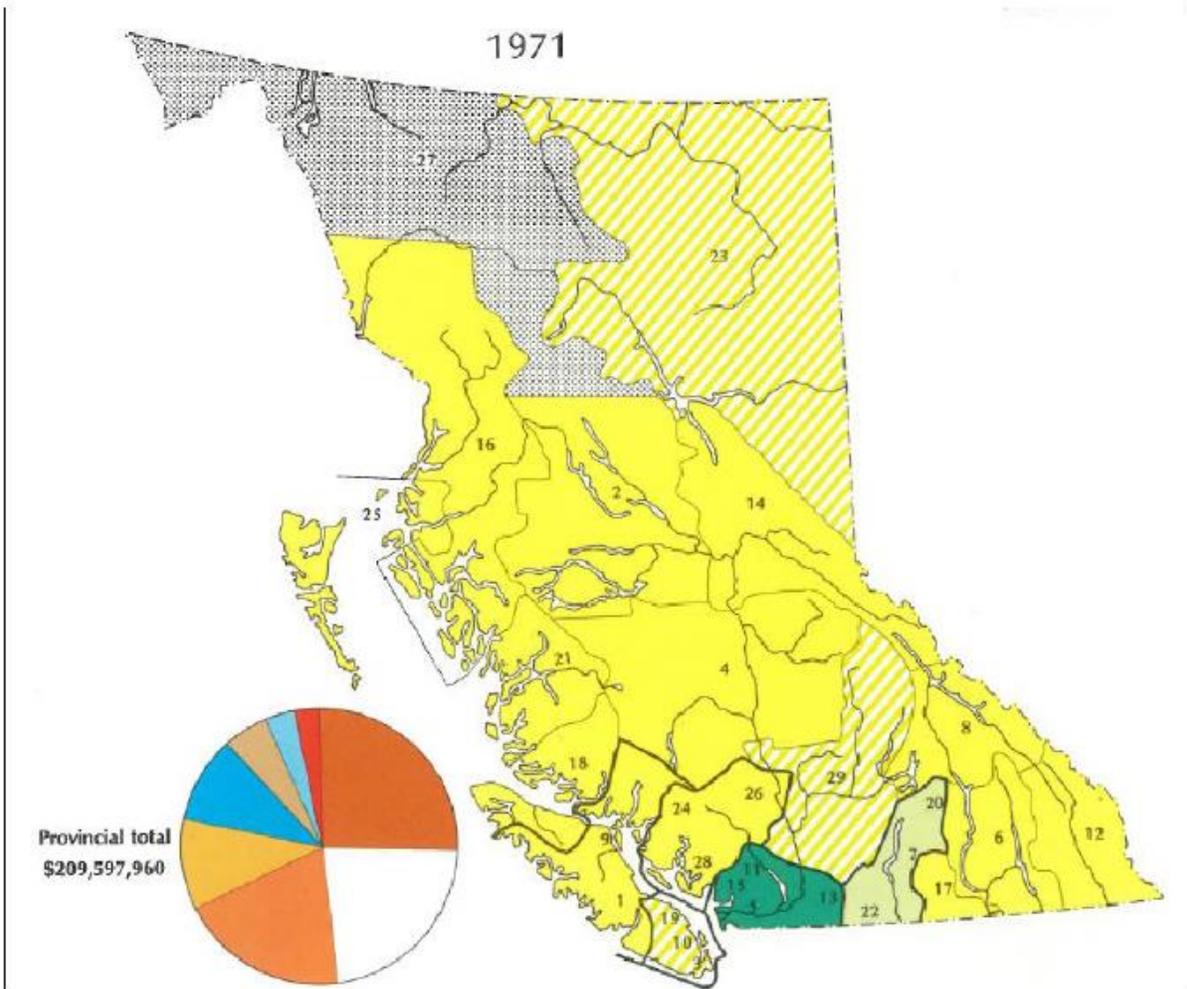
Appendix 1 – Historical Agricultural Land Use in the CRD



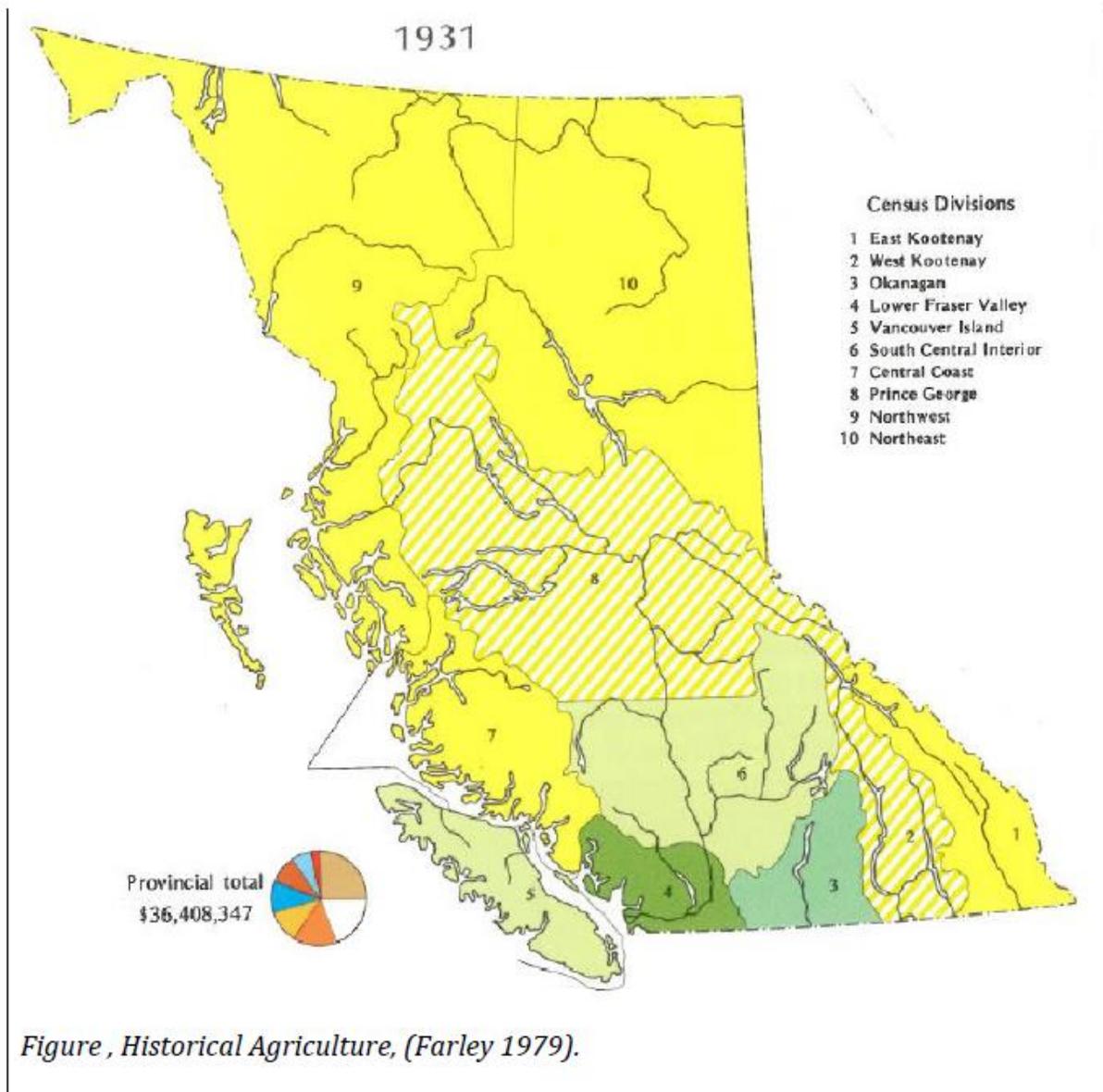
Appendix 1 – Historical Agricultural Land Use in the CRD



Appendix 1 - Historical Agricultural Land Use in the CRD



Appendix 1 – Historical Agricultural Land Use in the CRD



Appendix 2 – Interview Questions

PROTOCOL

Good afternoon and thank you again to agreeing to participate in this study. If at any time you aren't comfortable with the questions we can bypass them or end the interview.

I'm interested in how both staff and politicians interpret and address food security issues in the CRD, the link between policies and action, and how food security ties into the greater picture of the 'public interest'

There are no wrong answers but rather differing points of view. Please feel free to share your point of view even if it differs from what others have said. I'm just as interested in negative or critical comments as positive comments and at times the negative comments are the most helpful.

1. To start out, how do you understand the term "food Security" in the municipal context?
 - a. Probe: Do you feel that this opinion is shared between your colleges
 - b. Probe: This differs slightly from the definition I've provided. Are there any novel ideas in that?
 - c. Do you feel that Food security is important at the municipal level and that cities should address it?
2. Has your Municipality created any policies that address, or touch on food security? (why)
 - a. Probe: What sort of actions were identified? Have these been successful?
3. With or without a policy, has your municipality introduced any methods that directly or indirectly address food security issues?
 - a. Are there more methods that could be introduced?
 - b. Are there barriers to these methods
 - c. In terms of implementation, has your municipality created implementation metrics?
 - d. Have these methods been successful?
4. Do you see any legislative (local government act) or provincial mandate to address food security issues?
 - a. Where do you get your mandate?
 - b. Are there things that could be improved from the province (DCC's)
 - c. As a planer, is there anything in the Code of Ethics and Professional Conduct that could provide a rationale for food security planning?
 - d. As a politician, where do you personally get your mandate for addressing food security issues?
5. What would you recommend to other cities that are considering creating food security policies?
 - a. Are there other examples in the CRD or other BC communities that you'd point to as 'good examples'?
 - b. Are there key partners local governments should consult?
 - c. Policy statements and values that support food security
6. Did we miss anything?

Appendix 3 – Recruitment Process

Recruitment Process for Richard Buchan's Masters Thesis.

City Planners and politicians from each municipality will be contacted based on their expertise/insider knowledge on the subject of Food Security. A minimum of two key informants from each of the 13 member municipalities of the Capital Regional District will be targeted for qualitative interviews, and snowball sampling will be explored during the interviews.

Draft of Anticipated Language:

Dear _____:

I am a Masters Student in the School of Planning from University of Waterloo (Ontario). I am focusing my thesis research to the Capital Regional District (CRD) and its member municipalities in an effort to understand how local government has enhanced food security throughout the region.

Food security is a complex sustainable development concept that encompasses the availability of- and access to- healthy nutritional food at all times. This includes the individual, household, neighbourhood, and community level. In the context of a dynamic global market that is susceptible to downturns, collapses and disruptions, food security requires some level of local production capacity to ensure that communities are resilient.

I am interested in discussing the various actions and policies your municipality has made that relate to food security issues, as well as the logical links between policy and action. If you are interested in participating, please contact me directly by phone or email to set up an interview.

Thank you in advance for your cooperation, I look forward to keeping everyone informed as the project progresses. If you have any questions or concerns don't hesitate to contact me.

This project has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee. However, the final decision about participation is yours. Participants who have concerns or questions about their involvement in the project may contact the Chief Ethics Officer, Office of Research Ethics at 519-888-4567, Ext. 36005 or Maureen.nummelin@uwaterloo.ca.

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Appendix 4 – Local Government and Food Security Survey

Local Government and Food Security Survey

Please rank the following questions and statements on a scale of 1 – 5:
 (1) Strongly Disagree, (2) Disagree, (3) Neutral, (4) Agree, and (5) Strongly Agree

1. "Council is typically supportive of food security initiatives."	1	2	3	4	5
2. "The protection of agricultural land has been identified as a strategic priority."	1	2	3	4	5
3. "Council has limited development on agricultural land beyond what the ALC requires."	1	2	3	4	5
4. "There is political leadership on food security challenges."	1	2	3	4	5
5. "Council recognizes that access to food is a part of the public interest."	1	2	3	4	5
6. "We have identified food security as a <i>community resiliency</i> ¹ factor."	1	2	3	4	5
7. "Food security is understood by Council as a vital component of sustainability."	1	2	3	4	5
8. "Our municipality provides residents with sufficient resources that address food security issues."	1	2	3	4	5
9. "There is support for people within the City or on Advisory committees who advocate for local food security."	1	2	3	4	5
10. "There is enough local food production to meet our community's needs."	1	2	3	4	5
11. "Municipal funding has been committed to staff to address food security issues."	1	2	3	4	5
12. "We have supported staff training on food security issues (such as access to food, local supply/production, food availability, etc.)."	1	2	3	4	5
13. "Our policies identify food security as a priority."					

¹ *Community resilience is a measure of the sustained ability of a community to utilize their resources to respond to, withstand, and recover from adverse natural or man-made disaster/emergency situations (rand.org).*

Appendix 4 – Local Government and Food Security Survey

	1	2	3	4	5
14. "Our land use regulations facilitate local food production and processing."	1	2	3	4	5
15. "Our development approval policies encourage the protection of aboriginal food sources."	1	2	3	4	5
16. "Our community has a comprehensive food security policy."	1	2	3	4	5
17. "We have identified policy barriers that impede food security."	1	2	3	4	5
18. "Our municipality maintains a good working relationship with agricultural interest groups (such as farmers associations and NGOs)."	1	2	3	4	5
19. "Actions and strategies identified in our policies have been implemented to address food security issues."	1	2	3	4	5
20. "We have developed sufficient food security indicators to track progress in our community."	1	2	3	4	5
21. "Our municipality has provided adequate space and signage for farmers markets."	1	2	3	4	5
22. "Our citizens have identified food security as an important issue."	1	2	3	4	5
23. "Our community has lost agricultural resources as a consequence of development."	1	2	3	4	5
24. "We have removed barriers to food insecurity within our community."	1	2	3	4	5
25. "Food Security has been an important election issue."	1	2	3	4	5
26. "We are aware of the number of residents in our community who are not food secure and are dependant on social or charitable assistance like food banks."	1	2	3	4	5

Appendix 5 – Local Food Production Tools and Roles (Buchan et al., 2015.)

Appendix 5 – Local Food Protection Tools and Roles

Tool Category	Local Government Tools and Roles for Supporting Local Food Production
1. Provide Resources (Funds, land, facilities and support staff)	<ul style="list-style-type: none"> • Food Policy Council • Rent Subsidies (for land or facilities) • Provide land for community gardens and other urban agriculture • Food Hubs • Farmers Markets • Farmer Forums • Farmland Trust
2. Undertake Projects and Programs	<ul style="list-style-type: none"> • Community Gardens • Agricultural Development Commissions • Food Waste Recovery and Composting • Demonstration Gardens • Food Mapping/Community Food Assessments • Farmland Trust • Agricultural Extension (For conventional and urban farming) • Wildlife Management
3. Advocate and Facilitate	<ul style="list-style-type: none"> • Rooftop Gardens • Education and Promotion • Municipal Agricultural Website • Development of a Local Food Market • Agri-Tourism Investment • Food Access Considerations • Good Food Box Programs • Community Supported Agriculture • Edible School Gardens • Vertical Gardening • Backyard Aquaculture • Farmers Markets • Senior Government Funding
4. Regulate and Establish Policy	<ul style="list-style-type: none"> • Zoning/Land Use Bylaws (Urban Agriculture) • Progressive Agricultural Zoning (Value Added Farm Activities) • Animal Control Bylaws • Density Bonus Bylaws • Development Permit Areas and Guidelines • Food Security Bylaw • Right to Farm Legislation • Food Security Assessments and Strategies • Food and Agriculture strategies • Agricultural Economic Development Strategies • Food Procurement Policies • Business License Bylaws (for selling produce/market gardens) • Farm Friendly Sign Bylaws • Consult with Knowledgeable people during plan and policy research • Farmland Preservation • Comprehensive Plans (Official Community Plans, Agricultural Area Plans, and Neighbourhood Plans) • Tax Break/Incentive Bylaws • Food Charters

Sourced from: Buchan et al., 2015