

Exploring Food Insecurity in Rural Ontario – Food Systems & Community Based Responses

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August 2022

A Major Research Paper presented to the University of Guelph

Submitted in partial fulfillment of the requirements
for the degree of
Master of Science
in
Planning

Guelph, Ontario, Canada

Abstract:

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Rural communities exemplify the innovative strategies that can be implemented at the local level to combat issues of inequity like food insecurity. Community based responses can influence implementation of efficient food systems. Through innovation, education, agricultural practices, community based social services, and local policy, rural communities have the potential to bring awareness to community needs and limitations when it comes to food. As well as expose gaps and barriers to food security and food sovereignty within the community. Many rural communities experience deteriorating infrastructure and many studies have indicated that these communities have significantly lower health status comparatively to urban residents. A contributing factor to poorer health status and wellbeing is food insecurity. Food insecurity is a social determinant, it is relational to socioeconomic or sociodemographic status which factors in housing and employment status. The need for accurate assessment of food insecurity at the provincial and municipal level is crucial to understand the underlying reasons for food insecurity; this will also provide insight on how to mitigate and develop efficient food systems plan within provincial and municipal infrastructures.

Through the perspective of seeing food as human right, an in-depth thematic analysis of academic and grey literature (government documents, newspaper articles, etc), as well as case study research will be used to highlight the several key themes and relationships of how local communities are using community-based responses to combat food insecurity and maintain a healthy community. As well as how these strategies may have potential to inspire a universal need for food systems planning to be integrated into planning frameworks at higher levels of governance. Food security has become a socioeconomic issue rather than a result of malfunctioning food systems. Food insecurity has the potential to be eradicated if national food policy aims to promote healthy living across the country, the only way that can happen is if food insecurity is seen as a human right rather than a consequence of inequity. Without an efficient food system, as well as acknowledgement that food insecurity is still a rampant issue, communities will continue to be at a place of uncertainty and insecurity in regard to their food.

Acknowledgements

Firstly, I would like to thank Dr. Ryan Gibson for giving me perspective when developing this research, as well as constant support when at times of uncertainty. I would also like to thank Dr. Leith Deacon for being part of the advisory committee.

This research would not have been possible without the vast wealth of knowledge put forth by brilliant scholars and members of academia. I would like to acknowledge my family and friends for putting the necessary pressures on me to complete this research and to remind me to be less critical of myself. I recognize that I am in a place of privilege to develop this research and put forth these ideas into a pool of people that are far more talented than I.

Thank you all.

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1. Introduction

There is substantial societal dependence on food, though a necessity, food is often dismissed as an issue of private interest. This positionality is one of the reasons why the issue of food insecurity still exists. In Canada, it is often assumed that hunger or lack of accessibility to food are not issues that occur because of the development and economic wealth of the country. To highlight, despite the economic wealth, approximately 1 in 8 Canadians reported household food insecurity (Polsky & Gilmore, 2020; Tarasuk & Mitchell, 2020). Figure 1 provides statistical percentages of food insecurity experienced by different provinces and territories. It should be noted that some data is missing because not all provinces measured food insecurity among their populations (Polsky & Garriguet, 2022). As this is not a complete representation of food insecurity, there could be additional communities underrepresented regarding this issue. This is a problem because food insecurity is prevalent in every province and territory with the highest rates in the northern parts of the country, as in the northern territories with 57% reporting food insecurity, highlighted in 2018 in Figure 1 (Statistics Canada, 2018). Food insecurity is also a serious problem in Indigenous communities, although the extent of food insecurity among Indigenous communities is not well understood as data is not collected in the primary food insecurity data sets, which is the Canadian Community Health Survey (Dachner & Tarasuk, 2018). This leads to substantial gaps in knowledge; measurement of food insecurity needs to be more accurate to acknowledge the full scale of the issue.

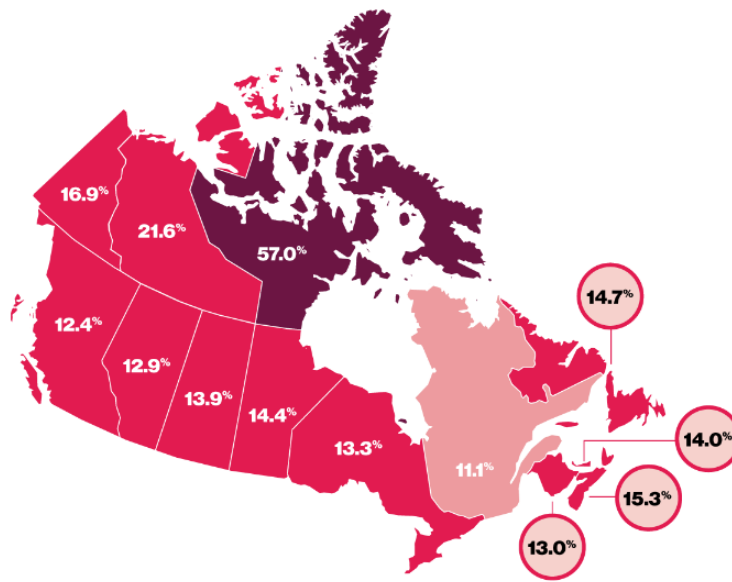


Figure 1: Food Insecurity by Province and Territory (Tarasuk & Mitchell, 2020; Statistics Canada, 2018)

As Canada industrialized, neoliberal policies like globalization, privatization, commodification, and self-regulation were adopted (Guthman, 2008). These neoliberal policies have emphasized the restricted eligibility for social services and targeted social programming (Riches & Silvasti, 2014). The erosion of social programming and the consequences of neoliberalism has created several systemic gaps and inequitable circumstances; food insecurity is a result of inequity. These issues surrounding food have become classified as socioeconomic challenges, rather than a result of malfunctioning or inefficient food systems. Hunger has become an increasing concern in Canada (Tarasuk et al., 2014). Globalization has created contemporary food systems to become increasingly focused on capital gain and has created a loss of food sovereignty (Sage, 2014; Weiler et al., 2015). Globalization has threatened food sovereignty because most countries are encouraged to specialize in certain commodities for export.

Canada, for example, is the fifth largest exporter of agricultural and agri-food products in the world after the European Union, United States, Brazil, and China (CAFTA, 2022). Canada will export up to \$56 billion a year of agri-food and agricultural products and half of everything produced is exported as primary commodities or processed food and beverage products (CAFTA, 2022). At the same time, Canadians across the country experience food insecurity.

From 2007-2012, there was an increase of over 600,000 more people affected by food insecurity (Dachner & Tarasuk, 2018). Food insecurity does not only relate to food, but also is interrelated with other social determinants that may cause adverse health effects. This is a consistent issue; it is glaringly obvious that government agencies have done very little to assure that Canadians are food secure, even though the country recognizes that food is a human right (Mendly-Zambo & Raphael, 2018). There have been slight developments within the Canadian government with Canada's Food Guide being revised, as well as a new Agricultural Policy Framework being discussed, but these have not been implemented in a completed national food policy (Food Secure Canada, 2022). With the absence of government action, food insecurity has been combated by non-governmental community-based initiatives. These initiatives, though beneficial to communities and in developing local food systems, have depoliticized the problem of food insecurity and makes the overall solutions more difficult (Riches & Tarasuk, 2014). This issue needs to be addressed by government agencies to develop a national food policy to provide solutions.

The role of national food policy should represent critical opportunities to address food insecurity in the country (Dachner & Tarasuk, 2018). National food policy is needed

because the current food systems are disconnected in several ways and having a national food policy creates accountability towards the Canadian government, as well as provides a cohesive policy (Dachner & Tarasuk, 2018) that can be useful and integrated with provincial, territorial, and municipal approaches. This is challenging, but the current practices and innovations that provincial and municipal governments may showcase can inform the national policy. Communities are outside the realm of control when dealing with matters of food system policies on even a provincial level, these issues usually extend into national and international export, as well as national agricultural policy. Local innovation and community needs are important to recognize because not all regions of the country are the same, there needs to be dynamism because solutions will be different from one part of the country to the next. Having a national policy that will provide overall goals and principles that are agreed upon will govern the system for a more coordinated and cohesive approach to food systems and policy making.

To influence change in national food policy, acknowledgement of what the local communities are integrating is beneficial to understand community needs. Food security governance has diversified at the local level and organizations are becoming more aware of what is needed in their regions. Alternative and innovative food initiatives have been coexisting alongside traditionally emergency-based approaches like food banks and charitable donations (Edge & Meyer, 2019). Although there is still a disconnection in how food systems are viewed, and tensions can develop when different approaches concentrate on the same interests and dilemmas. As previously stated, it is in the best interest of society to have local food systems integrated into planning frameworks and food systems policies to maintain a sustainable and healthy community and relationship

with food. Community-based initiatives provide insight and can inform on higher levels of government regarding food policy and planning.

1.1 Research Purpose

The purpose of this research is to explore food insecurity within rural communities and highlight the ways in which community-based initiatives can be beneficial to local food systems planning. The goal of this study is to highlight the implications of food insecurity and the interrelated social determinants, determine what innovative solutions are currently being implemented in rural communities, and whether these initiatives can inspire national policy.

The following research objectives will be conducted to try and achieve the goal of the study:

1. Identify how food insecurity effects health and wellbeing of communities
2. Identify innovative strategies in local food systems that address concerns about food security and address whether they are sustainable
3. Highlight the importance of how local food systems planning is integral to include into planning frameworks and national policy

Innovative strategies may be able to bridge a link between consumers, producers, and local governments to help develop an understanding of the needs or limitations of a community. A multi-case study design was conducted in four geographically, and demographically distinct regions of Ontario: Cannington, Cobourg, Dryden, and North Frontenac. These communities were chosen originally for geographic location, rural parameters, as in low population density and outside of urban centres in the region, and

innovation in areas of agriculture and food sustainability. In each location, information was consolidated from demographic profiles, strategic plans, and literature about local level initiatives regarding food security. Archival research was utilized to gain understanding of the current food insecurity situation. Research methods included content analysis, case study research, and literature reviews. This research pulls insights from academic literature on food insecurity, food sovereignty, food systems planning, localization, and sustainable agricultural practices. This research attempts to identify innovative community-based initiatives that relate to local food systems and how they are integral in addressing the issues of food insecurity, as well as how they should be included in food systems planning and policy.

1.2 Study Contribution and Scope

This study is within the scope of Ontario and focuses on rural communities in each of the four broad regions of the province. This study proposes that rural communities possess innovative strategies regarding food security and food sovereignty through education, agricultural practices, community based social services, and local policy. The findings of this study will show that there are significant barriers to integrating food systems planning into planning frameworks at the national level and without this integration, local communities are threatened because the current models of food systems are not sustainable. There are geographical barriers because of the rural status of these communities and resources can only last a finite amount of time before intervention from larger governmental bodies is needed. This study will show that even though the specific community-based innovative strategies exist, and development is

deemed successful, there still needs to be an efficiently working food system in planning frameworks to bridge the existing gaps in the system.

The information gathered from case study research suggest that all regions are in different stages of local food system development and social service, targeting different demographics. There are clear geographic inequalities in rates of food insecurity; there is much more prevalent cases of food insecurity in rural communities. It should be noted that not all rural communities are the same, generalizations will not solve individual community needs, but they do have several similarities in issues like ageing populations, youth out-migration, and lack of interest in bringing skilled workers to the area for economic development (Fearne et al., 2013). This study suggests that while it is important to continue to push for changes to agricultural policy and integrate local food systems planning, there is a bigger significance in educating the public about the current state of contemporary food systems, food insecurity, and highlighting the innovative strategies that rural communities are developing to help bring awareness to their specific needs and limitations. This information should be able to contribute and inspire changes in national policies, or at least bring general awareness to the issues and inspire more accurate measurements of food insecurity data. This research is relevant because it will provide insight for the development of rural economies and planning strategies that will help address the needs of the local food systems, as well as the need for a national food system policy to be put to the forefront of planning frameworks. This research is relevant because it attempts to determine if local food systems and innovations within local communities have the potential to preserve the

local agriculture and facilitate more sustainable, and equitable food systems in Canada overall.

1.3 Paper Outline

This thesis is divided into six sections. Section 1 introduces the issues at hand and gives contextual background, the need for local food systems, as well as the relevant challenges of developing a national policy, and the implications that food insecurity has on community health and wellbeing. Section 2 provides a multi-dimensional literature review of relevant academic sources that address food security, food systems, implications and social determinants, and local community initiatives. Section 3 provides insight on the methodological approach to the study, introducing the need for content analysis, and considering the geographic position of the case study areas. Section 4 investigates case study research of four different rural communities to highlight innovation at the local level. Section 5 addresses the common themes and findings from the research study. Finally, Section 6 provides the summary of the research and provide recommendations for next steps and concluding remarks.

2. Literature Review

This section describes the concept of food insecurity, and the body of research that has resulted from its measurement in the context of the Province of Ontario. The contribution of this literature review research is to understand the potential causes and implications of food insecurity, but also the relevance of local initiatives and innovations that can influence the value of food systems planning. It is important to illustrate the potential that current interventions have to address the problems of food insecurity. These interventions may have influence to implement change on a local, as well as provincial, level. The goal of this literature review is to develop an understanding of determinants and implications that influence foods insecurity, the role of local initiatives in rural communities, and address food systems that are creating beneficial impacts to local policy. Definitions of several terms will also be illustrated in this section for consistency.

2.1 Terminology and Definitions

To have a comprehensive understanding and provide consistency throughout this thesis, definitions of several terms will be explained in this section, as well as provide what current literature dictates as appropriate definitions of the terms. Food sovereignty, food insecurity, local food systems, and rural communities must be defined in the context of this research. It is important to include definitions of the different terminology because it ensures that there will be understanding of the components in the study in the way in which they are presented.

2.1.1 Food Insecurity/Food Security

The current literature is diverse in terms of what constitutes as being food insecure, what factors and indicators exist related to food insecurity, and what is being done about the issue. However, to fully understand the problem at hand, the definition needs to be established. The term “food security” is frequently differentiated by reference of scale – whether it is household food security, regional, national, or worldwide. Nutrition security is another term that coincides with the term of food security. Nutrition security is derived from access to both a healthy diet and to preventative and curative healthcare (Perez-Escamilla & Segall-Correa, 2008; Raphael, 2016; Tarasuk, 2001; Tarasuk et al., 2019). Food security is a term derived from the 1996 World Food Summit, it is aspirational and aims at providing healthy and safe food for all through three pillars: 1) sustainable food systems, 2) physical and economic access to food, and 3) appropriate food use. The absence of these three pillars is what “food insecurity” is in general terms (Gundersen et al., 2018; Kirkpatrick & Tarasuk, 2008; Perez-Escamilla & Segall-Correa, 2008; Tarasuk, 2001). Food insecurity is not a singular issue. Many other social determinants intersect to create this problem at a range of severity. Food insecurity experienced by further developed and economically viable countries results from social conditioning and policies that limit financial resources available to households, this is known as “household food insecurity” (Kirkpatrick & Tarasuk, 2008; Raphael, 2016; Tarasuk, 2001; Tarasuk et al., 2019).

There are five commonly used methods to assess food security. The Food and Agriculture Organization (FAO) method for estimating calories available per capita at the national level; household income and expenditure surveys; individuals’ dietary intake; anthropometry; and experience-based food insecurity measurement scales

(Perez-Escamilla & Segall-Correa, 2008). The literature dictates that household income and expenditure surveys are the most common types of methods that can assess food security within a given area (Kirkpatrick & Tarasuk, 2008; Perez-Escamilla & Segall-Correa, 2008; Raphael, 2016; Tarasuk, 2001; Tarasuk et al., 2019). This would be the Community Health Survey within Canada, which saw an increase in household food insecurity, yet there was no action taken by government agencies to develop food systems planning into infrastructure to offset implications of food insecurity, this is evident since it is still such a prominent issue. Another thing to note is that provincial governments do not include this in provincial and municipal level data collection specifically for food insecurity. There are existing statistics on food insecurity at the provincial and municipal level, however this data is used as an indicator in other categories like 'household income' (Tarasuk et al., 2018). Provincial and municipal governments have opted out of specific food insecurity measurements, and this impedes the data that policymakers need to assess the extent of the problem in the local communities – there would be a lack of evidence for a basis of argument (Tarasuk et al., 2018). As knowledge of the health and social implications of food insecurity in Canada increases, the importance of effective monitoring of this issue is apparent (Raphael, 2016; Tarasuk, 2001; Tarasuk et al., 2019). Food insecurity in Canada needs to be monitored to facilitate and examine factors that may contribute to adverse health or social detriments. A consistent methodology is needed to compare changes, and longer- term strategies can be determined for a recurring issue (Tarasuk et al., 2018b). The term food security relates to a very broad range of development issues, and this is

why accurate assessment and the type of assessment method being used must be acknowledged to define food security in the correct context.

For the purpose of this research, the terms “food insecurity” and “household food insecurity” will be used interchangeably. This means that the term “food insecurity” will reflect it at the scale of “household food insecurity” and food insecurity related to social conditioning and policy. It is understood that there are limitations because household food insecurity has a range of factors that includes a wide network of social activity. However, these factors will be attempted to be addressed in this research in relation to rural communities in Ontario. To summarize, the studied literature has stated a consensus that food insecurity is the absence of the accessibility to healthy and nutritious food, and that it is an issue of inequity when in the context of economically developed countries.

2.1.2 Food Sovereignty

The current literature has mixed interpretations of whether “food sovereignty” and “food security” should be separate terms. Originally, food sovereignty was an agrarian term that focused on reducing the global trade and reorienting food systems around local production (Clapp, 2014; Patel, 2009). Food sovereignty as a concept was evolved from the experience of those within the agricultural and farming industries during the 1980s and 1990s when there were vast changes in national and international agricultural policy (Connell et al., 2013; Rosset, 2003; Wittman et al., 2010). These changes brought widespread loss of control over food systems and food markets, environments, farmland, and rural cultures (Connell et al., 2013; Rosset, 2003; Wittman et al., 2010). The literature states that food security is more of a technical concept

derived from food sovereignty, which is that of a political concept (Agarwal, 2014; Clapp, 2014; Jarosz, 2014; Lee, 2007; Windfuhr & Jonsen, 2005). These two terms should not be oppositional, but rather relate to one another to define and execute on issues surrounding hunger. The history of these two terms suggests that they are fluid in terms of definition and relationships to each other. They change as the state of the world changes. They have both adapted from a national scope to a more domestic and localized vision (Agarwal, 2014; Clapp, 2014; Lee, 2007; Windfuhr & Jonsen, 2005).

Food sovereignty addresses access to adequate food and is the more normative approach in food studies (Clapp, 2014; Wittman et al., 2010). It is integral to agriculture and local food systems because it is the right of peoples to define their own food and agriculture to protect and regulate domestic agricultural production (Patel, 2009). Food sovereignty is a subject of national policy and is reflective of public concerns relating to the domestic food supply (Connell et al., 2013). While food sovereignty evokes a need for democratic food systems and involves input from local communities, food security is concerned with distribution from these food systems (Food Secure Canada, 2022); these terms must be seen as a cohesive entity, but still be considered separate in terminology. Current literature suggests that these terms are differentially deployed depending on context but should still share a relational overlap (Food Secure Canada, 2022; Lee, 2007; Windfuhr & Jonsen, 2005).

Conversely, as food discourse and literature expanded, the terms “food sovereignty” and “food security” have been referred to as being oppositional to each other rather than relational (Clapp, 2014; Patel, 2009; Rosset, 2003; Windfuhr & Jonsen, 2005). As aforementioned, food security is concerned with distribution of food from food systems.

Since contemporary food systems follow globalization and neoliberal policies, food distribution is focused more on export and food availability (Pachon-Arriola, 2013; Patel, 2009). Food security is seen as an increase to food production to make food more available. This viewpoint does not take into account the contextual basis, but rather is a generalized approach to international strategies toward food security. Suggesting that food security approach is to favour food export over national or local consumption is not the definition of food security, but rather what is being seen in the contemporary food system currently. The juxtaposition of these two terms as competing concepts is problematic, as well as inaccurate because one cannot exist without the other (Clapp, 2014; Jarosz, 2014; Patel, 2009)

Food sovereignty is difficult to define in most cases of food discourse. There is a proliferation of overlapping definitions and contradictions, but in the context of seeing “food sovereignty” as a political position and “food security” as a technical concept, this research will define food sovereignty as, “the right of the peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture system” (Food Secure Canada, 2022). It is all encompassing, and simultaneously includes advancements in farming technology, policymaking, the environment, and public health interests. Food sovereignty will be seen as a pillar in development of food systems and be relational to food security.

2.1.3 Local Food Systems

The term “local” must be defined and the definition varies. For the purpose of this research, “local” will be defined in relation to a particular place or geographical entity

and relate to political and administrative boundaries. Agriculture and Agri-Food Canada has four ways of distinguishing local: 1) Geographic distance: calculated units of distance; 2) Temporal distance; calculated in units of time 3) Political and administrative boundaries: based on municipal, regional, or national borders; 4) Bioregions: natural boundaries of an ecosystem (Chinnakonda & Telford, 2007; Mitura & Bollman, 2003).

Food systems include the growing, storing, transporting, processing, packaging, marketing, retail, and consuming of the product (Beingessner & Fletcher, 2019; Braun et al., 2021; Feagan, 2007). This is the first critical dimension to the food system; food needs supply (Clancy & Ruhf, 2010; Braun, 2021; Beingessner & Fletcher, 2019; Woods et al., 2013). In defining what a food system is, it is fairly straight forward in a general sense; that a food system consists of the interdependent parts that provide food to communities, and these systems define the food and agricultural economy (Beingessner & Fletcher, 2019; Braun et al., 2021; Feagan, 2007). A sustainable food system is one that contributes to food security and nutrition for all in such a way that economic, social, cultural, and environmental bases are covered for future safeguarding (Braun et al., 2019; Landman et al., 2009). Though this is a generalized definition of “food systems”, it should be highlighted that there are several extenuating factors that may influence how food systems are driven (see Figure 2), proposes that systems may be impacted by climate, health, or economic factors (Clancy & Ruhf, 2010; Braun, 2021; Beingessner & Fletcher, 2019). An example of an external factor could be global conflict or war, or changes to international trade policy. Both examples would disrupt the food system, so political and economic force disruptions need to be considered (Braun et al., 2021).

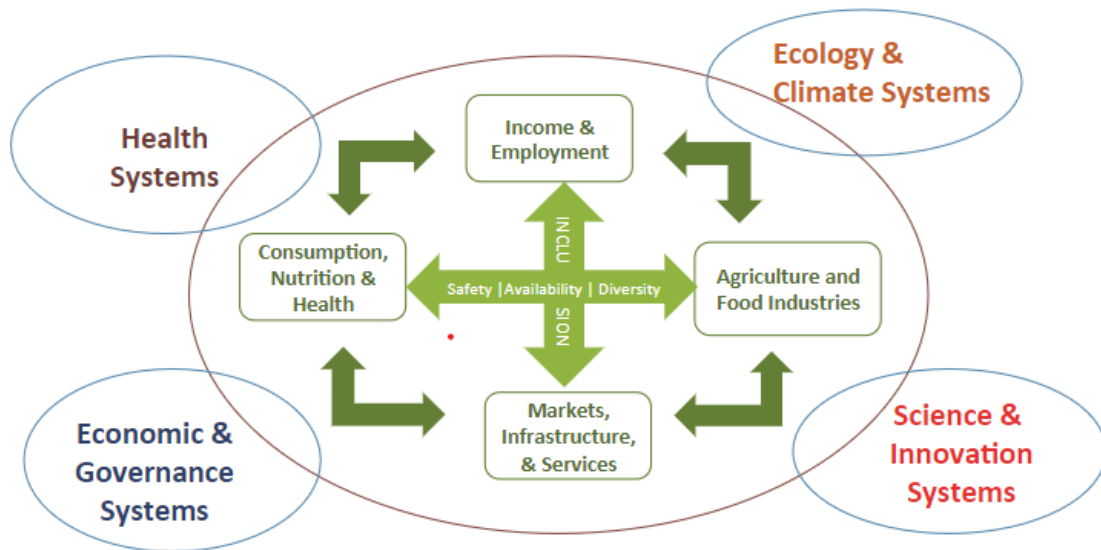


Figure 2: Food System Factors (Braun et al., 2021).

Another facet to this definition must bring into account that current contemporary food systems follow highly industrialized, neoliberal paradigms (Beingessner & Fletcher, 2019; Feagan, 2007; Guthman, 2008; Riches & Silvasti, 2014; Skogstad, 2008). This means that most agricultural production is made for export and corporations, as well as market competitiveness and financial capital (Beingessner & Fletcher, 2019; Guthman, 2008; Harvey, 2011; Wakefield et al., 2015). Contemporary food systems are export-oriented and consumers are often unaware of the origin of where food comes from (Born & Purcell, 2006; Braun et al., 2021). It is this obliviousness that is an issue; food systems are integral parts of production and food supply, and many have reason to believe there are no issues with the system because they can afford food without concern. Food systems are deceptively functional, especially in an urban context where food can be abundant in availability (Campbell, 2004; Feagan, 2007). Many

communities have seen that contemporary food systems exacerbate occurrences of inequity, and this has inspired re-evaluation (Braun et al., 2021; Beingessner & Fletcher, 2019; Clancy & Ruhf, 2010; Crivits & Paredis, 2013; Woods et al., 2013).

The term “local food system” focuses on sustainability and a more location-based system with community and neighborhood as priority. By understanding the community needs, as well as planning for efficient land-use, the way in which food production is better understood in tandem (Braun et al., 2021; Beingessner & Fletcher, 2019; Clancy & Ruhf, 2010; Woods et al., 2013). Local food systems focus on minimizing industrial production and focusing on the immediate community needs. This study will use “local food systems” as an overarching term to include all forms of alternative or community-based food systems and initiatives; this includes terms like cooperative food systems or sustainable food systems. Local food systems focus on self-reliance and sustainability; allocation of resources is critical to include in how food systems are implemented. The conceptualization of local food systems will have a heavy focus in supporting the development of sustainable food and nutrition systems to improve health and wellbeing in communities (Braun et al., 2021; Beingessner & Fletcher, 2019; Mount, 2012). Each local food system shares key characteristics, but often dictated to individual community needs; they have also been fluid in the sense that they change and adapt with population changes and the environment; politics of food are not inherently fixed (Braun et al., 2021; Beingessner & Fletcher, 2019; Clancy & Ruhf, 2010; Halbe & Adamowski, 2019; Wald & Hill 2016; Woods et al., 2013).

Another disconnection highlighted in the literature regarding contemporary and local food systems is the rural-urban division. This must be recognized to illustrate that there

is a constraint in terms of maintaining relationships between agricultural production (predominantly a rural activity) and urban consumers (Beingessner & Fletcher, 2019; Braun et al., 2021; Campbell, 2004). The way in which local food systems are integrated at the rural community level will be explained further in this literature review.

Specifically, the way in which local food systems show beneficial change to food security measures and may influence change to municipal and provincial food policy.

There needs to be a shared foundation of a food system policy with all stakeholders involved. Furthermore, some literature states that local food systems should be implemented, but the scope in which they are implemented must cover more area to be effective, not just rural locationality; there is an important aspect in determining the scale in which a food system is implemented at. Local food systems are predicted to have the need to grow and engage in larger consumers and producers and provide alternative revenue (Halbe & Adamowski, 2019; Mount, 2012; Wald & Hill, 2016). However, small-scale local systems are viable in determining community needs, perhaps expansion is not always necessary if these food systems are sustainable in the long-term.

2.1.4 Rural Communities

Current literature dictates that almost 20% of the population lives in rural, remote, Indigenous, coastal, or northern communities in Canada (northern territories) (Government of Canada, 2019; Piaskoski et al., 2020). To define the term “rural” is difficult to determine because there is much debate if it relates specifically to geographic location, or population, or density, or it is merely socially constructed (Deaton, 2011; Statistics Canada, 2001). It is suggested that the definition of rural is dependent on the

context or the question being addressed (Deaton, 2011; Statistics Canada, 2001). For the context of this research the term “rural” and “smalltown” will be used interchangeably. It will be defined by the definition provided by Statistics Canada which suggests that populations living in towns and municipalities outside the commuting zone of larger urban centres with populations of 10,000 or more, is considered rural. This is the geographical classification of rural (Statistics Canada, 2001). This definition will also include census agglomerations (CAs) which has populations of less than 50,000 (Statistics Canada, 2018).

Several studies have indicated that rural communities have significantly lower health status comparatively to urban residents (Haggerty et al., 2014; Metrass-Mendes et al., 2014; Mitura & Bollman, 2003; Sadler et al., 2011; Brovarone & Cotella, 2020); this is important to highlight because food insecurity and health are relational. Youth out-migration, ageing populations, lack of specialists and skilled workers, as well as deteriorating infrastructures are several factors that inhibit rural communities to develop economically, as well as be sustainable (Brovarone & Cotella, 2020; Metrass-Mendes et al., 2014; Wathen & Harris, 2006; Weinhold & Gurtner, 2014). These social determinants and barriers also influence food security within these communities. Rural communities have a need to plan and implement improvements and change at a community capacity. The need for improved infrastructure inspires action toward resilience and sustainable practices; communities can focus on maintaining local economies, and a large part of local economies is local food and agriculture or food sovereignty (Piaskoski et al., 2020; Tarasuk et al., 2019).

2.2 Measurement of Food Insecurity

Research on food insecurity developed in the 1980s, but there were several areas of contingency due to the definition of “hunger”, understanding the magnitude of the problem was difficult because the inability of where to start (Alvarez et al., 2021; McIntyre et al., 2015). In Canada, the way in which food insecurity is measured is through the Canadian Community Health Survey (CCHS), which is a cross sectional survey administered by Statistics Canada (Tarasuk & Mitchell, 2020). This provides health related information from Canadians, as well as includes the Household Food Security Survey Module. This module has 18 questions asking respondents for experiences related to food insecurity which include: anxiety related to food, experiences of hunger, and eating habits (Tarasuk, Mitchell & Dachner, 2014; Tarasuk & Mitchell, 2020). Though Canada is making efforts to measure food insecurity, the scope is on a national level. Measurement of food insecurity is integral in monitoring and evaluating the prevalence, risk factors, and the possible interventions and policies that are implemented to mitigate the issue (Anderson, 1990; Alvarez et al., 2021; Tarasuk & Mitchell, 2020). Measuring food insecurity directly relates to evaluation of current public assistance programs and how they are functioning in the community. Measuring food insecurity needs to adequately assess and monitor in the appropriate scope – as in, it is better to comprehend the extent, causes, and consequences of food insecurity in different contexts so that the most adequate solutions can be utilized and developed (Alveraz et al, 2021; Tarasuk & Mitchell, 2020). With this being said, the province and the municipalities should be more diligent in measuring food insecurity indicators to address issues of inequity and public health concerns that arise from food insecurity.

Arguably, it is challenging to measure food insecurity because a lot of indicators and prevalence rates are estimated, and patterns are infrequent or weak to make conclusions out of because food insecurity is an elusive concept. Most data collection is in the form of qualitative data collection methods regarding this topic is through surveys or questionnaires (Alvarez et al., 2021; Tarasuk & Mitchell, 2020). Also, determining the scope of the measurement is difficult to access because food insecurity relates to the overall food system, as well as individual household experiences (Alvarez et al., 2021). Since food insecurity is so complex, it is difficult to make assumptions based on certain demographics. There could be resistance to questionnaires due to stigma, but the experience is what provides insight into how food insecurity is affecting overall wellbeing, so the incentive to provide this information would be difficult to determine. However, since food insecurity is a threat to individual and society, as well as a serious threat to public health, it is pertinent that research on food insecurity is accurately reported. No singular method to measurement will be able to recognize all the different indicators or implications of food insecurity, but efforts should continue so that the creation of a validated measurement method can be developed for the appropriate scope (Alvarez et al., 2021; Penne & Goedeme, 2021; Tarasuk & Mitchell, 2020).

2.3 Food Insecurity: Determinants of Health

This sub-section of the literature review identifies indicators and implications of food insecurity and shows the availability and evidence linking food insecurity and health, as well as the need for a more comprehensive food system. The framework to determine food security indicators demonstrates the causal relationship food has to overall wellbeing (Buck-McFadyen, 2015; Tarasuk & Vogt, 2009). Current literature states that

food insecurity is more prevalent in low-income households, food bank usage and other charitable means are not good indicators of food insecurity per say, and food insecurity directly relates to poorer health and possible exacerbation of existing and developing chronic health issues. Like all social determinants of health, food insecurity intersects with other factors that cause economic and social conditions that influence differences in health status.

2.3.1 Low-Income & Material Deprivation

Current literature suggests that income is by far the strongest predictor of household food insecurity (Edge & Meyer, 2019; Feed Ontario, 2020; Kirkpatrick & Tarasuk, 2008; Loopstra & Tarasuk, 2015; Tarasuk, 2005; Tarasuk et al., 2015; Tarasuk & Mitchell, 2020). To be put simply, household food insecurity is characterized by not having enough money to purchase sufficient, nutritious food; it is inadequate access to food because of financial constraint (Dachner & Tarasuk, 2018; Piaskoski et al., 2020; Tarasuk et al., 2019) and so, naturally, those dealing with issues of poverty would be negatively affected. Low-income can be attributed to lack of employment opportunities or precarious employment. Figure 3 represents the prevalence of household food insecurity by income in a Canadian context. Certain groups are more vulnerable to food insecurity, including households with children, lone parent families and individuals whose main source of income is government assistance, as represented in Figure 4 (Tarasuk & Mitchell, 2020; Statistics Canada, 2018).

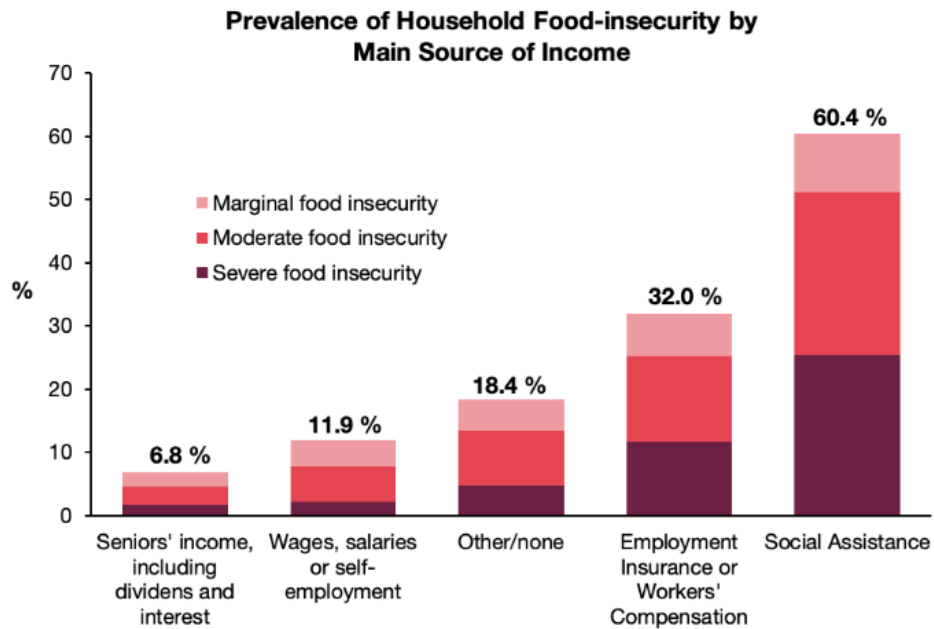


Figure 3: Prevalence of Household Food Insecurity by Main Source of Income. The majority of the population experiencing food insecurity rely on social assistance (Tarasuk & Mitchell, 2020; Statistics Canada, 2018)

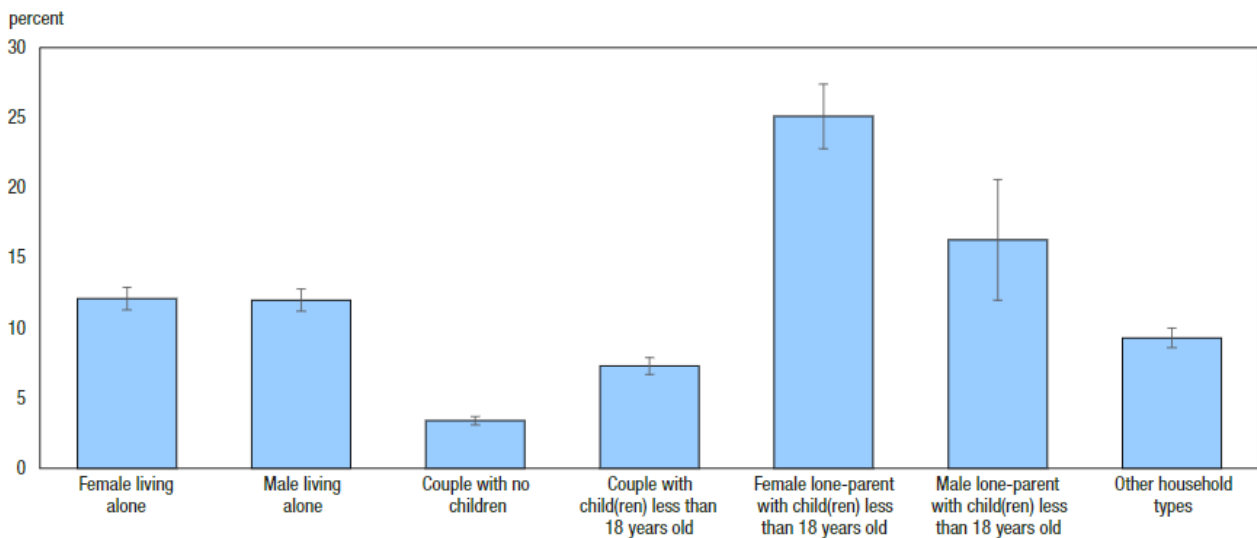


Figure 4: Household food insecurity moderate or severe, by household type. Lone-parents have the highest percentage of household food insecurity according to data

collected by the Canadian Community Health Survey (Statistics Canada, 2018)

In relation, food insecurity is an established marker of material deprivation (Polsky & Gilmour, 2020; Tarasuk et al., 2019). Material deprivation refers to the inability for individuals or households to afford consumption goods and activities that are typical in a society (Fafard St-Germain & Tarasuk, 2017; Tarasuk et al., 2019). The risk of food insecurity escalates with sociodemographic characteristics like the aforementioned in Figure 3 and 4, but also include those that have Aboriginal/Indigenous status, visible minorities, those that have precarious employment, and those that rent their residences rather than own them (Health Canada, 2007; Tarasuk et al., 2014). These sociodemographic characteristics in combination describes households with limited material resources and profound social and economic disadvantages (Fafard St-Germain & Tarasuk, 2017; Polsky & Gilmour, 2020; Tarasuk et al., 2019). These disadvantages take toll on individual's health and wellbeing. Households that have resource constraints attempt to minimize experiences of food insecurity, especially households with children, by reducing costs and often sacrificing one's own food needs for the sake of others in the household (Dachner et al., 2010; Tarasuk & Krieger, 2003; Tarasuk, 2001). There are other instances where people will put off payments or forfeit services and utilities, so that they are not threatened with food shortage. There are others that will sell possessions, seek support from friends or family, use charitable programs that are accessible, or even be involved in theft as coping strategies to mitigate experiences of food insecurity (Kirkpatrick & Tarasuk, 2009; Kirkpatrick &

Tarasuk, 2011). This illustrates the sense of desperation that coincides with experiences of food insecurity.

2.3.2 Housing

Another social determinant that interrelates with food insecurity is housing, specifically affordability of housing. Housing affordability has become a standard measure for determining whether households can meet their basic needs within the existing housing market. High housing costs impact and reduce or completely deplete other expenses households have for resources like food, clothing, medications, or transportation; this allows adverse health effects to incur since several other necessities are neglected and thus increase stress levels of individuals (Fafard St-Germain & Tarasuk, 2017; McIntyre et al., 2015; Polsky & Gilmour, 2020). Since housing is an essential need, the housing market is not flexible compared to other non-essentials. There is a housing crisis and the prevalence and rise in homelessness rates is one indicator of an increasing affordability problem (Brott et al., 2019; Buck-McFadyen, 2021; Canadian Observatory on Homelessness, 2013). The need for effective and reasonable housing policies is apparent, and housing affordability has been an important housing policy for several years. The evolution of Canadian housing policies shifted from federal effort in public social housing, to putting the responsibility on provincial and municipal entities (Hulchanski, 2003; Ministry of Municipal Affairs and Housing, 2014; Tinday, 2009). The withdrawal of federal efforts in housing policy creates limitations in how provincial and municipal agencies can support those that need housing assistance the most. The health impacts of poor housing places people at risk to adverse health effects. The rising cost and lack of affordable housing puts risks

on the ability to afford and access safe and nutritious food, which is the definition of household food insecurity.

Moreover, in rural communities, housing policy is related to geography; it is dependent on their geographic proximity to urban areas, type of economic development, and whether communities have designated themselves as farming, retirement, or residential areas (Moore & Skaburskis, 2004). Rural communities are not homogenous, they have diverse needs and housing landscapes differ. Rural homelessness has been a growing issue and the low housing stock in rural communities contributes to challenges with overcoming homelessness (Benecki et al., 2014; Bruce, 2006; Buck-McFadyen, 2021). Housing availability in rural communities are usually that of semi-detached or detached dwellings with limited rentals or multi-apartment buildings (Buck-McFadyen, 2021; Halseth & Rosenberg, 1995). Housing options are limited which is problematic, especially those with lower incomes because they are at risk. Most rural areas and small towns have very little rental housing choices and the ones that exist are relatively poor in condition and have higher operating costs (Benecki et al., 2014; Bruce, 2006; Buck-McFadyen, 2021).

2.3.3 Health Implications

The first steps to reduce food insecurity burdens is to consider understanding the effects on health. Poverty has long been associated with poor health outcomes, and since food insecurity is a factor in poverty and low-income, it can also be linked to poorer health status (Loopstra & Tarasuk, 2015; Tarasuk, 2005; Tarasuk et al., 2015; Tarasuk & Mitchell, 2020). Understanding that the existence of negative health outcomes that stem from food insecurity is important to healthcare professionals, as

well as policy makers because they are responsible for providing healthy community living (Gundersen & Ziliak, 2015; Tarasuk, 2005; Tarasuk et al., 2015). Many of the determinants of food insecurity are related to determinants of health. Compounding factors that result from the exposure to food insecurity have been described as pathways to stress, which promotes visceral fat accumulation and chronic disease in relation to poor diets and weight gain (Dorosty, 2016; Gucciardi et al., 2009; Laraia, 2012). Levels of high stress can cause a release of cortisol or other substances that cause a desire to consume high energy-dense foods and alter metabolism (Laraia, 2012). Poor eating habits can cause cardiovascular disease, diabetes, and in some cases, cancer (Landman et al., 2009). Food insecurity has been assumed to promote dependence on inexpensive, highly palatable foods that are energy dense, but these foods are associated with weight gain over a short period of time because they are heavy in starches and carbohydrates which will convert into sugars (Gucciardi et al., 2009; Gucciardi et al., 2014; Laraia, 2012).

Current literature also highlights that there are significantly higher rates of food insecurity among those with diabetes comparatively from those without diabetes; this is not suggesting that food insecurity causes diabetes, but rather, highlights that food insecurity creates difficulties managing diabetes (Dorosty, 2016; Gucciardi et al., 2009; Gucciardi et al., 2014; Laraia, 2012). Research suggests that the association between food insecurity and low self-efficacy to managing diabetes is because of extra costs to healthcare expenses like medications and supplies; many will forego these medications or supplies to buy food instead or pay rent (Gucciardi et al., 2014). Accessibility to sufficient, safe, and nutritious food tailored to their specific diet needs is difficult to

maintain if the problems of food insecurity are present. Healthy diets are supposed to consist of high proteins, vegetables, and low in fat and carbohydrates, especially for those managing diabetes (Dorosty, 2016; Gucciardi et al., 2009; Gucciardi et al., 2014; Laraia, 2012). However, maintaining a supply of healthy foods is difficult for those that are low-income or have financial constraints. This highlights the significant role food security plays in the prevention and management of health conditions like diabetes.

Moreover, food insecurity has significant effects on mental health. Depressive disorders burden the world, and several people go about without treating their mental health problems (Jessiman-Perreault & McIntyre; 2017; Loopstra & Tarasuk, 2015; Men et al., 2021). In Canada, individuals within lower income groups reported to have poorer mental health compared to higher income groups (Statistics Canada, 2013). It is also reported that those with low income or low socioeconomic status indicated a prevalence of anxiety or mood disorders, as well as substance abuse (Jessiman-Perreault & McIntyre; 2017; Men et al., 2021). An indicator of lower-income is food insecurity and this directly contributes to stress in individual's lives. Current psychosocial research suggests that stress is a leading pathway to mental illness, regardless of biological or sociocultural perspectives (Kessler et al, 1999; Jessiman-Perreault & McIntyre, 2017). Again, this is not saying that food insecurity causes mental health illnesses directly, but it is a factor in causing stress and anxiety that is often overlooked. It can be considered a chronic stressor with significant effects on communities because the anxiety comes from the worry of affording basic necessities, as well as providing for others.

2.4 Food Banks and Charity

Food insecurity became a major problem in Canada during the 1980s, community groups began to develop charitable food assistance programs in response to hunger (Domingo et al., 2019; Edge & Meyer, 2019; Loopstra & Tarasuk, 2015; Tarasuk, 2005). The demand for charitable food assistance has steadily grown as levels of poverty and unemployment has grown (Tarasuk & Beaton, 1999; Tarasuk et al., 2015). Charitable food assistance programs exist as the primary strategy toward mitigating food insecurity among households – these include food banks, nutrition programs, and food programs for children and the elderly (Edge & Meyer, 2019; Feed Ontario, 2020; Loopstra & Tarasuk, 2015; Tarasuk, 2005; Tarasuk et al., 2015). These charitable food assistance programs are an adjunct to publicly funded social assistance programs and are usually operating on an ad hoc basis with voluntary organizations (Loopstra & Tarasuk, 2015; Tarasuk et al., 2014; Tarasuk et al., 2020). Although there are social services provided by the provincial and federal governments in place to support lower income households, Canada does not have explicitly designed programs to support food security other than on an emergency-basis (Buck-McFadyen, 2015; Dachner & Tarasuk, 2018).

Food banks tend to be the most accessible and popular form of charitable food assistance. There was a surge of food bank usage and demand in Ontario during the COVID19 pandemic, and the response was overwhelming for voluntary organizations. Food banks can be referred to as agencies that enact the transfer of grocery type foods free of charge for individuals in need (Loopstra & Tarasuk, 2015; Tarasuk et al, 2020). These assistance programs were established during the 1980s when there was an economic downturn with a growing number of people without employment (Loopstra & Tarasuk, 2015). Food banks are still voluntary, and they can be run by a variety of

organizations including religious groups, community services, schools, and community health centres. These services are operated by donated food and volunteer labour (Loopstra & Tarasuk, 2015; Tarasuk et al., 2014). Operational structures of food banks are very restrictive because of this volunteer basis and reliance on donated food items. Food banks in Canada rely on food donations and this reliance makes distribution and availability limited which limits the frequency and amount of assistance given to those in need (Loopstra & Tarasuk, 2015; Tarasuk et al., 2014). The issues with food banks is that donated food can be of poor quality or small portions, community members may be turned away because there is a shortage in what is available, community members feel that food banks are stigmatized, or not worthwhile to go to because the lack of quality and service and are not helpful (Loopstra & Tarasuk, 2015; Tarasuk et al., 2014), which is ironic because . that's why these public assistance programs exist: to help. This illustrates that policies and operational standards may need changing to predict what community members need and supply based on these needs.

However, current literature reflects that food banks and charitable food assistance programs are not valid indicators of food insecurity. This is because data on food assistance programs, food bank usage in particular, offers only limited insight into what is described as "hunger". As previously mentioned, the definition of hunger is an issue of contention. Monitoring the use of food banks is managed by Food Banks Canada and consists of qualitative survey collection. However, not all food banks are registered or monitored by Food Banks Canada, which allows inaccuracies to representation, also not everyone that experience food insecurity has the means to use food banks because of circumstances like transportation or mobility issues. This is especially evident in rural

communities where public transportation infrastructure is limited. Therefore, it is a poor indicator in food insecurity because statistics miss a significant proportion of the food insecure population (Buck-McFadyen, 2015; Dachner & Tarasuk, 2018; Loopstra & Tarasuk, 2015) Food insecurity is not measured accurately at a provincial and municipal level, which makes data from food assistance programs to be inaccurately characterized and policy change can only be partially examined, and figures are understated. Using monitoring data rather than food bank usage statistics reshapes the understanding of the problem of food insecurity in two ways: 1) excess of household needs in the correct context highlights the need for systematic interventions, and 2) population monitoring of food insecurity allows the ability to evaluate success and failures of intervention with greater potential for accuracy (Dachner & Tarasuk, 2018; Loopstra & Tarasuk, 2015).

2.5 Local Food Systems & Community-Based Initiatives

Food banks and food-based charities are usually used on an emergency basis; however, they also provide insight on how our current food systems are flawed with the mere existence of their need. Societal expectations for food and agriculture have stressed the significance of healthy and environmentally sustainable food. Current, or conventional, food systems rely heavily on convenience and current literature iterates that they are unsustainable because they disconnect producers and consumers (Buchan et al., 2015; Halbe & Adamowski, 2019; Johnson et al., 2016); consumers are unaware of where their food is coming from. The importance of being better connected to producers is that there will be stronger incentives to distribute food in a way that better protects agriculture and the environment (Buchan et al., 2015; Halbe &

Adamowski, 2019; Johnson et al., 2016). Current food systems have been challenging because they carry the characteristics of globalization and industry – an emphasis on capital gain – which has become a source of social, economic, environmental and health related issues, like food insecurity, for several communities (Buchan et al., 2015; Halbe & Adamowski, 2019; Johnson et al., 2016; Wegener et al., 2012; Wittman et al., 2012). The rise of local and alternative food systems is a response to socioeconomic and environmental concerns that are not being addressed by existing government programs and current food systems (Bloom & Hinrichs, 2010; Buchan et al., 2015; Johnson et al., 2016; Wegener et al., 2012; Wittman et al., 2012).

The emergence of alternative food systems has emphasized the benefits of local food production, distribution, and consumption (Bloom & Hinrichs, 2010; Buchan et al., 2015; Halbe & Adamowski, 2019; Johnson et al., 2016; Wegener et al., 2012). The use of local systems carries the potential to foster more sustainable food systems by minimizing the distance from the field to the home and focus on easier distribution. This can have several benefits for potentially decreasing greenhouse gas emissions because food does not have to be transported far for consumption. Also, it can retain more money in a specific region (Landman et al., 2009; Johnson et al., 2016). Local food systems can also improve public health because it is determined that eating local food can add to overall wellness of a community (Halbe & Adamowski, 2019; Landman et al., 2009; Johnson et al., 2016). Another benefit of local food systems is that they can present opportunities for social inclusion and great connections between rural and urban populations (Halbe & Adamowski, 2019; Landman et al., 2009; Johnson et al., 2016). For example, a local farmers' market or community supported agriculture

program, would be considered alternative or local institutions that support local food systems that bring both rural and urban populations together (Buchan et al., 2015; Halbe & Adamowski, 2019; Johnson et al., 2016). This also provides more opportunities to build long-term local economic resilience, environmental stewardship, and better access to quality food (Berti & Mulligan, 2016; Bloom & Hinrichs, 2010; Buchan et al., 2015; Feagan, 2007; Halbe & Adamowski, 2019).

Furthermore, several non-profit organizations and grassroots organizations have been created in both urban and rural communities. These community-based initiatives attempt to tackle inefficiencies of existing food systems, and especially to tackle the issues of food insecurity. These types of organizations can contribute to both the local food system and the social economy (Wittman et al., 2012). These alternative food systems and community-based initiatives allow for higher levels of trust and reciprocity; they make accessibility to food easier for the community (Buchan et al., 2015; Halbe & Adamowski, 2019; Johnson et al., 2016; Wegener et al., 2012; Wittman et al., 2012). Farmers' markets, community-based agriculture like community gardens, and local food banks are community-based initiatives that attempt to bring significant awareness to the importance of local food. These community-based initiatives attempt to promote sustainability in the community, economy and environment, as well as provide public empowerment (Braun et al., 2019; Landman et al., 2009). There is also a fostered community and cultural integrity through a food-educated population.

2.6 Summation

Academic literature was utilized to define the terms in this research to provide consistency and understanding of context. This literature review also provided evidence

of how food insecurity is interrelated to determinants of health, as well as supported the position that local food systems are needed because they bring beneficial implications to rural communities and address issues of food insecurity. This literature review illustrated that community-based initiatives like farmers' markets, food banks, and community gardens establish institutions that empower the local community and embody sustainability, which may influence positive changes in socioeconomic issues like food insecurity.

3. Methods

In order to achieve the purpose of this research, the methods must be identified and explained to provide understanding of the techniques used to provide information related to the purpose. The methods used will illustrate the importance of stating positionality, literature review and thematic analysis, and the use of case studies.

3.1 Positionality/Reflexivity

The positionality of the researcher is that of the viewpoint of a visible minority that has first-hand experience with the adverse affects of food insecurity. The researcher also has first-hand experience living within a rural community that had several barriers to social services and has experienced social exclusion; it is understood that this research may be perceived as bias, but this is not the intent. The positionality of the researcher is to see food security as a human right for all, regardless of socioeconomic status. This research is to provide evidentiary data and analysis of issues relating to food insecurity and how local food systems would be beneficial on a national scope. This research is not conducted to complement the experiences or perspective of the researcher. Rather, it is done to enlighten those that may not have experiences with food insecurity, to be aware that this situation exists for many people and that there are several gaps in the system reflected in the past and present.

3.2 Literature Review

This thesis explores local food system innovations and food systems planning, and how it effects food security of rural communities. The use of electronic databases, namely Google Scholar and Scholars Portal, were utilized to search for peer reviewed

academic literature. Key terms were used in the electronic databases to locate literature, such as “food insecurity”, “food security”, “local communities”, “rural Ontario”, “food systems planning”, and “innovation” in various combinations. This method provided both primary and secondary sources of peer reviewed academic literature. The method of using literature reviews in this research allows current literature to be analyzed and find gaps or areas that have limited data to study. Literature reviews are critical to research methodology because it relates to existing knowledge, synthesize previous research, advance knowledge, and integrate findings and perspectives from many empirical sources (Snyder, 2019). This literature review provided evidence for an effect, and also highlighted areas where barriers and gaps exist in current policy and practice within a Canadian context in English. There was no real timeframe in terms of age of articles used in the literature review. This is because the subject being analyzed has consistently been an issue for several years and all information is pertinent and may highlight there has been minimal change systematically.

Conducting literature reviews is difficult in terms of transparency and evaluation. The way in which this literature review was conducted followed questions in Table 1. This allowed a more comprehensive review that consolidated relevant information to gather data for thematic analysis. The use of the literature review for this research gives opportunities for new interpretation of already existent material. The organizational methods of the literature review combined summation and synthesis within the conceptual categories of food security and food systems. The use of the literature review highlighted areas of contention within the current research field, as well as identified the gaps and contribution to the area being studied.

Phase	Questions to Consider
1: Design	<ul style="list-style-type: none"> • Is this review needed and what is the contribution of conducting the review? • What is the potential audience of the review? • What is the specific purpose and research questions this review will be addressing? • What is the search strategy for this specific review? (include terms, databases)
2: Conduct	<ul style="list-style-type: none"> • Does the search plan developed in phase one work to produce an appropriate sample, or does it need adjustment? • What is the practical plan for selecting articles? • How will the search process and selection be documented? • How will the quality of the search process and selection be assessed?
3: Analysis	<ul style="list-style-type: none"> • What type of information needs to be abstracted to fulfill the purpose of the specific review? • What type of information is needed to conduct the specific analysis? • How will reviewers be trained to ensure the quality of this process? • How will this process be documented and reported?
4: Structure	<ul style="list-style-type: none"> • Are the motivation and the need for this review clearly communicated? • What standards of reporting are appropriate for this specific review? • What information needs to be included in the review? • Is the level of information provided enough and appropriate to allow for transparency so readers can judge the quality of the review? • The results clearly presented and explained? • Is the contribution of the review clearly communicated?

Table 1: Provides important questions to consider in each step of literature reviews (Snyder, 2019)

Thematic analysis and content analysis was used to summarize the common themes found in the current literature. Thematic analysis is a form of data analysis that is flexible for analyzing qualitative data that can be used within a variety of paradigmatic or epistemological orientations (Kiger & Varpio, 2020). Thematic analysis is useful in the sense that it is an appropriate method of analysis for seeking and understanding certain experiences and behaviours, which is one of the ways it is used in this research. This

methodology provokes common and shared meanings, it works best with other forms of qualitative methodologies that rely on coding and searching data sets for themes as part of the process like case studies. Since thematic analysis is really flexible as a methodology the following assumptions must be taken into consideration in this thesis: food insecurity is directly related to health and wellbeing, and food insecurity may be eradicated if local food system strategies were implemented into a national food system policy.

The limitations to using thematic analysis relate to the failure to adequately describe assumptions that underlie the analysis, the idea is to provide strong evidence and analysis to ensure that analysis is not weak and merely descriptive. This type of analysis requires consistency of themes and carefully follow a six-step process:

Steps	Process
1	Familiarize with the data
2	Generating initial codes
3	Search for themes
4	Review themes
5	Define and name themes
6	Produce the report

Table 2: Six Steps to Thematic Analysis (Kiger & Varpio, 2020)

The major themes this research produced were the following and used to organize the proceeding literature review: (i) food insecurity is a consequence of inequity, (ii) food insecurity can exacerbate or cause adverse health effects, (iii) local food systems are beneficial to rural communities, (iv) there are gaps in services and government approaches, and (v) innovation at the local level are not sustainable without intervention.

3.3 Case Study Methods

The case study approach was utilized to explore the community-based initiatives rural and smalltown communities developed to combat issues of food insecurity. This method also explored the benefits of local food systems and analyzed how these developments could create opportunities to address how the contemporary food system needs reformation. Case study methods were used to provide covariational evidence. The definition of what case study method is, is a bit ambiguous, however, this type of research has demonstrated advantages and has the ability to elucidate several different principles of research (Willis, 2014). This is evident because case studies can include qualitative methods, ethnographical methods, process-tracing, and the research of singular phenomenon or instances (Gerring, 2004). The various forms of case studies can provide nuanced and empirically rich, holistic accounts of specific phenomena (Crowe et al, 2011; Willis, 2014). This method is helpful to explain, describe and explore events in the everyday contexts in which they occur (Crowe et al, 2011).

There are limitations to case study methods, that being selecting or conceptualizing the wrong case results in lack of theoretical generalizations (Crowe et al, 2011). Case studies have been scrutinized for lacking scientific evidence and providing little basis for generalization because it produces findings that may be transferable (Willis, 2014). However, there is a vast difference between statistical and analytical generalizations; this thesis focuses on the analytical. The case study method is appropriate to retain substantial utility for analytical generalization and provides exploratory, theory-building (Willis, 2014). The case study method allows for this research to impose a broader, pluralistic, mixed method research strategy.

The four communities chosen for this case study research: Cobourg, Ontario, Cannington, Ontario, North Frontenac, Ontario, and Dryden, Ontario. The cases were chosen because of geographic location, and current food system initiatives being implemented at the local level. The current strategic plans will be analyzed for each community to highlight whether food security is an issue of concern and whether it is properly measured. In this research, the case study method is beneficial for helping to explore the chosen communities, as well as provide an intensive study of singular areas (the local food systems of the four communities) for the purpose of understanding a larger class of areas (the contemporary food system on a national scope). This method delivers the best approach to finding additional insights into what gaps exist currently, and how different implementation strategies are performing at the present time.

4. Case Studies

The following case study research areas will be utilized to provide exemplary proof of innovation and initiatives taking place at the local level. These case studies will be able to provide insight and exploration on local rural communities and the issues surrounding food insecurity and how local organizations are addressing the issues in the community. The use of local community-based organizations will be able to provide recommendations regarding how to implement strategies toward a more potentially cohesive food system. It should be noted that all case studies have no mention of a food system or food security strategy in the official planning frameworks. The mention of community development vaguely includes the right to food or the term “food security”, but no goals or strategy for implementation or focus on food systems. All planning frameworks do encourage sustainable practices and reducing energy and protecting local food production. However, the priority of current planning frameworks seems to be focused on expansion and economic development through agriculture, manufacturing, and tourism sectors.

4.1 Cannington, Ontario

Cannington, Ontario is part of the Township of Brock which is located on the east shore of Lake Simcoe (Township of Brock, 2022) within the Greater Golden Horseshoe (GGH), as seen in Figure 5. This township is part of the Regional Municipality of Durham. Agriculture is the largest employer in this township and Cannington is considered one of the urban areas. However, in the context of what “rural” is defined as in this research, Cannington, Ontario is a rural town with an approximate population of just under 20,000 residents.

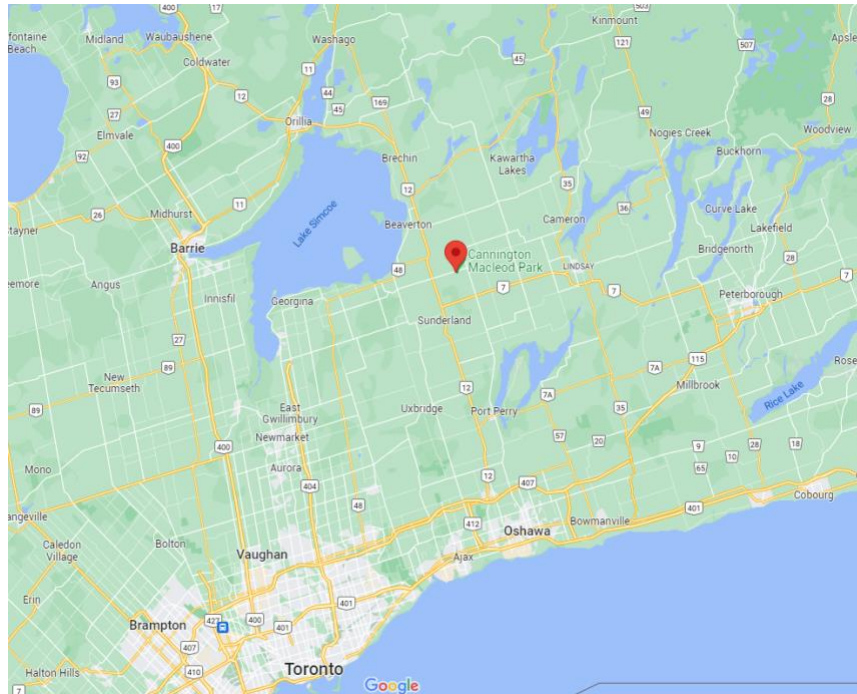


Figure 5: Map of location of Cannington, Ontario (Township of Brock, 2022)

Within Figure 6, the age distribution of Cannington is measured alongside the remainder of Brock Township. The majority of the census data has the population above the age of 15 with a significant percentage above the age of 50. One can determine from this data is that Cannington is an ageing population, which is very common in rural communities. Since Cannington is considered a rural community in this research, there are concerns with rural services and accessibility. Rural ageing in the literature has long recognized rural communities as often not fiscally equipped to address older people's increasingly complex needs (Rural Ontario Institute, 2019).

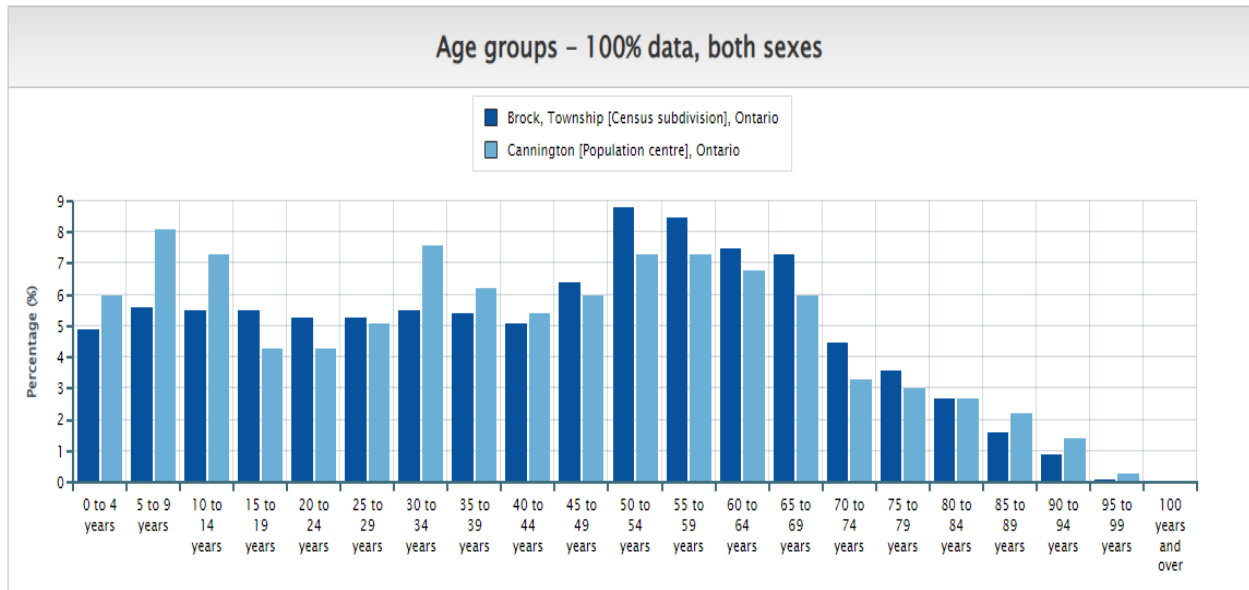


Figure 6: Age Distribution of Cannington, Ontario within Brock Township (Statistics Canada, 2016a).

The majority of the census data has the population of Cannington, Ontario above the age of 15 with a significant percentage above the age of 50. This represents that this community is an ageing population, which is very common in rural cities. Total population of Cannington, Ontario according to 2016 Census data is 1845.

Another statistical figure to note is the relevance of low-income in Cannington comparatively to the province of Ontario. Figure 7 represents that more than 12% of the population within the age of 18-64 years has a prevalence of low-income (Statistics Canada, 2016). This is important to note because, as previously mentioned, the relationship between food insecurity and low-income is causal.

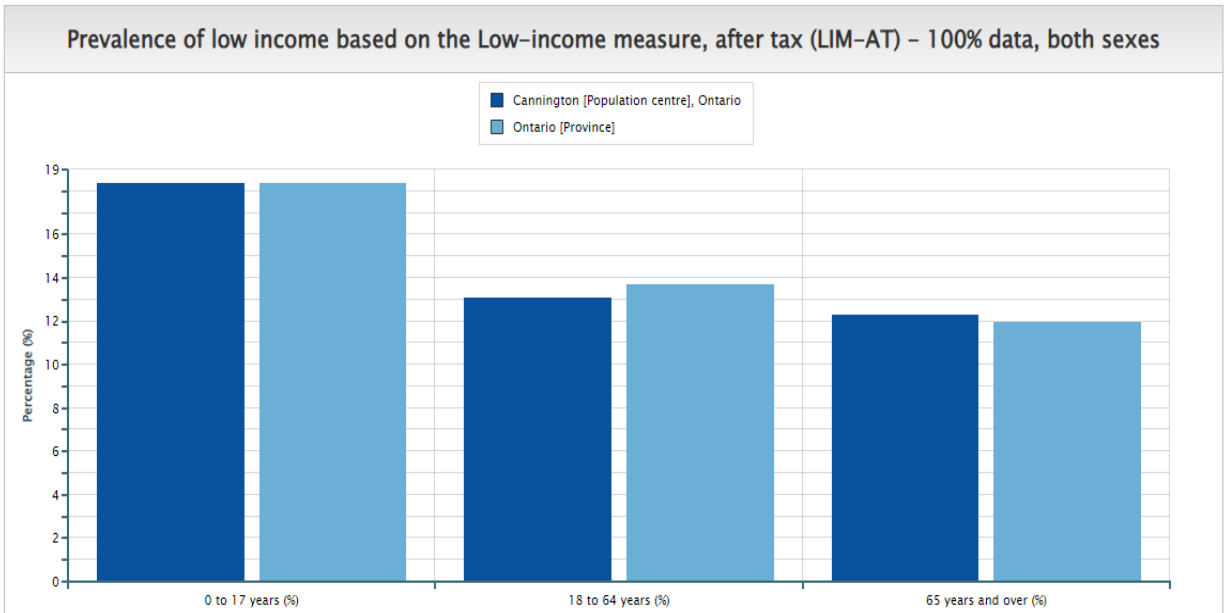


Figure 7: Prevalence of low-income with more than 12% in 18-64 years; as well as more than 12% 65 years and above within the population of Cannington (Statistics Canada, 2016a)

The agricultural livestock of this township is the driving force in the economy, however, with globalization and intensification with land-based activities, this may need restructuring within the official plans. The Official Plan of the Township of Brock covers land-use and has a heavy focal point on future growth to ensure development and sustainability (Official Plan the Corporation of the Township of Brock, 2022). The plan adheres to provincial frameworks of the A Place to Grow: Growth Plan for the Greater Golden Horseshoe (GGH), and the Provincial Policy Statement (PPS). Both these plans are related to provincial planning frameworks, but they do not mention food systems planning. These planning frameworks do iterate that local food should be protected for future generations through sustainable farming and preservation of natural areas, but

this is not addressing the issues of food insecurity, but rather addressing that agricultural preservation is inherently needed for food production.

It is promising to see that the township includes that the proposed framework will balance population and economic growth with the need to protect the natural environment by guiding decisions affecting the use of land (Official Plan the Corporation of the Township of Brock, 2022). However, food security is not inclusive or directly a part of the local planning framework either. Most of the goals of this plan are vague when referring to community development, and resources are presumed to be allocated on economic growth and expansion for economic opportunities within manufacturing, agriculture, and tourism (Official Plan the Corporation of the Township of Brock, 2022). Within the planning framework there are goals to maintain and develop existing infrastructure and promote healthy communities; local food system planning should be included at this level. Regionally, food security is supported in Durham Region's Official Plan, but action has been taken on by non-government community organizations, the municipality has yet to impose strategies to implement legislation, regulations, or policies and programs.

Contemporary food systems are corporate controlled and centralized food processing undermines community efforts. Regardless of this, Cannington, Ontario has developed grassroot initiatives to combat food insecurity within the township. Cannington has the Nourish and Develop Foundation, an organization that strives to provide locally sourced foods to be available to all. This is done through community-based programming and establishing community partnerships. Local food is acquired for these programs through donation and advocacy. Locally sourced food is an


important pillar to the organization's mandate. This is the only community-based organization in Cannington that focuses on food security and accessibility in forms of different programming and initiatives. Some of the innovative programs they have implemented are mobility in their food markets, free-standing food markets and hubs, community gardens, community kitchens, food banks, and food related programming to educate the community about food insecurity through webinars and in-person seminars (Nourish and Develop Foundation, 2022). The way in which this organization prioritizes the goals of their programs is through community surveys. These surveys give these initiatives insight about specific community needs and interests. This is one of the ways in which measurement of food insecurity is being collected in Cannington.

One of these community needs surrounds accessibility. The innovative solution to address this situation was the development of a Mobile Food Market. This is done through a refrigerated van that sets up in various locations to offer fresh local produce, meal kits, and prepared meals at affordable prices (Nourish and Develop Foundation, 2022). This initiative considered that several areas within the township were barren in terms of having low access to affordable, fresh, and nutritious food. Through partnership with local food producers and agricultural sectors, this organization is able to receive donated fresh produce. Rural areas are often troubled with deteriorating infrastructures and rely on automobiles or vehicles to travel. Travelling can be a strain on several community members, so the Mobile Food Market initiative is inclusive in that regard. Figure 8 represents the Mobile Food Market Menu; all at affordable price points for the community, as well as options for prepared meals and meal kits (Nourish and Develop

Foundation, 2022). These menus are created based on the dates the Mobile Food Market will be at location.


Produce

WASH BEFORE CONSUMING, LOCALLY GROWN



Garlic
\$1.50/ea




Beets.....\$1.50/lb	Miner’s Lettuce.....\$1/bag	Rutabaga.....\$3/ea
Carrots.....\$1.50/lb	Onions.....\$1.50/ea	Salad Mix.....\$2/bag
Celeriac.....\$2/ea	• Red Onions	Spinach.....\$2/bag
Garlic.....\$1.50/ea	• White Onions	Sweet Potatoes.....\$2/quart
Kale.....\$3/bunch	Potatoes.....\$2/quart	
Lettuce.....\$2/ea		




*Subject to availability


Prepared Meals


Single-servings; by donation
(recommended \$5/meal):

- French Onion Soup
- Couscous & Veggie Salad  
- Cheeseburger Mac'n'Cheese
- Mac'n'Cheese 

Symbols:

 *Gluten free*


 *Vegetarian*

 *Vegan*

Meal Kits

\$7.00/ea - All of the ingredients, a recipe and a YouTube video to follow along with Chef Edna!
Easy and fun for all ages.

- Quick Curry Ramen



NEW: Market Bucks

Learn more on our website!

Figure 8: Mobile Food Market Menu. Providing innovative solutions to rural areas that have limited access to grocery stores, ensuring food security and quality/nutritious food (Nourish and Develop Foundation, 2022)

Aside from the Mobile Food Market, another innovative program is the Community Kitchen. This program serves as a way in which this organization can promote sustainable food systems by using local produce from local farmers, increase food literacy, and preservation techniques to deter food waste. This community kitchen

provided meals for local schools and events. This initiative also included online cooking classes and recipes for community members to access in their households (Nourish and Develop Foundation, 2022). Programming directed at schools and youth through the community kitchen obtained the ability to provide local student nutrition programs to become self-sufficient.

A suggestion from this organization was to recognize community gardens as essential services, as well as make outdoor growing spaces more available for individuals to grow their own food (Nourish and Develop Foundation, 2022). Another benefit from this organization is that accessibility and community needs are being closely monitored. Figure 9 provides insight on the demographic that accesses the organization for food assistance.

Main Source of Income for Food-Insecure Households

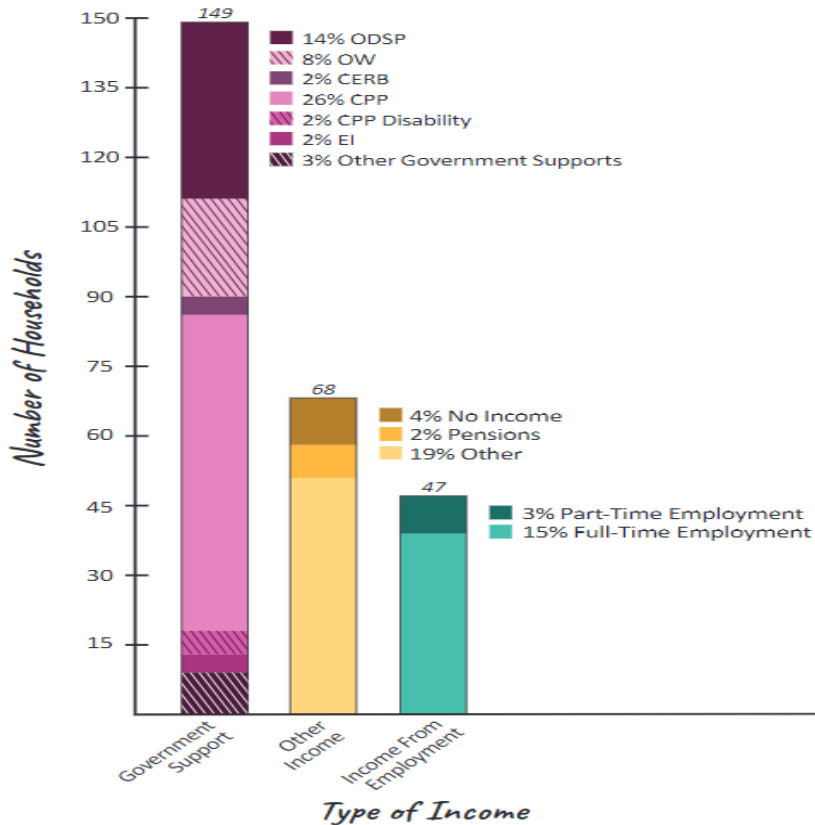


Figure 9: Main source of Income: reflects 18% of community members are employed, while 57% of community members that use these services are social assistance recipients (Nourish and Develop Foundation, 2022)

The goal of this organization is to move from local to national level change toward a more sustainable food system. Within the Annual Report, The Nourish and Develop Foundation has developed another community-based program that will address how food system policy at different government levels can reduce food insecurity by creating a Development Team (Nourish and Develop Foundation, 2022). It is mentioned that a more consolidated food systems plan is needed to join provincial and national campaigns to ensure food security for all. This is a goal to implement a national food

policy. As the cost of basic needs is raising exponentially, this organization recognizes that they are a safe-guard and provides immediate food assistance through their programs. For future programming, the organization plans to tackle issues that are relational to food insecurity like housing, employment, and mental health which are all interrelated social determinants.

Community-based initiatives in Cannington, Ontario exemplify the benefits of local food system initiatives. Local food systems would provide more produce to their organization and provide nutritious, and healthy food choices to the community. Measurement of food insecurity must be more accurate in this community because they are missing the amount of the population that do not use their services. The goals of this organization in Cannington is to develop ways in which they can implement their services on a provincial and then national scope, suggesting that the innovative strategies that they are using are able to influence national food policy.

4.2 North Frontenac, Ontario

North Frontenac, Ontario is in Frontenac County in eastern Ontario. This area is home to just under 2000 people, approximately 1898 (Statistics Canada, 2016). However, there are over 7000 residents that own or rent cottages or campsites in North Frontenac. They are considered the heart of Eastern Ontario's cottage country (North Frontenac Community Profile, 2013). This is a very rural community that has a large ageing population. This is mostly due to retirees moving to lakeshore dwellings (North Frontenac Community Profile, 2013). As shown in Figure 10 where a significant part of the population is above 60, and Figure 11 shows the median age of the population is

just above 50. Ageing populations often face accessibility issues and barriers to social services. Transportation and travel within a densely rich area of unpopulated land is difficult in terms of availability of food sources. There are concerns surrounding the community's aging population and accessibility, and the maintenance of farms and agriculture.

There have been instances of food shortages because rural access is impossible without transportation. As the population ages, the role of farming and local agriculture depletes because of youth out-migration. In 1930, 31% of the population farmed, that percentage is 1.2% presently (Kenny, 2016). The farmlands are not expanding or providing economic development for the community if there is no labour force in this sector, another concern regarding this is lack of access to farmland because of cost. Within the Official Plan of this township, there are several sections in reference to preserving farmland and helping the agricultural sector grow, but no real implementation or action has been seen in the community to provide affordable access to these lands for those wanting to be a part of the agricultural sector (Kenny,2016). Figure 12 represents the population percentage that is within low-income categories (Statistics Canada, 2016); it is difficult to make profit or strides within economic development if agricultural wages are not rising with the rising cost of basic needs.

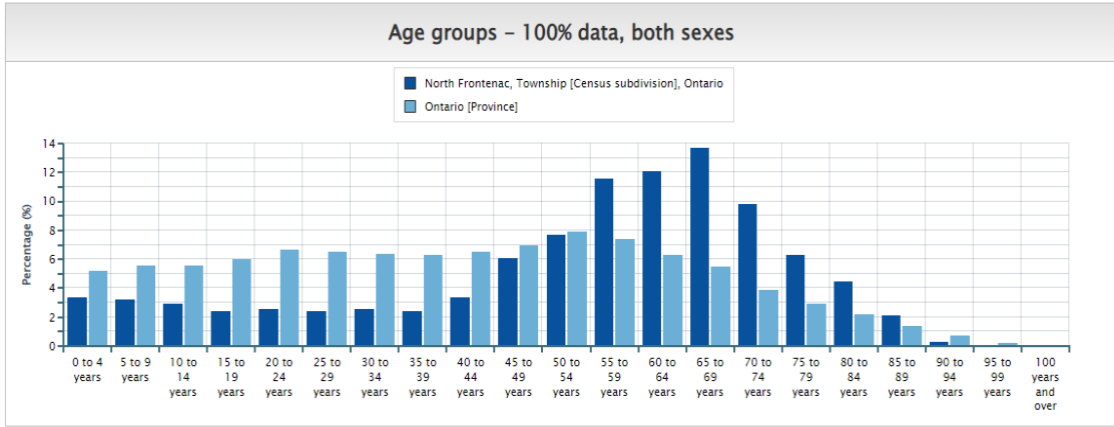


Figure 10: Age Groups of North Frontenac and Ontario – majority of North Frontenac is within 65-69 year age categories (Statistics Canada, 2016b).

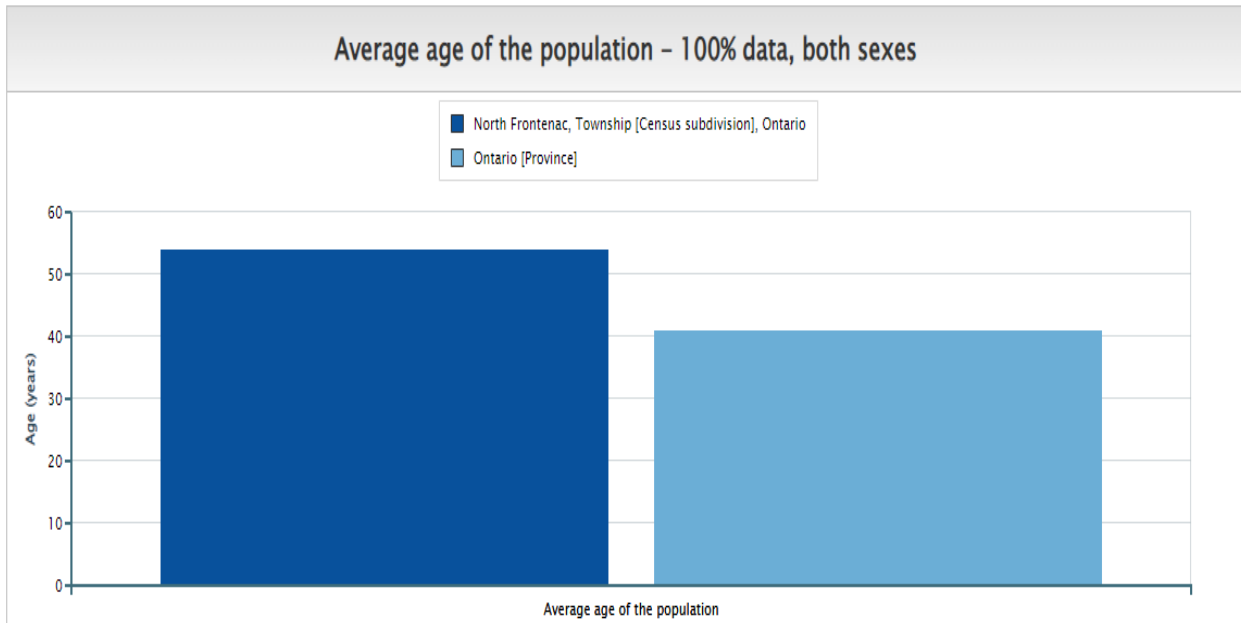


Figure 11: Age Groups of North Frontenac and Ontario – Median age is 54 years in North Frontenac (Statistics Canada, 2016b).

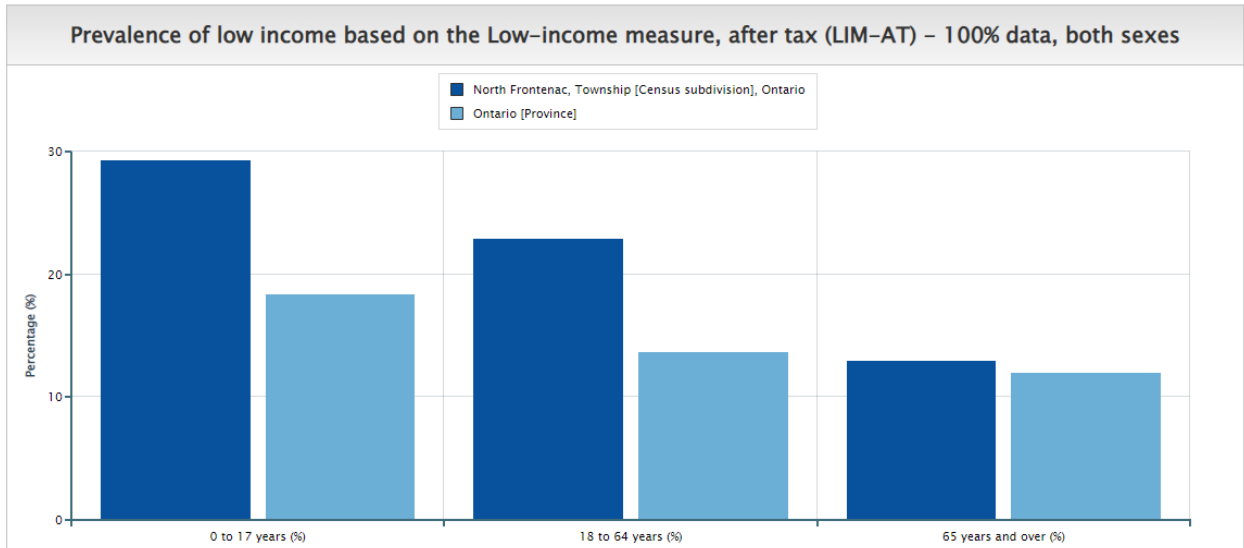


Figure 12: Percentage of North Frontenac within low-income status. 22.9% of 18-64 years of the population, and 13% of 65 years and above in North Frontenac (Statistics Canada 2016b)

North Frontenac’s Official Plan focuses on future development of the township, as well as outlines land-use policies in the context of growth. The Official Plan does consider the rural community and geography of the township, which outlines environmental and agricultural protection of lands based on the PPS (Township of North Frontenac, 2017). In section 1.7 of the PPS: “sustaining and enhancing the viability of the agricultural system through protecting agricultural resources, minimizing land use conflicts, providing opportunities to support local food, and maintaining and improving the agri-food network” (Provincial Policy Statement, 2020). Again, more emphasis relies on the agricultural industry, rather than local food systems and food security itself.

However, as previously stated, the food production and agricultural sector are vital in food systems and supply. Food security within Frontenac County is managed with food

banks, local food production, social dinners, and programs like Meals on Wheels (Torrance & Gray, 2021), all on a volunteer basis. Meals on Wheels has been a pillar in the community services sector. This is one of the ways in which North Frontenac is addressing the ageing population and accessibility to nutritious food. This community-based programming is not “new” in terms of innovation, but the way in which the township provides a social element to the service lays a foundation of trust among residents within the community. Volunteer drivers keep the community connected through food, as well as check the wellbeing of the client (Green, 2021). This program has been growing in demand among senior citizens and community members. This program has also allowed family members that live away from their senior relatives to ensure they are receiving nutritious meals on a weekly basis, as well as social interaction from volunteers (Green, 2021). Rural access to food can be difficult without proper transportation, very few rural communities have grocery stores or convenience stores within walking distance to residents. Frontenac County has grocery stores, but they are scattered over a vast amount of area (Kenny, 2016), shown in Figure 13.

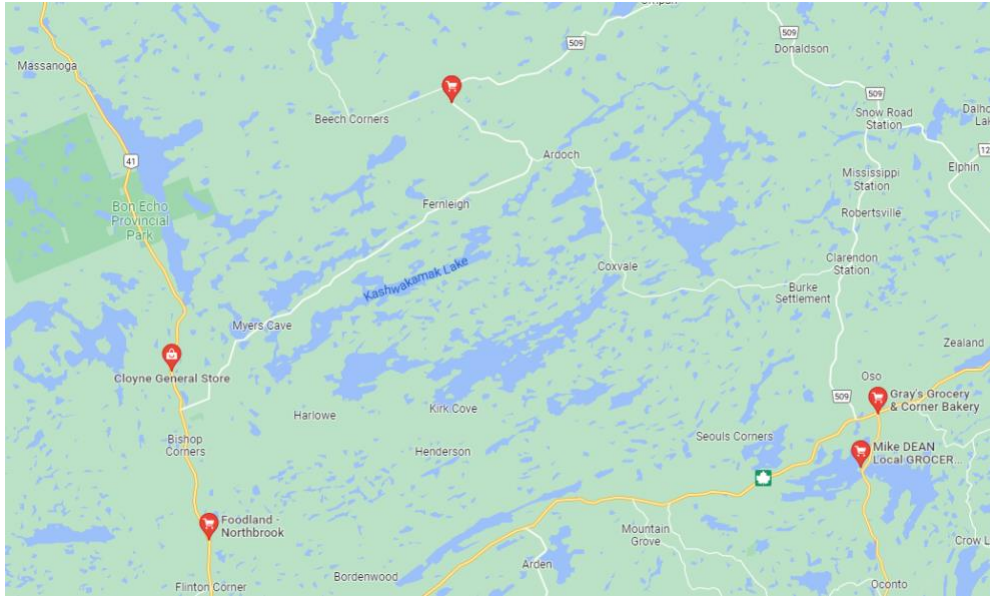


Figure 13: Within the boundaries of North Frontenac, grocery stores are not accessible to many in the geographic area (Maps, 2022).

This is the reason why this programming is vital to the community, it provides access to nutritious and healthy meals, as well as wellness checks to senior residents.

Other initiatives that combat food insecurity within this township are charitable food banks. The traditional emergency-based approach to food insecurity. Unfortunately, the issues of accessibility, especially during winter months, is a large barrier to community members using this service. There is limited information about the food banks located in Frontenac County, other than they have short opening hours and provide locally donated food for those that use the services. These food banks are scarce and mandated for emergency needs, not long-term solutions to food insecurity (Community Navigation of Eastern Ontario, 2020). There is also an eligibility criterion and an application process to use these services, which is very limiting. Being within a highly dense agricultural area, the assumption would be that there would be more emphasis

on local foods or local food systems, however, the limited resources in this area creates barriers to implementation of local food system institutions.

North Frontenac has community-based programming that focuses on social inclusion and food access to senior citizens. The community is mostly seniors or those that have cottages. The permanent residents in this community are ageing and often have mobility issues, this directly effects their ability to obtain food and necessities. The importance of local food systems in these communities would benefit greatly since there would be less barriers to retrieving food since distribution would be localized. North Frontenac could benefit from more innovative solutions like the Mobile Food Market in Cannington. A national food policy would help this area because it would address the general goals, but also cater to the issues of transportation and food distribution in this community.

4.3 Cobourg, Ontario

Cobourg, Ontario is located in the Greater Golden Horseshoe. This city has an approximate population of 19000 and it would be considered a CA or small town. This town has a significant percent of the population above the age of 50, as seen in Figure 14. This suggests that Cobourg also has an ageing population that must be included in community-based programming to deal with potential inability to access food because of transportation or mobility barriers.

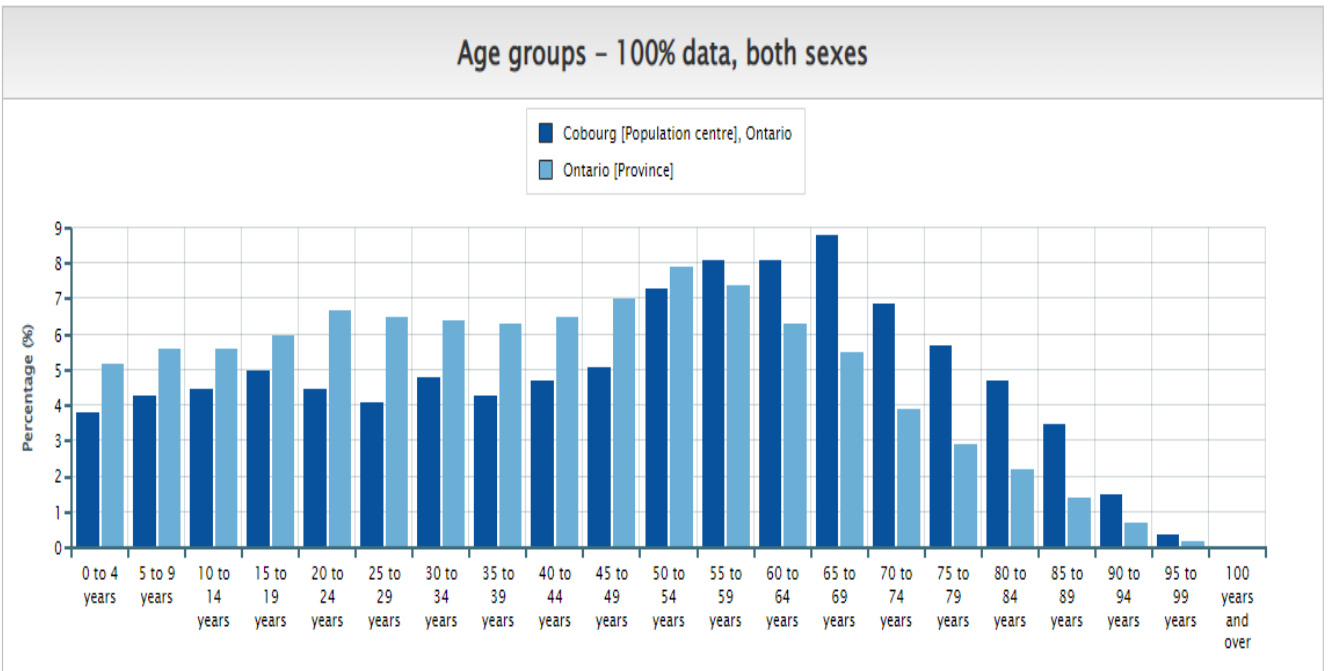


Figure 14: Age Groups of population of Cobourg, Ontario (Statistics Canada, 2016c)

Cobourg, Ontario

This community also has a Meals on Wheels program that caters to the elderly, though there is not much data collected on how efficient this program is performing. This community-based initiative is run by volunteers and attempts to provide healthy and nutritious meals to a senior population. Another program that caters to the senior population in Cobourg is the Seniors Nutrition Project from The Community Training and Development Centre. The mission of this project is to develop a toolkit to highlight the importance of nutrition and health for older adults. This project acknowledges that the community is ageing-in-place and should take safeguards to allow seniors to obtain information on how to eat healthy and make recipes with nutrient dense foods at minimal costs (The Community Training and Development Centre, 2022). The toolkit not only provides nutrition and healthy eating information, but also exercise, brain health, and the importance of social connection. All information is available online and

encourages feedback through surveys (The Community Training and Development Centre, 2022). The way in which this community-based initiative is combatting food insecurity is through the means of education.

Furthermore, the most recent census data illustrates that Cobourg matches the low-income percentage for all the province for the 18-64 years of age range, as well as exceeds the provincial percentage from 0-17 years. Figure 15 represents the prevalence of low-income based in relation to age in Cobourg and Ontario. Related to this, a 2011 study in Cobourg, Ontario measured low-income and its connection to food insecurity. The study iterated that those with low-income are most vulnerable to food insecurity and many seek out emergency services like charitable food programs to receive free or low-cost food (Tsang & Azevedo, 2011).

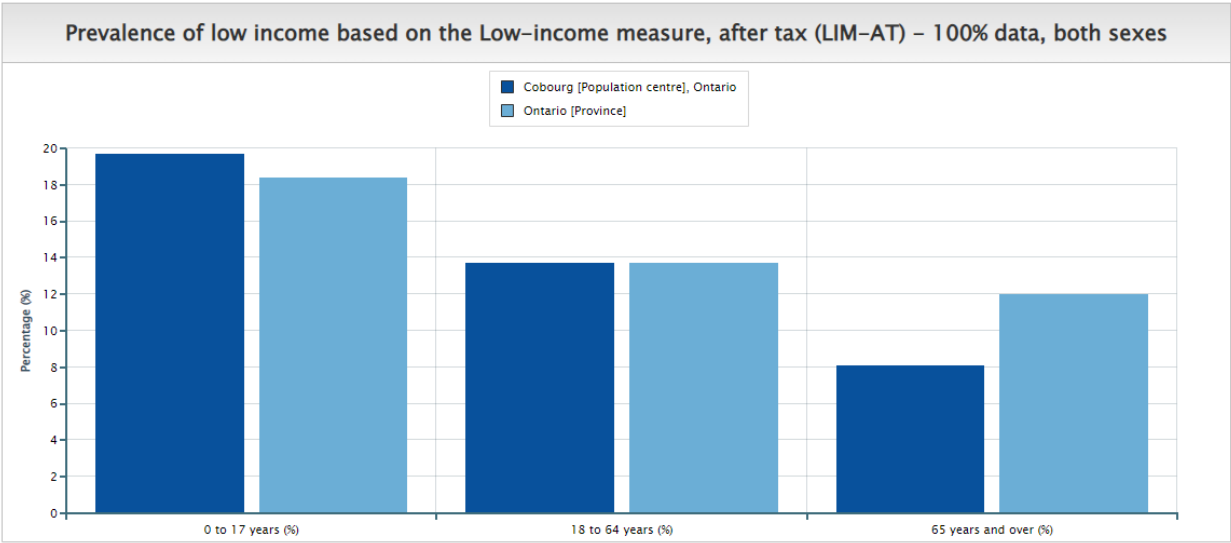


Figure 15. Prevalence of low-income based on the low-income measure for Cobourg Ontario and Ontario (Statistics Canada, 2016c).

The method of the study was to interview food program clients using structured 1:1 interview with open-ended questions (Tsang & Azevedo, 2011). The study resulted in food program clients suggesting that the issues surrounding food insecurity dealt with accessibility, lack of transportation, food programs having insufficient amounts of food or quality foods, and fresh fruits and vegetables were always limited (Tsang & Azevedo, 2011). The suggested outcome of this study was to improve local food programming, but also identify other community-led initiatives like community gardens as a resolution to lack of available produce. Many barriers can be opportunities for community partners to help low-income individuals become more food secure (Tsang & Azevedo, 2011).

Other than food related charitable programs, Cobourg has another community-based initiative that relates to flash freezing food. The Canadian government supported The Community Training and Development Centre to receive a grant for a blast chiller and dehydrator to further maximize meals' nutritional value through blast freezing (The Community Training and Development Centre, 2022). This allows for community programming to use food that will last longer since blast freezing food is a form of preservation. Freezing halts the activities of spoilage microorganisms in and on foods and can preserve for longer periods of time, and has an overall excellent safety record (Archer, 2004). This food is used in community programming or donated to food assistance programs in the area.

Moreover, Cobourg has several different community-based initiatives to deal with food insecurity, one of the reasons why could be because the Official Plan fails to mention any policy or regulation regarding food, food security, or local food systems. It should also be noted that this plan does not have policies or goals related to the

preservation of agriculture either. They do mention that farmhouses and farms will be preserved based on historical importance and farm related buildings and structures will not be subjected to site plan control, which includes by-laws (The Town of Cobourg, 2018). The basis of this plan is to follow the PPS, which does have agricultural practices and preservation outlined in relation to long-term economic prosperity. It could be assumed that Cobourg is relying heavily on the province instead of implementing its own local food system in the planning framework.

4.4 Dryden, Ontario

Dryden, Ontario has a population of approximately 7749 people (Statistics Canada, 2016). Dryden is located in the Kenora District within Northwestern Ontario. Formerly known as New Prospect, Dryden is the least populous community in Ontario incorporated as a city (Statistics Canada, 2006). Figure 16 and Figure 17 represent that the population of Dryden is aging, with an average age of 45 and the majority of the population is above the age of 50. This is another rural community that must focus on their community members ageing-in-place and provide programs that support that fact.

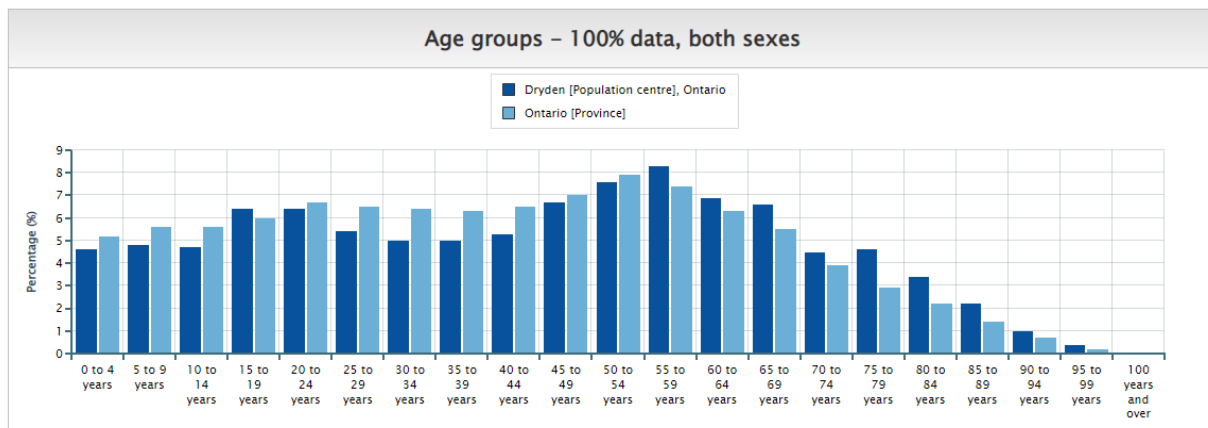


Figure 16. Age Groups representing an ageing population in Dryden, Ontario (Statistics Canada, 2016d).

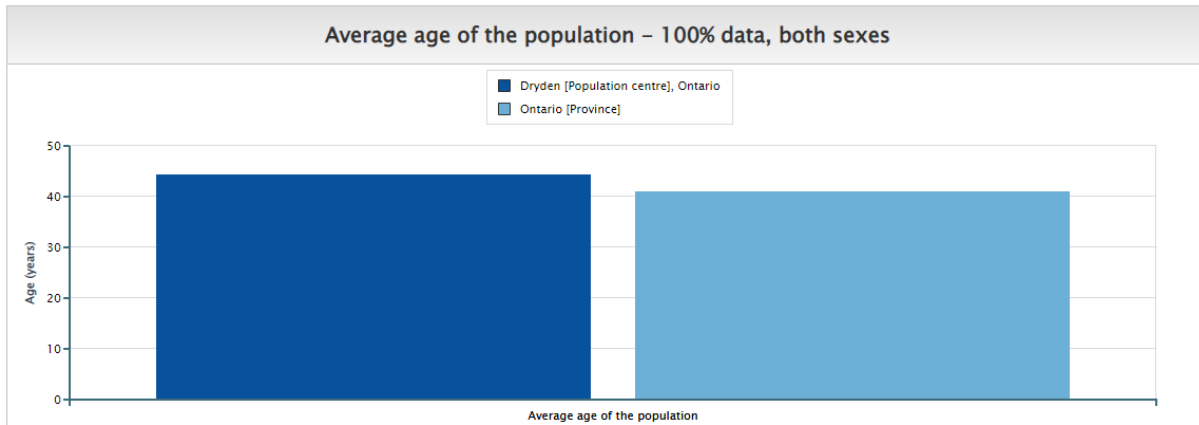


Figure 17. Average age of population is 45 years of age in Dryden, Ontario (Statistics Canada, 2016d).

Looking at Dryden’s Official Plan, supporting local food producers and promoting value in agricultural products, as well as encouraging shopping locally is mentioned in the goals the economic development vision and objectives (City of Dryden, 2012). Though they don’t have policies surround food security specifically, the highlight of shopping locally provides insight that Dryden may understand that local food systems are important toward sustainability.

Community-based initiatives in this town come in the form of food banks and different innovations in agriculture. The Dryden Food Bank is a voluntary organization that provides donated food and essentials to individuals in Dryden that need assistance (Dryden Food Bank, 2022). It is considered a Christian charity and they provide emergency supplementary food assistance. They have also developed a food hamper program that provides allotted times for registered food bank clients to pick up hampers

containing 3 days of supplementary food assistance depending on availability (Dryden Food Bank, 2022). The opening hours of this food bank are limited, which may result into accessibility issues and limited services for people. However, the food bank strives to acknowledge that hunger is a problem within their community.

Moreover, there is an upcoming organization that has developed farming hydroponic systems to use 90% less water and no pesticides called AgriTech North. They strive to reduce fresh produce costs by 25% and increase availability in the community year-round by vertical farming (AgriTech North, 2022). This organization has also partnered with 3 Points in Space Media, an aviation training institute, to deliver fresh produce via drone technology (AgriTech North, 2022). They have also partnered with 807 Food Cooperative to create subscription boxes of fresh leafy greens and crops (AgriTech North, 2022). This community-focused entrepreneurship has made technological advances in the agricultural industry, as well as addressed the issues of food insecurity within the community in an innovative way. This is an organization that grows and produces the fresh fruits and vegetables then directly provides it for the consumer. It can be argued that this community-focused organization has created a link to its own local food system. They are partnered with organizations that provide grant funding, academic institutions, as well as lending agencies. They also accept monetary donations because this service is not free of charge to the consumer, but rather, reduced costs.

5. Findings

The case studies illustrated several of the themes highlighted in the literature review, referencing the limitations of food banks and emergency supplementary services. They are limited because of lack of quality foods because they rely heavily on donated food items, as well as lack of access. The case studies also illustrated that social determinants of health like low-income and social exclusion interrelate with food insecurity. These case studies also validated that rural communities have higher rates of ageing populations which need to address the importance of accessibility and mobility. Unfortunately, most food assistance programs and organizations need funding to remain sustainable. They are short-term solutions to a consistent issue and several community-based programs and initiatives have illustrated this through the need of monetary donations or grants. Striving toward a local food system to implement on the municipal level may be able to provide insight on provincial frameworks, then inform national food policy. The community-based initiatives are striving toward a significant grassroots-type of movement to inform change nationally through the levels of government.

5.1 Study Limitations

Though the chosen case studies were different, the demographic profiles were similar in the sense that all communities were ageing populations with similar community-based initiatives toward food insecurity. There are also limitations because this research has concluded on generalizations when knowingly, all communities have unique needs. The reasons why the study concludes on a generalized basis is because

the measurement of food insecurity is difficult to obtain, most information and data collected is inaccurate because several communities are neglected or unrepresented. As mentioned before, the measurement of food insecurity is integral in evaluating the efficiency of food programs, as well as risk factors and provides insight for policymakers (Alvarez et al., 2021; McIntyre et al., 2015; Tarasuk & Mitchell, 2020). Measuring food insecurity accurately is highly recommended because this data needs to adequately assess and monitor in the appropriate scope. The province and municipalities need to be more diligent in obtaining this data, it cannot heavily rely on non-governmental sources like food assistance programs because it does not capture the whole populace, just the percentage of people that use these programs.

5.2 Concluding Remarks

Despite the ample evidence on the relationship between food insecurity and health, government actions are at odds with a social determinants approach to health in general. Canadian governments are not seriously addressing the role that they should have to ensure that food security is experienced by all citizens. Therefore, the responsibility of this burden is put on communities and community-based organizations. Though there is an apparent need for local food systems, current literature outlines that without more support from higher levels of government, local and alternative food systems may reach the limits of both supply and delivery (Wittman et al., 2012). This is because most local food goes through the conventional food supply chains, which are to go through to supermarkets and larger companies rather than smaller local farmers' markets (Wegener et al., 2012; Wittman et al., 2012). Local systems are a topic of contention because policy development is complicated with several different ecological,

economic, and cultural needs taking place in specific regions (Wegener et al., 2012; Wittman et al., 2012). There are also concerns because local food systems are burdened with attempting to meet consumer expectations in terms of cost and convenience (Johnson et al., 2016). Appropriate production and distribution support is needed because the number of farmers are in decline with youth out-migration and impending retirement age within rural communities (Brovarone & Cotella, 2020; Metrass-Mendes et al., 2014) Agricultural production entities of fresh produce may also be more inclined to direct products to speciality marketing and larger corporations because of monetary gain and the overall survival of small farming enterprises (Bloom & Hinrichs, 2010; Wittman et al., 2012), making no real commitment to local food systems. These farmers' markets and agricultural sources of local produce are crucial for socioeconomic infrastructure to build local food systems (Gillespie et al., 2007; Wegener et al., 2012; Wittman et al., 2012), without product, the system cannot exist. Community-based initiatives are beneficial for a short-term, they cannot be sustainable without a working local food system to support them.

References

- Agarwal (2014) Food sovereignty, food security and democratic choice:critical contradictions, difficult conciliations, *The Journal of Peasant Studies*, 41:6, 1247-1268
- AgriTech North, (2022). About AgriTech Better than Organic. *AgriTech North*. Retrieved from: <https://www.agritech-north.ca/>
- Álvarez, E., Salinas-Roca, B., Costa-Tutusaus, L., Milà-Villarroel, R., & Shankar Krishnan, N. (2021). The measurement of food insecurity in high-income countries: A scoping review. *International journal of environmental research and public health*, 18(18), 9829.
- Asad et al., (2021). Report: Defining Rural. *Spatial Determinants of Health Lab*. Carleton University. DOI:10.22215/sdhlab/2020.3
- Beingessner & Fletcher, 2019. Going Local: farmers' perspectives on local food systems in rural Canada. *Agriculture and Human Values* 37; 129-145
- Benecki, L. A., Andrew, J. S., & Chan, Y. E. (2014). Evaluating the feasibility of an affordable housing and community centre: A case study from rural Ontario. *Journal of Rural and Community Development*, 9(2), 67-80.
- Born, B., & Purcell, M. (2006). Avoiding the local trap: Scale and food systems in planning research. *Journal of planning education and research*, 26(2), 195-207.
- Braun et al., (2021) Food Systems – Definition, Concept and Application for the UN Food Systems Summit. The Scientific Group for the UN Food System Summit. *Science and Innovations for Food Systems Transformations*; 27-3
- Brott, H., Kornbluh, M., Incaudo, G., Banks, L., & Reece, J. (2019). Placing a spotlight on rural homelessness: Identifying the barriers and facilitators to successfully supporting homeless families within rural communities. *Journal of Poverty*, 23(3), 179-201.
- Brovarone, E., & Cotella, G. (2020). Improving rural accessibility: A multilayer approach. *Sustainability*, 12(7), 2876.
- Bruce, D. (2006). Homelessness in rural and small town Canada. In *International perspectives on rural homelessness* (pp. 75-90). Routledge.
- Buck-McFadyen, E. V. (2015). Rural food insecurity: When cooking skills, homegrown food, and perseverance aren't enough to feed a family. *Canadian Journal of Public Health*, 106(3), e140-e146.

- Buck-McFadyen, (2021). Competing perspectives on rural homelessness: Findings from a qualitative study in Ontario, Canada. *Health and Social Care Community* 30; e2003- e2011
- Buck-McFadyen. (2022) Rural homelessness: how the structural and social context of small-town living influences the experience of homelessness. *Canadian Journal of Public Health* 113:3, pages 407-416.
- Campbell, M. C. (2004). Building a common table: The role for planning in community food systems. *Journal of planning education and research*, 23(4), 341-355.
- CAFTA, (2022). Agri-Food Exports by Sector. *Canadian Agri-Food Trade Alliance*. Retrieved from: <https://cafta.org/agri-food-exports/cafta-exports>
- Chinnakonda, D., & Telford, L. (2007). *Local and regional food economies in Canada: Status report*. Sectoral Policy Directorate, Food Quality, Agriculture and Agri-Food Canada.
- City of Dryden, (2012). Official Plan. *City of Dryden*. Retrieved from: <https://www.dryden.ca/en/city-services/official-plan.aspx>
- Clancy & Ruhf, (2010). Is Local Enough? Some Arguments for Regional Food Systems. *Agricultural and Applied Economics Association* 25 (1); 1-6
- Clapp, Jennifer (2014). Food security and food sovereignty: Getting past the binary. *Dialogues in Human Geography* 4(2); 206-211
- Community Navigation of Eastern Ontario, (2020). Township of North Frontenac Record Detail. *CNEO*. Retrieved from <https://cneo-nceo.ca/record/68951394/agency/>
- Connell, et al (2013) Food sovereignty and agricultural land use planning: The need to integrate public priorities across jurisdictions. *Journal of Agriculture, Food Systems, and Community Development* 3 (4); 117-124
- Crivits & Paredis, 2013. Designing an explanatory practice framework: Local food systems as a case. *Journal of Consumer Culture* 13 (3); 306-336
- Crowe et al (2011). The case study approach. *BMC Medical Research Methodology* 11 (100); 1-9
- Dachner, N., & Tarasuk, V. (2018). Tackling household food insecurity: An essential goal of a national food policy. *Canadian Food Studies/La Revue canadienne des études sur l'alimentation*, 5(3), 230-247.
- Deaton. Brady (Host)., (2011, October 19) Understanding Rural Canada [Audio podcast transcript]. In *Fare-talk*. University of Guelph. Retrieved from: <https://www.uoguelph.ca/fare/FARE-talk/transcripts/understanding-rural-canada.html>

- Dorosty, A. R. (2016). Food insecurity and chronic diseases: the editorial. *Nutrition and Food Sciences Research*, 3(3), 1-2.
- Edge & Meyer, (2019). Pursuing dignified food security through novel collaborative governance initiatives: Perceived benefits, tensions and lessons learned. *Social Science & Medicine* 232; 77-85
- Feagan, (2007) The place of food: mapping out the 'local' in local food systems. *Progress in Human Geography* 31 (1); 23-42
- Fearne, A., Álvarez-Coque, J. M. G., Mercedes, T. L. G. U., & García, S. (2013). Innovative firms and the urban/rural divide: the case of agro-food system. *Management Decision*.
- Food Secure Canada, (2022). Food Policy. Food Secure Canada. Retrieved from: <https://foodsecurecanada.org/policy-advocacy>
- Gucciardi, E., Vahabi, M., Norris, N., Del Monte, J. P., & Farnum, C. (2014). The intersection between food insecurity and diabetes: a review. *Current nutrition reports*, 3(4), 324-332.
- Gucciardi, E., Vogt, J. A., DeMelo, M., & Stewart, D. E. (2009). Exploration of the relationship between household food insecurity and diabetes in Canada. *Diabetes care*, 32(12), 2218-2224.
- Gundersen, C., & Ziliak, J. P. (2015). Food insecurity and health outcomes. *Health affairs*, 34(11), 1830-1839.
- Gundersen, C., Tarasuk, V., Cheng, J., De Oliveira, C., & Kurdyak, P. (2018). Food insecurity status and mortality among adults in Ontario, Canada. *PloS one*, 13(8), e0202642.
- Guthman, J. (2008). Bringing good food to others: Investigating the subjects of alternative food practice. *Cultural geographies*, 15(4), 431-447.
- Halbe, J., & Adamowski, J. (2019). Modeling sustainability visions: A case study of multi-scale food systems in Southwestern Ontario. *Journal of environmental management*, 231, 1028-1047.
- Halseth & Rosenberg, (1995) Complexity in the Rural Canadian Housing Landscape. *The Canadian Geographer* 39 (4); 336- 352
- Homes, (2020). Researcher Positionality – A Consideration of Its Influence and Place in Qualitative Research – A New Researcher Guide. *International Journal of Education* 8(4); 1-10
- Jarosz, (2014). Comparing food security and food sovereignty discourses. *Dialogues in Human Geography* 4(2); 168-181

- Jessiman-Perreault, G., & McIntyre, L. (2017). The household food insecurity gradient and potential reductions in adverse population mental health outcomes in Canadian adults. *SSM-population health*, 3, 464-472.
- Johnson, R. (2016). The role of local and regional food systems in farm policy.
- Kiger & Varpio, (2020). Thematic analysis of qualitative data: AMEE Guide No. 131, *Medical Teacher*, 1-10
- Kirkpatrick, S. I., & Tarasuk, V. (2008). Food insecurity in Canada. *Canadian Journal of Public Health*, 99(4), 324-327.
- Landman, K., Blay-Palmer, A., Kornelsen, S., Bundock, J., Davis, M., Temple, K., & Cram, R. (2009). Models and best practices for building effective local food systems in Ontario. *Report prepared for OMAFRA*.
- Laraia, B. A. (2013). Food insecurity and chronic disease. *Advances in Nutrition*, 4(2), 203-212.
- Lee, R. (2007). Food security and food sovereignty. *CRE Discussion Paper*.
- Loopstra, R., & Tarasuk, V. (2012). The relationship between food banks and household food insecurity among low-income Toronto families. *Canadian Public Policy*, 38(4), 497-514.
- Loopstra, R., & Tarasuk, V. (2015). Food bank usage is a poor indicator of food insecurity: Insights from Canada. *Social Policy and Society*, 14(3), 443-455.
- MacRae, R. J., & Winfield, M. (2016). A little regulatory pluralism with your counterhegemonic advocacy? Blending analytical frames to construct joined-up food policy in Canada. *Canadian Food Studies*, 140-194
- Men, F., Elgar, F. J., & Tarasuk, V. (2021). Food insecurity is associated with mental health problems among Canadian youth. *J Epidemiol Community Health*, 75(8), 741-748.
- Mendly-Zambo, Z., & Raphael, D. (2018). Competing discourses of household food insecurity in Canada. *Social Policy and Society*, 18(4), 535-554.
- McIntyre, L., Bartoo, A. C., & Emery, J. H. (2014). When working is not enough: food insecurity in the Canadian labour force. *Public health nutrition*, 17(1), 49-57.
- McIntyre, L., Wu, X., Fleisch, V. C., & Herbert Emery, J. C. (2016). Homeowner versus non-homeowner differences in household food insecurity in Canada. *Journal of Housing and the Built Environment*, 31(2), 349-366.
- Moore, Eric and Andrejs Skaburskis. (2004) Canada's Increasing Housing Affordability Burdens. *Housing Studies*, 19 (3): 395-413.
- Mitura, V., & Bollman, R. D. (2003). Health of rural Canadians: A rural-urban comparison of health indicators.

- Mount, P. (2012). Growing local food: scale and local food systems governance. *Agriculture and Human Values*, 29(1), 107-121.
- North Frontenac Community Profile, (2013). Community Profile. *North Frontenac*. Retrieved from: <https://www.northfrontenac.com/en/township-services/resources/Documents/Clerk/2013NFComProfile.pdf>
- Nourish and Develop Foundation, (2022). Mobile Food Market. *Nourish and Develop Foundation*. Retrieved from : <https://tndf.ca/mobilefoodmarket/>
- Official Plan the Corporation of the Township of Brock (2022). Official Plan. Township of Brock. Retrieved from <https://www.townshipofbrock.ca/en/building-and-business-development/official-plan.aspx>
- Patel, (2009). Grassroots Voices: Food sovereignty. *The Journal of Peasant Studies* 36 (3); 663-706
- Penne, T., & Goedemé, T. (2021). Can low-income households afford a healthy diet? Insufficient income as a driver of food insecurity in Europe. *Food Policy*, 99, 101978.
- Pereira et al, (2020). Food system Transformation: Integrating a Political-Economy and Social-Ecological Approach to Regime Shifts. *Journal of Environmental Research and Public Health* 17 (1313); 1-20
- Pérez-Escamilla, R., & Segall-Corrêa, A. M. (2008). Food insecurity measurement and indicators. *Revista de Nutrição*, 21, 15s-26s.
- Polsky & Garriguet, (2022) Household food insecurity in Canada early in the COVID-19 pandemic. *Statistics Canada*. DOI: <https://www.doi.org/10.25318/82-003-x202200200002-eng>
- Polsky, J. Y., & Gilmour, H. (2020). Food insecurity and mental health during the COVID-19 pandemic. *Health reports*, 31(12), 3-11.
- Provincial Policy Statement, (2020). Under the Planning Act. *Government of Canada*. Retrieved from: <https://www.ontario.ca/page/provincial-policy-statement-2020>
- Raphael, D. (2016). Social determinants of health: Key issues and themes. *Social determinants of health: Canadian perspectives*, 3, 3-31.
- Riches, G., & Silvasti, T. (2014). Hunger in the rich world: Food aid and right to food perspectives. In *First world hunger revisited* (pp. 1-14). Palgrave Macmillan, London.
- Rosset, P. (2003). Food sovereignty: Global rallying cry of farmer movements. *Food First Backgrounder*, 9(4), 1-4.

- Sage, C. (2014). The transition movement and food sovereignty: From local resilience to global engagement in food system transformation. *Journal of Consumer Culture*, 14(2), 254-275.
- Silvasti, T., & Riches, G. (2014). Hunger and food charity in rich societies: what hope for the right to food?. In *First World Hunger Revisited* (pp. 191-208). Palgrave Macmillan, London.
- Skogstad, G. (2008). Canadian agricultural programs and paradigms: the influence of international trade agreements and domestic factors. *Canadian Journal of Agricultural Economics/Revue canadienne d'agroeconomie*, 56(4), 493-507.
- Snyder (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research* 104; 333-339
- Statistics Canada, (2001) Definitions of Rural. *Rural and Small Town Canada Analysis Bulletin*. Statistics Canada.
- Statistics Canada. (2016a). *Cannington [Population centre], Ontario and Ontario [Province]* (table). *Census Profile*. 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. <https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E>
- Statistics Canada. (2016b). *North Frontenac, TP [Census subdivision], Ontario and Ontario [Province]* (table). *Census Profile*. 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. <https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E>
- Statistics Canada. (2016c). *Cobourg [Population centre], Ontario and Ontario [Province]* (table). *Census Profile*. 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. <https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E>
- Statistics Canada. (2016d). *Dryden [Population centre], Ontario and Saskatchewan [Province]* (table). *Census Profile*. 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. <https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E>
- Statistics Canada, (2018). Household food insecurity, 2017/2018. *Health Fact Sheets*. Statistics Canada

- St-Germain, A. A. F., & Tarasuk, V. (2017). High vulnerability to household food insecurity in a sample of Canadian renter households in government-subsidized housing. *Canadian Journal of Public Health, 108*(2), e129-e134.
- Tarasuk, V. S., & Beaton, G. H. (1999). Household food insecurity and hunger among families using food banks. *Canadian journal of public health, 90*(2), 109-113.
- Tarasuk & Mitchell, (2020). Household food insecurity in Canada 2017-18. Toronto. Research to identify policy options to reduce food insecurity *PROOF*. University of Toronto.
- Tarasuk, V., & Vogt, J. (2009). Household food insecurity in Ontario. *Canadian Journal of Public Health, 100*(3), 184-188.
- Tarasuk, V. S. (2001). Household food insecurity with hunger is associated with women's food intakes, health and household circumstances. *The Journal of nutrition, 131*(10), 2670-2676.
- Tarasuk et al., (2005) Household Food Insecurity in Canada. *Top Clinical Nutrition 20* (4); 299 – 312
- Tarasuk, V., Cheng, J., De Oliveira, C., Dachner, N., Gundersen, C., & Kurdyak, P. (2015). Association between household food insecurity and annual health care costs. *Cmaj, 187*(14), E429-E436.
- Tarasuk et al., (2018). Commentary: The case for more comprehensive data on household food insecurity. *Health Promotion and Chronic Disease Prevention in Canada. Research, Policy and Practice 38* (5); 210 – 213
- Tarasuk, et al, (2018b) Geographic and socio-demographic predictors of household food insecurity in Canada, 2011–12. *BMC Public Health 19*, 12 (2019). <https://doi.org/10.1186/s12889-018-6344-2>
- Torrance, J., & Gray, S. (2021). Community Safety & Well-Being Plan.
- The Town of Cobourg, (2018) Official Plan. *Town of Cobourg* Retrieved from: <https://www.cobourg.ca/en/business-and-development/Official-Plan.aspx>
- The Community Training and Development Centre (2022). Senior Nutrition Project. The Community Training and Development Centre. Retrieved from: <https://ctdclearningplace.com/food/>
- Township of Brock, (2022). Map. *Cannington, Ontario*. Retrieved from: <https://www.townshipofbrock.ca/en/index.aspx>
- Wald, N., & Hill, D. P. (2016). 'Rescaling' alternative food systems: from food security to food sovereignty. *Agriculture and Human Values, 33*(1), 203-213.

- Weiler, A. M., Hergesheimer, C., Brisbois, B., Wittman, H., Yassi, A., & Spiegel, J. M. (2015). Food sovereignty, food security and health equity: a meta-narrative mapping exercise. *Health policy and planning*, 30(8), 1078-1092.
- Wegener, J., Raine, K. D., & Hanning, R. M. (2012). Insights into the government's role in food system policy making: improving access to healthy, local food alongside other priorities. *International Journal of Environmental Research and Public Health*, 9(11), 4103-4121.
- Willis (2014). The Advantages and Limitations of Single Case Study Analysis. *E-International Relations*; 1-7
- Windfuhr, M., & Jonsén, J. (2005). Food sovereignty: Towards democracy in localized food systems.
- Wittman, H., Desmarais, A., & Wiebe, N. (2010). The origins and potential of food sovereignty. *Food sovereignty: Reconnecting food, nature and community*, 1-14.
- Woods et al, 2013. Local Food Systems Markets and Supply Chains. *Agricultural and Applied Economics Association* 28(4); 1-5