Mobile Abattoirs in the Context of Canadian Local Food System Development: Niches and the Potential for Local Food System Resiliency

by

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A Thesis
presented to
The University of Guelph

Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Science in Rural Planning and Development

Guelph, Ontario, Canada

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ABSTRACT

MOBILE ABATTOIRS IN THE CONTEXT OF CANADIAN LOCAL FOOD SYSTEM DEVELOPMENT: NICHES AND THE POTENTIAL FOR LOCAL FOOD SYSTEM RESILIENCY

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Research conducted for this thesis focused on the unique local livestock processing models of mobile and modular abattoirs. The research aimed to answer the research question: Do mobile or modular abattoirs present potential for Ontario in terms of a) increasing access to local livestock slaughtering and processing and b) creating a more robust local food system generally. Methods used in the research included a literature review, jurisdictional scans, key informant interviews and case studies. Results of this research show that mobile and modular abattoirs can increase access to local livestock slaughtering and processing and can contribute to the development of more robust local food systems. Mobile and modular abattoirs also face a range of business challenges that must be considered when adopting the mobile processing business model. Overall, this evidence-based research suggests that mobile and modular abattoirs do present opportunity for the Ontario context and particularly for Northern Ontario.
Acknowledgements

I would like to thank Dr. Wayne Caldwell, my advisor for facilitating this journey by allowing me to pursue my own research interests. I would also like to thank my Co-Advisor, Dr. Chris Bryant for helping me understand how those research interests fit within a broader context.

Acknowledgement is also made of the Ontario Ministry of Agriculture and Food and the Ministry of Rural Affairs for funding provided through the New Directions Research Program.

I would also like to thank all of the participants of this research, without whom this research would not have been possible, for inviting me into their homes and businesses and sharing their stories.
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Chapter 1.0 Introduction to the Research Project and Methodology

1.1 Introduction

Agricultural development has initiated profound changes since the end of WWII, transforming the way that food is regarded through the creation of an international food system. Characterized by consolidation and intensification and catalyzed by market liberalization, the international food system has resulted in a myriad of complex issues that are of increasing concern to citizens worldwide. Persistent environmental threats due to modes of production, health concerns over the use of biotechnology, additives and further processing and increasing social and food-related disparities are some of the most prominent issues faced at present. While the conventional food system has effectively increased the distant between producer and consumer, or between farm to plate, an increasingly prominent interest in fostering localized food systems has been documented across the globe.

The push towards localized food systems has come forth from a broad range of stakeholders and reflects an equally broad range of intentions. For some, the development of local food systems means the ability to support local economies, eat fresher foods and ultimately have a higher degree of control over personal consumption. For others, localized food systems are a means of creating more resilient food systems that are not reliant on outside actors, such as large agro-food corporations or trading partners. Despite the intentions behind the development of local food systems, however, they all rely on the sufficient functioning of local food
supply chains in order to exist, much in the same way that the conventional food system relies on its respective food supply chain. While in provinces such as Ontario, development of the local food sector has taken a stronghold in terms of labeling programs, research and a diversity of local food initiatives, there are other areas of development that continue to be challenged. One area of the local supply chain that remains underdeveloped in Ontario and many Canadian provinces and territories is that of local meat slaughtering and processing. Indeed, challenges faced by producers (in accessing local meat slaughtering and processing services) and consumers (in accessing local meat) are documented across the country. These challenges tend to be particularly marked in more rural and remote regions, where spatial distance often results in a low density of available slaughtering and processing infrastructure. Other factors, however, play a part in this experienced lack of access including consolidation in the marketplace, policy and regulation. Nonetheless, demand for local meat continues to grow as people become increasingly invested in the concept of local food.

One unique and novel approach currently being utilized by several Canadian jurisdictions in attempt to overcome challenges related to a lack of access to local meat slaughtering and processing services is the mobile or modular abattoir slaughtering and processing model. Currently present across several Canadian provinces and territories, as well as many United States’ jurisdictions, this business model has been documented as a potential opportunity to facilitate expansion within rural and local meat sectors. Given the range of challenges faced within the
local meat sector in Ontario, including the sweeping loss of small, local slaughtering and processing facilities across Southern Ontario and an extremely underdeveloped local meat sector in Northern Ontario, this research sought to examine the unique business model of mobile abattoirs within the broad context of rural community economic development. More specifically, the research aimed to create a vigorous exposition of mobile abattoir business development within Canadian geographies through a comparative lens that would serve to further elucidate as to whether the mobile abattoir business model would be useful for consideration in the Ontario context.

1.1.1. Research Goal, Objectives, and Justification

Given the range of challenges within Ontario’s local meat processing sector identified by the current available research this research intended to probe further into the alternative processing model of mobile abattoirs, given the introduction of such units in several other Canadian jurisdictions where similar challenges to Ontario have been noted. From this perspective, the research sought to create a comparative research framework that would be capable of providing a) a review of mobile abattoir businesses and their relative successes, or lack thereof, across several Canadian jurisdictions; and b) an overview of how the mobile businesses fit and functioned within their respective jurisdictions’ economic, regulatory and

1 This thesis builds on the broader research project titled “Mobile Processing Facilities: Opportunities in the Rural Food Processing Sector” funded by the Ontario Ministry of Agriculture and
2 A more in-depth review of the challenges facing the local meat processing sector within Ontario can be found in Chapter 4.0 of this document, section 4.2
3 Reviews of the local livestock sector challenges facing Alberta, British Colombia, and the Yukon can be found in Chapter 5.0 of this document, sections 5.1, 5.2, and 5.2
geographical contexts. Therefore, by revealing a broader understanding of mobile abattoir business opportunity and challenge within place-specific contexts, the research project strived to create an evidence-based review that would function to inform both policy makers and potential business owners in Ontario as the discussion surrounding mobile abattoir development within the province continues. The central research question was therefore, do mobile or modular abattoirs present potential for Ontario in terms of a) increasing access to local livestock slaughtering and processing and b) creating a more robust local food system generally?

1.1.2 Methods

The research discussed here was undertaken using a mixed methods approach with a weighted focus on qualitative data collection. Using a descriptive, exploratory approach, data collected aimed to contribute to the understanding of the current state of mobile abattoir businesses in Alberta, the Yukon, and British Colombia. Because this information would be used for a comparative analysis to inform decisions within Ontario's local meat processing sector, the first method used was a review of the literature as it relates to a) the global food system b) the current state of local food system development within Ontario and c) local meat sector challenges within the context of Ontario. A review of the regulatory context in Ontario as it relates to the local meat-processing sector was also provided. In order to further enhance the research data as it related to the challenges within the local meat sector
for Ontario, key informant interview with Ontario abattoir, processing facility, and butcher shop owners were also undertaken. These interviews were also designed to gain an increased understanding of the demand for mobile abattoirs within Ontario.

In order to identify existing mobile abattoir businesses, and the context and frameworks that they function within, three jurisdictional scans were conducted in the Canadian provinces and territories where mobile abattoir development is most active. These jurisdictions included British Colombia, The Yukon, and Alberta. In order to provide insight into the similarities and differences of the various jurisdictions’ characteristics as they relate to mobile abattoir development, a variety of research areas were identified in order to enhance the robustness of the comparative, evidence-based framework of the research. Jurisdictional scans therefore reviewed local food system development, the local meat sector, the existing number of mobile abattoirs, mobile abattoir business challenge and success and finally the regulatory context for each jurisdiction. Conducting jurisdictional scans served to identify the current state of mobile abattoir businesses in each province or territory, as well as to situate their development within their relative economic, geographic and regulatory contexts. More specifically, analysis of each jurisdiction’s local food system and regulatory framework aided in understanding the development of mobile abattoirs within the context of rural economic community development and regulatory change, while analysis of the regulatory frameworks also functioned as a way of providing Ontario regulators with information on various policy approaches. The jurisdictional scans also helped to
identify where the most robust primary data collection could occur.

Given that the highest number of provincially or territorially based mobile abattoirs are found in British Colombia, it was in this province that the bulk of primary data was collected. Primary data collection of mobile and modular⁴ abattoir businesses was conducted in the form of case studies. Case studies focused on several aspects of each business and included semi-structured key informant interviews with business owners as well as photo documentation of facilities and equipment. For each case study, the mobile or modular abattoir was examined according to geographic location, agricultural community needs and the regulatory environment. Interviews with business owners focused on operational capacity and utilization, value-added and niche market access, interaction with the relevant policy framework and regulators and overall business model and capital costing. In addition, case studies were supplemented with financial data from those businesses willing to share such information. Financial data provided evidence-based quantitative measures of business success. In some cases, data on the financial state of a business was supplied through official financial documentation such as cash flow statements and balance sheets, while in other cases it was supplied orally. Utilizing a case-study approach in order to better understand the current state of mobile and modular abattoir businesses within British Colombia led to a robust collection of data that captured an in-depth understanding of each business. Providing confidentiality to

⁴ While conducting a jurisdictional scan of British Colombia, it was revealed that not all moveable processing facilities were mobile, but that there were instances of partially mobile, or modular, abattoirs
the extent of amalgamated research findings also helped to enhance the research findings, as business owners were admittedly candid about various aspects of their businesses that were perceived as sensitive such as financial information, ownership structure and change and regulatory compliance.

In order to supplement the secondary data collected regarding the regulatory context as it relates to local meat processing and slaughter in British Colombia, key informant interviews with one policy official as well as one program-based employee of a quasi-regulatory body were conducted. This primary data aided in identifying policy options and clarifying the vast amount of change that has occurred in British Colombia’s meat regulatory framework. It also provided insight into the regulator perspective towards mobile and modular abattoirs throughout the province with regards to regulatory ease (in comparison to stationary abattoirs and processing facilities), business model capacity for regulatory compliance and overall interaction with business owners. All interview guides can be found in the Appendix of this thesis. Figure 1.0 shows all methods utilized and accompanying objectives.
Figure 1.0

Flow Chart of Research Methods and Objectives

**Method**

- Literature Review of:
  - a) the global food system
  - b) the current state of local food system development within Ontario
  - c) local meat sector challenges within the context

- Jurisdictional Scans

- Case Studies

- Key Informant Interviews with Regulators

- Key Informant Interviews with Ontario Processors, Abattoir Owners, and Butchers

**Objective**

- Contextualize the challenges and opportunities faced within provincial local meat sectors within the broader contexts of global food system change and local food system development

- Identify Canadian jurisdictions currently utilizing mobile and modular abattoirs in order to provide comparative evidence for Ontario context and identify case study regions

- Provide a detailed account of existing mobile and modular abattoirs in Canadian jurisdictions in order to conduct comparative analysis of feasibility

- Provide information on how governments regulate mobile and modular abattoirs and gain perspective from regulators as to approach, troubleshooting, opportunities and lessons learned

- To understand challenges and opportunities faced in Ontario’s local livestock sector as well as to survey level of demand for mobile abattoir service
Chapter 2.0 The International Food System

2.1 The Current State of the International Food System

With persistent consolidation and market liberalization within the international food system has come an ever-present dichotomy of those nations and communities who maintain food surpluses and those who face extreme food deficits (Blouin, Lemay, Ashraf, Imai and Konforti, 2009; Chen and Kostas, 2008; Cohen and Clapp, 2009; McCullough, Pingali and Stamoulis, 2010; Winson, 2010). While the global food crisis of 2008 resulted in a crisis of hunger for so many (predominately in the Global South) a synonymously record high of harvests and profits for the largest agri-food corporations occurred (Blouin et al., 2009; Niles and Roff, 2009). Food riots raged amongst a dichotomous and sad reality of extreme hunger and abundance. The World Bank reported that as of June of 2008, world food prices had risen 83% in three years (Blouin et al., 2009). Moreover, despite the fact that over the two decades previous to 2007, food production numbers had rose at a relatively consistent rate of just over two percent annually, while global population growth rose at a rate of 1.09%, the number of people facing hunger globally rose from 700 million in 1986 to 800 million in 1998. During the global economic crisis of 2008, this number soared to 1.02 billion, at the time over one sixth of all people worldwide (Cohen and Clapp, 2009; Blouin et al., 2009).

Surges in food prices and overall volatility in the world food market represent a confluence of trends, and arguably failures, present within the food system today. Namely, climate change resulting in extreme weather, peak oil resulting in rising
fuel costs, capital accumulation resulting in corporate consolidation (and the subsequent loss of small and medium sized farmers and other agricultural enterprise, market liberalization resulting in heavy food import dependence and population growth resulting in increased food demand are all major factors attributable to the rather tenuous situation of the present day global food system (Blouin et al; Giménez and Shattuck, 2011; Niles and Roff, 2009; Peters, Bills, Wilkins, and Fick, 2009; Sage, 2010). Indeed, Giménez and Shattuck, (2011) describe the global food system as,

currently characterized by the unprecedented market power and profits of monopoly agrifood corporations, globalized animal protein chains, growing links between food and fuel economies, a ‘supermarket revolution’, liberalized global trade in food, increasingly concentrated land ownership, a shrinking natural resource base, and growing opposition from food movements worldwide (p. 111).

While corporate consolidation in the food industry persists, small to medium sized agricultural enterprises continue to struggle within a system of global competitiveness that often skews the true value of food and agricultural commodities through the externalization of environmental, social, and economic outcomes (Blouin et al., 2009; Connelly, Markey and Roseland, 2011; Niles and Roff, 2009). Indeed, the impact of the conventional, industrial agriculture food system on small to medium sized agricultural enterprise is noted across the globe and Canada
is no exception. Between 2001 and 2006 Canada lost an average of 67.5 farms per week. Moreover, within the same time frame, the number of farms experiencing an annual revenue of over one million dollars increased by 33%, while an increasing number of farmers reported the inability to cover operational costs. For small to medium sized agricultural enterprise, challenges go beyond the marketplace, where much of public policy as it relates to the food system has been crafted to regulate (and facilitate the development of) large-scale industry. Therefore, whether intentionally or not, policies such as food safety regulation or the subsidization of cereals and grains systematically reduces the viability of small to medium sized agricultural businesses (Blouin et al., 2009; Landman et al., 2009; Perth County and University of Guelph, 2013; Whitney, 2008).

2.2 Food Regimes

Academic analysis of the international food system reinforces the above understanding of trends and complexities that characterize the development of agriculture and food in the context of a global marketplace. One particularly important concept in aiding to contextualize the rise of the international food system is that of food regimes Friedmann’s (1987) and later, Friedmann and McMichael’s (1989) food regime analysis assists in explaining food and agriculture systems and change within the broader context of global capitalist market development. In this way, the seminal concept gives a broad yet structured overview of changing and emerging relationships, trends and exchanges between
independent nations as it relates to the agricultural, economic and political transformations that fueled the development of the international food system (Atkins and Bowler, 2001; Giménez and Shattuck, 2011; McMichael, 2009).

At the most basic level, within the analytical framework of food regime analysis, the food system is analyzed by periods of time beginning in the latter half of the nineteenth century to the present. Conceptually, in each food regime evidence of emerging contradictions within the food and economic systems catalyzes change and transition that ultimately leads to the next food regime. Friedmann and McMichael (1989) describe the first global food regime, occurring between 1870 and through to the 1930’s, as characterized by the cheap supply of food and raw materials from the tropical and temperate settler colonies such as Africa, South America and Australasia to Europe, facilitating European industrialization. At the same time, new settler colonies, namely the United States, Canada, and Australia, were encouraged to develop monoculture systems that would supply Europe with dietary staples for the working class. This effectively established complementary economics through the exploitation of newfound arable soils and this capitalist economic principle still remains pervasive today. While the global economic recession of the 1920’s and 1930’s staggered the developments of the first food regime, the beginning of a basis for what would become a global, capitalist agriculture and food system had become entrenched in terms of both modes of production and the flow and trading of foodstuffs (Atkins and Bowler, 2001; Friedmann and McMichael, 1989; Giménez and Shattuck, 2011).
The second food regime, lasting from the 1950’s to 1970’s (also often referred to as the ‘productionist’ period) was characterized by the rapid and intensive modernization of agricultural production. It was during this time and through this process that the United States would capture significant power within the global economy. Drastic shifts in the way that food was produced occurred during the second food regime, such as the substitution of labour and land for agricultural capital, largely in the form of new technology. Available new technologies spurred the mechanization of farming and a focus on value-added food commodities. Agricultural lands were consolidated, pushing out small farmers and creating opportunity for the seizure of large amounts of market share by agri-food corporations. In the Global South, industrial agriculture was accelerated by the ‘Green Revolution’, which introduced high-yielding cereals and subsidized new agricultural technologies such as machinery, pesticides, herbicides, and fertilizers. In newly forming states, wheat was imported (often in the form of food aid) in order to facilitate industrialization, feed growing populations, and allow for the production of specialty products such as cotton and fruit. The effect of this was what eventually became perpetual food import dependency. It was also during the second food regime, however, that national agricultural protectionist agreements and regulations could be utilized under the 1947 General Agreement on Tariffs and Trade (GATT) agreement rules, giving independent nations greater control over their own food sovereignty (Atkins and Bowler, 2001; Friedmann and McMichael, 1989; Giménez and Shattuck, 2011; McMichael, 2009).
The third food regime began in the 1980’s and continues today. It surfaced from the economic recession of the 1970’s and 1980s and embodies a variety of trends and contradictions within uncertain times. During the third food regime, the EU (European Union) asserted a level of economic power that paralleled the United States. Agri-food corporations continue to gain both market and political power, and individual states continue to drastically reduce national support for agriculture. In addition, during the first few decades of the third food regime, neoliberal reform in the form Structural Adjustment Programs destroyed trade limitations (such as tariffs), marketing boards, price guarantees, and agricultural research and extension systems and programs throughout the Global South. Through the creation of the WTO (World Trade Organization) in 1995 and its Agreement on Agriculture, the rights of sovereign nations to control their own agricultural and food related policies became increasingly restricted. As corporate consolidation continues and concerns over the conventional food system become aggravated, a range of alternative food movements and models continue to emerge. Overall, the third food regime to date has been marked by the trends of a continued increase in the global movement and trading of food and food products, further consolidation in the agri-food sector, new biotechnology, deregulation in the food and agricultural arenas, and an array of increasingly robust alternative food system models. Yet largely, speculation as to what the future holds for the third food regime rests on questions surrounding the polarized approach of either regulating or facilitating further capital accumulation by international agriculture and food corporations (Atkins and
Bowler, 2001; Friedmann and McMichael, 1989; Giménez and Shattuck, 2011; McMichael, 2009).

While food regime analysis provides a systematic conceptual framework from which to better understand the structural influences that have contributed to the current food system, it is also necessary to note the critiques of this approach. In particular, from the perspective of Moran, Blunden, Workman, and Bradley (1996), Goodman and Watts (1994) and Pechlaner and Otero (2010), the food regime concept overgeneralizes the experiences and realities of various independent nations such as those relating to regulation, social agency and resistance, relying heavily on trends and characteristics of the food system as they relate to the United States. In particular, it is noted that the experiences of farmers in European Union nations and Australia have been much different than that of the U.S., where producers have been able to mobilize themselves in various ways, effectively maintaining a higher degree of control over the sector (Atkins and Bowler, 2001). In addition, Pritchard (1996) points to the lack of recognition of the capacity for modes of mobilization and organization at the national, regional, or local levels within the food regime framework. Nonetheless, the concept remains an important tool in analyzing the historical economic transformations that facilitated the growth of the current food system as it stands to date (Atkins and Bowler, 2001; McMichael, 2009).
2.3 Food Sovereignty

Distrust towards the current global food system has emerged in a variety of forms from alternative food systems and initiatives to conceptual frameworks for change. One important concept brought forward in this context is that of food sovereignty. The concept of food sovereignty was introduced in 1993 by an international alliance, Vía Campesina. At the time the alliance, made up of organizations across the globe representing small-medium scale family farmers, indigenous peoples and peasants and rural youth and women, brought forth the concept of food sovereignty in opposition to the conventional agri-food system and the multinational corporations that largely control it (Blouin et al., 2009; Pimbert, 2009; Rosset, 2008). The movement first presented the concept of food sovereignty as a list of principles that included: redistributive agrarian reform, food as a human right, global trade reform, protection of natural resources, social peace, democratic control, global trade reform, and limits on speculation on food commodities by the large agri-food corporations (Blouin et al., 2009; Pimbert, 2009). The movement and its affiliated organizations later further refined the concept of food sovereignty at the World Food Summit+6 in Rome and stated that,

Food Sovereignty is the RIGHT of peoples, communities, and countries to define their own agricultural, labour, fishing, food and land policies which are ecologically, socially, economically and culturally appropriate to their unique circumstances. It includes the true right to food and to produce food, which means that all people have the right to safe,
nutritious and culturally appropriate food and to food-producing resources and the ability to sustain themselves and their societies. (in Blouin et al., 2009, p. 2)

Since this time, the ‘food sovereignty’ concept has been adapted to fit other contexts and agendas, most notably with regards to declaring or establishing the idea of individual state autonomy over agriculture and food policies. This take on the term, however, has been criticized for being too broad by not specifying its particular goal or aim and therefore leaving out key components of the original concept such as sustainable development, the support of family farming and social justice. While the concept of food sovereignty within the national context still calls for autonomous control over food and agriculture and its related policies, control is demanded at the national, as opposed to local, level. The two definitions, it is then argued, embody top-down (from the national perspective) and bottom-up (from the local perspective) takes on what it means to have food sovereignty (Blouin et al., 2009).

Although there may remain some contradictory stances on what constitutes food sovereignty, more recent understandings of the concept tend to border between the two above, and somewhat dichotomous, definitions (Blouin et al., 2009). For Blouin et al., (2009, p. 3) a more inclusive definition is borrowed from the Rendez-vous Québécois pour la Souveraineté Alimentaire, a coalition for food sovereignty based out of Quebec, which states that,
By food sovereignty we mean the right of people to develop their own food and agricultural policy; to protect and regulate national food production and trade in order to attain sustainable development goals, to determine their degree of food autonomy, and to eliminate dumping on their markets. Food sovereignty does not contradict trade in the sense that it is subordinated to the right of people to local food production that is healthy and ecological, realized in equitable conditions and that respects the right of every partner to decent working conditions and incomes (translation by Blouin et al.)

From this perspective, food sovereignty is conceptualized at both the individual and national level. Moreover, while it is explicitly defined as not necessarily contradicting trade, from this point of view, food sovereignty must not be neglected in any food system practice.

2.4 Food Security

Food security was defined in 1996 by the World Food Summit as when, “all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life” (in Ericksen, 2009, p. 243). Analysis and literature on ‘food security’ has developed since the 1970’s when the definition and explanation focused on the availability of food at the national level. Today, the concept takes on a more individualized
interpretation, with a stronger focus on food access (Giménez and Shattuck, 2011; Pinstrup-Anderson, 2009).

In terms of measuring food security, the literature points to three major outcomes: access, utilization, and availability (Barrett, 2010; Ericksen, 2009). Firstly, access to food can be identified through a number of determinants including affordability, allocation (either by governments or markets), social or political contexts, food retail locational proximity, hunting, gathering and fishing laws, preference (as it relates to social, cultural, seasonal or religious contexts), labor force participation, food skills, and lastly, advertising. Utilization in the food security context refers to the ability to use and advantage from food (Eriksen, 2008). Eriksen (2008) asserts that food utilization can be impacted by the diversity of food options, education, access food preparation equipment and infrastructure, capacity for sanitation, social and cultural dimensions such as food preference, and public food safety. Lastly, availability is used as the third major outcome for measuring food security and is dependent on food production, distribution, and retail (or exchange) (Eriksen, 2008).
Chapter 3.0 The Local Food System

3.1 What is Local Food?

A review of the literature shows that there is no widespread consensus on what constitutes ‘local food’ (Martinez, 2010; Blouin et al., 2009). Blouin et al. (2009) point out, however, that in reviewing the multitude of definitions that do exist, three basic components can typically be identified: proximity, objectives and distribution. While proximity is likely the most commonly used tool to help define local food, there exist a range of ways in which it is used and defined. For instance, Chinnakonda and Telford (2007) identify four different ways in which ‘proximity’ is used to define local food: geographic distance (physical distance measured in units i.e. 100 miles), temporal distance (measured by units in terms of transportation distance), political and administrative boundaries (i.e. national, regional, municipal) and lastly, bioregions (the latter referring to the boundaries of natural systems, i.e. ecosystems). Blouin et al., (2009) point to the use of the ‘social distance’ concept in measuring local food, where it is defined based on the number of intermediaries between producer and consumer along the supply chain. Mundler (2007) adopts this concept and uses the categories of direct sales (i.e. on farm) and indirect sales (i.e. retail) to provide further categorization. Ibery and Maye (2007) use the idea of ‘relational criteria’ to define local food based on the knowledge of consumer. Their definition is extended to three categories of consumer awareness: face to face (occurs via direct sale and therefore consumers are aware of where and by whom their food is being produced), spatially proximate (when consumers are aware that the product they are purchasing is local) and finally, spatially extended (where
consumers are unaware of a product’s origin at the time of purchase, but may be informed through labeling).

Moving from definitions of ‘local food’ to descriptions of what makes a ‘local food system’ reveals a widespread intention towards the use of local food to create outcomes that reach far beyond the scope of eating food within a particular defined proximity. Where definitions of ‘local food’ revolve largely around measurements of distance in order to determine spatial and geographic locality, definitions of ‘local food systems’ tend to describe social, environmental, and economic components that are viewed as necessary for local food systems to affect change. For example, The University of California’s Sustainable Agriculture Research Program in Blouin et al., (2009, p. 8) defines a local food system as a, “collaborative effort to build more locally based, self-reliant food economies - one in which sustainable food production, processing, distribution, and consumption is integrated to enhance the economic, environmental and social health of a particular place”. From this perspective, the local aspect of the local food system is used as a means to an end, where the end is a broad and ambitious agenda erring on the side of systematic or transformative change (Blouin et al., 2009). For Landman et al. (2009, p. 1), local food systems build “long-term economic resilience, environmental stewardship, quality food access and community and cultural integrity through a food educated public”.


La Trobe & Friends of the Earth (2002) offer a relatively detailed account of those aspects that they see as vital to a local food system:

1) Improved economic outcomes for producers and communities.
2) Food security and access to healthy food.
3) The use of diversified production practices that result in positive environmental outcomes.
4) The minimization of carbon use, creating further environmental and health benefits.
5) The use of sustainable modes of production that results in benefits for the environment and human health.
6) The building of social capital through built relationships between producers, consumers, and land. (in Blouin et al., 2009, p. 8)

For Kloppenburg, Hendrickson and Stevenson (1996), the idea of the foodshed is also used to provide a description of what constitutes a local or regional food system. Interchanging the popular concept of watershed with that of foodshed, it is argued, allows for a relatively immediate and broad understanding of what a foodshed is. The most basic definition of the foodshed refers to “the geographic area from which a population derives its food supply” (Peters et al., 2009, p. 2). It is asserted that foodshed analysis, however, moves the idea towards a pragmatic conceptual framework that connects culture (people) with nature (food) through the use of place. From this perspective, the concept aims to locate the sources and prospective sources of food within a foodshed and analyze the movement of that
food along the supply chain. Ultimately, the intention is that this analysis can be used to affect food system change once the flow of foods within a foodshed is better understood. When defining a foodshed from the larger conceptual framework that it invokes, a more encompassing characterization of the concept is described as encompassing local or regional food systems built on the values of health, community-based economic development, support for agricultural smallholders, sustainable agricultural practices and social capital (Blouin et al., 2009; Kloppenburg et al., 1996; Peters et al., 2009).

By reviewing some of the common-themed definitions of local food systems it becomes clear that in many cases the objectives fueling local food system are more encompassing than concern over food proximity. Blouin et al. (2009, p. 5) state that, “the rising popularity of local food systems is symptomatic of the crisis of confidence in the agro-food industry”. Indeed, there is a strong argument made throughout much of the literature that local food systems have the capacity to create new food systems that are environmentally beneficial, stimulate community economic development and provide fresher (and perhaps healthier) foods while building social capital (Allen, 2010; Connelly et al., 2011; Gimenez and Shattuck, 2011; Sage, 2010). In addition, Gimenez and Shattuck argue that as the human population continues to increase and issues of hunger and food insecurity become more pervasive, it will be alternative food systems, as opposed to the conventional food system, that have the potential to fulfill growing food demand.
3.2 Modern Day Local Food Systems

The push towards local food system development in the context of the modern day can be traced to the teikei in Japan. Beginning in the 1970’s, the teikei, which translates to ‘putting the producer’s face on the product’, were organized groups functioning from the model of consumer co-operatives where members would deal directly with, and in some cases work with, Japanese producers. In the European and U.S. contexts, modern local and alternative food systems followed shortly after, largely in the form of community supported agriculture and community farming models. During the 1980’s and 1990’s, farmers’ markets also began to re-emerge as popular local food distribution channels, with the number of U.S. farmers’ markets rising from 200 in 1976 to over 8000 by 2013 (Blouin et al., 2009; Agricultural Marketing Resource Centre, 2014). While the concept of direct sale of foods originated long before the coming of modern day alternative and local food systems, non-surprisingly, the decline of the direct sale model coincided with the development of the world food system where food specialization and surplus became a strategic trading tool. For instance, farmers markets, which had existed previously in the pre-industrial era as means for excess produce sales, had almost disappeared entirely by the 20th century (Blouin et al., 2009).

In Canada, a recent review by the Canadian Co-operative Association (2009) of local food developments identified over 2300 local food initiatives nation-wide. Initiatives listed from highest to least occurring included: restaurants and chef initiatives, farmers’ markets, retail stores, community supported agriculture
programs, food box programs, food security and policy groups and councils, regional
culinary tourism, institutional procurement and regional value chains. While
currently local food systems and initiatives are documented in abundance across
North America and Europe (Niles and Roff, 2009), there is a noted difference in
motivations for local food system development based on affluence. For communities
and stakeholders facing poverty and food insecurity, local food systems offer a
means to improve social justice through a higher degree of food access. In more
affluent contexts, pushes towards local food system development have largely been
born out of the demand for healthier, higher quality food (Connelly et al., 2011).

Despite varying motivations behind local food system development, increasingly the
push for local and alternative food systems has spawned from the growing list of
both global and local uncertainties. Indeed, as consumer concerns over the
conventional food system continue to emerge and become aggravated by
unsustainable agricultural practices, food safety scares, controversial agro-industry
practices (such as genetic modification and herbicide and pesticide application),
climate change, global economic instability, peak oil, health, food justice, access and
equity, calls for transformation are ever-emergent. Increasingly, movements
towards alternative food systems respond to both local and global issues through
community and place-based initiatives and solutions that are capable of addressing
this wide range of concerns (Blouin et al., 2009; Sage, 2010).
Local food initiatives and systems in the modern day do not come without their own set of challenges, however. Blouin et al., (2009) discuss the three most common barriers for local food system development as lack of financing, economic power and knowledge. In terms of financing, for local and regional food initiatives, capital and operating costs can pose significant challenges. Given that many local food initiatives are built and developed on the basis of creating more just food systems (as opposed to profit-making) creating and maintaining a viable business model can be difficult. In addition, external funding can be hard to find, and microloans can come with high interest rates depending on their source (Blouin et al., 2009). In terms of economic power, there is widespread agreement that the conventional global food system creates an unfair advantage to small and medium sized agricultural enterprise through the continued vertical integration and corporate consolidation within the food system. Moreover, advantage in the conventional sector is further aggravated by the continuous externalization of negative environmental and social outputs, which effectively disadvantages those food systems functioning from environmentally and socially responsible practices and modes of production (Allen, 2010; Blouin et al., 2009; Chen and Stamoulis, 2008; Erickson, 2008; Martinez; 2010; McCullough et al., 2010; Winson, 2010). In terms of lack of knowledge, from the production and distribution aspect, local food actors often do not have the necessary resources they require to make the system function to its potential. Lack of knowledge in regards to funding sources, partnership opportunities, business skills, and locational opportunities often remain limited. From the consumer aspect, limited knowledge has been noted in terms of the lack of
availability of information on where to purchase local foods, as well as misinformation about the cost of purchasing local (Blouin et al., 2009).

As more research on local food systems emerges, and community-based initiatives towards creating a higher degree of food security and justice increase, there is an escalating case being built towards the need for food system policy and planning that promotes and facilitates such development (Pothukuchi and Kaufman, 2000; Sadler, Gilliland and Arku, 2014). Many of the above-mentioned barriers to local food system development, for example, are areas that could be addressed at the policy-level. Indeed, it is suggested that increased support and funding for local food system development, particularly in light of the continuous subsidizations that occur in the conventional food system, is both deserved and essential (Mount et al., 2013; Sadler et al., 2014). At the municipal planning and policymaking level, the food system is often disregarded and this is demonstrated through the common exclusion of food policy in official plans. While issues related to food and agriculture are often dealt with in separation at a variety of policy-levels, planning at the local or municipal level can be used to facilitate the growth of alternative production systems such as urban agriculture, community gardening, or small scale produce production (Sadler et al., 2014).
3.3 Questioning the Value of the ‘Local’ in Local Food Systems

Despite the advances made in local food system development, within the local food literature, a host of authors point out that there is not necessarily an inherent value in the ‘local’ of local food systems (Allen, 2010; Born and Purcell, 2006; Guthman, 2008; Sage, 2010). Rather, some emphasize that the ‘local’ should be used as a strategy for a broader set of values and objectives (Blouin et al., 2009; Sage, 2010). As explored above through the various definitions of a local food system, by utilizing ‘local’ food systems as a means to an end, it is argued that there can be greater opportunity for transformation (Allen, 2010; Sage, 2010). Several of these authors warn, however, that that such transformation is not innate within local food system development. For example, while it is generally accepted that local food systems typically provide a more accurate cost-accounting for foodstuffs, including environmental, economic, and social costs, they do not necessarily address other complex social issues, such as power, equity, income, and ethnicity that can affect local food access (Feagan, 2008; Hinrichs, 2003; Niles and Roff, 2009). For Born and Purcell (2006), the claimed intrinsic environmental, social, and economic benefits of local food systems are discredited through the argument that it is not scale which distinguishes between positive and negative outcomes, but that it is the underlying agenda of a system that makes such determinations. From this perspective, local food systems and agendas that encompass the objectives of increasing equity and justice are not synonymous.
Niles and Roff (2009) point to the multitude of alternative food initiatives that exist and assert that such initiatives do not necessarily embody the capacity for transformation, but rather imitate conventional practices and relationships within a somewhat differentiated setting (i.e. mass production of organic food). They also point out that it is not a dichotomous state of the alternative versus the conventional, but that there are a wide range of diverse food systems and initiatives that exist, all of which continue to develop and adapt to a changing food environment and all of which will be important to the future of environmentally, socially, and economically just and sustainable food systems.

Peters et al. (2009) suggest that within the uncertain realm of the benefits of local food systems, the concept of the foodshed provides a highly useful framework under which an investigation and evaluation of the benefits, or lack thereof, of local food systems can be uncovered. For McEntee (2010), the concepts of ‘contemporary local’ and ‘traditional local’ are used to distinguish between those local food systems which work from a transformative agenda and those whose main objective is to provide locally fresh and affordable food. In the contemporary sphere, social, economic and environmental outcomes and considerations are addressed through practices and approaches such as holistic production.

3.4 The Conceptual Underpinnings of Local Food Systems

Given the widespread uncertainty, instability and distrust in the current international food system, a variety of alternative food movements, models and
systems continue to emerge. With the development of various types and characteristics of alternative food systems come conceptual frameworks, or at least underpinnings, that have themselves continued to develop as alternative food systems become increasingly emergent. Sage (2010) suggests that the increasing interest and commitment towards establishing robust alternative food systems in light of continued emergent global uncertainties marks a transition in motivations. Where previously a focus on environmental and resource preservation drove a significant share of efforts aimed towards the growth of alternative food systems, it is asserted that a more defensive standpoint now exists where it is realized that self and community-reliance is necessary for a sustainable and resilient food future (Blouin et al., 2009; Connelly et al., 2011). Increasingly, initiatives for alternative and particularly local food systems are underpinned by a transformative conception and this is largely a result of: a) distrust in the conventional food system and b) lessons learned from past successes and challenges in developing alternatives food systems (Blouin et al., 2009). Connelly et al. (2011) suggest that in order for local food systems to be capable of providing transformative change, however, they must build partnerships and coalitions that are able to address complex social arrangements. Furthermore, they assert that investment in both physical and social infrastructure is a necessary component in facilitating social and systematic change within the context of local food system development.

Connelly et al. (2011) argue that initiatives for food system change in the modern day have historically largely revolved around the concepts of social economy and
sustainable community development. They assert that neither of these two conceptual frameworks, however, fully incorporates the myriad of considerations and components necessary for food systems change. For instance, in the case of sustainable community development, they argue that success largely revolves around the integration of environmental and economic issues or concerns within the local context but that problems related to social justice, such as quality of life, are often neglected. While the concept of sustainable community development is rooted in the belief that mobilization and democracy at the local level facilitates positive community change, the concept is seen as having a spectrum that exists between weak and strong. On the weak side, where they claim that most sustainable community development approaches are situated, environment is considered to the extent that development must give attention to environmental issues. In these examples, growth and development are mainly focused on human needs. From this approach, technology, resource efficiency and the substitution of natural resources through manufacturing are seen as being capable of overcoming environmental issues related to development (Connelly et al., 2011).

On the strong side of sustainable community development, the approach is more inclusive of various aspects including those that are environmental, human, cultural, economic, natural etc., while recognizing the finite limits of environmental resources (Connelly et al., 2011; Roseland, 2005). At the centre of sustainable community on the ‘strong’ side of the continuum are the ideals of collective action, social innovation, and finite limits to resources and therefore growth. From this
perspective change is catalyzed by the social arena opposed to the technological. Overall, while the use of sustainable community development allows for the restructuring of relations and therefore interactions between the social, environmental, and economic spheres, it relies heavily on utilizing conventional economic-based tools to achieve change in the context of development. It therefore does not inherently question or confront existing power relations between and within the social, economic, and environmental spheres (Connelly et al., 2011).

Similar to the spectrum described in sustainable community development, in practice the concept of social economy also falls along a scale ranging from weak to strong. On the weaker end, social economy initiatives are also criticized for functioning within the boundaries of the global capitalist economy, while failing to act as a catalyst for social transformation and often not accommodating important environmental issues (Amin, Cameron, and Hudson, 2002; Connelly et al., 2011). Social economy approaches on the ‘stronger’ end of the spectrum on the other hand, are sturdily based on the ideals of social equity and justice and aim to facilitate social and community action that stimulates economic equity and redistribution while building social capacity. With a critique of the shortcomings of both sustainable community development and social economy, Connelly et al. (2011) propose that by bridging the two concepts and applying them in the context of local food initiatives, community transformation can be achieved.
For Gimenez and Shattuck (2011) global efforts, movements and initiatives for alternative food systems can be understood as either progressive or radical. Progressive movements focus on practical initiatives aimed at creating and developing alternative food systems, but within the economic and political frameworks of the current capitalist economic and food system. Those that are progressive, they assert, are typically represented by local food projects and as opposed to movements. The progressive alternative food efforts parallel the food justice discourse, but both are criticized for not addressing the structural and institutional causes of food injustice. For radical efforts, most closely associated with the concept of food sovereignty, the main concern is over the rights and power held by people in shaping and determining their own food-related circumstance (Gimenez and Shattuck, 2011; Sage, 2010). Initiatives and movements from the radical trend therefore call for food systems change, structural and institutional reform, redistribution of land, resources, and ultimately, power (Gimenez and Shattuck, 2011).
Chapter 4.0 Ontario’s Local Food System

4.1 An Overview

In Ontario, the provincial local food system as a whole has experienced substantial development. Provincial and community-based efforts directed at fostering local food system development have resulted in impressive growth within the local food sector. While a study undertaken by the Canadian Co-operative Association in 2009 showed that Ontario held a 25% share of all local food initiatives nation-wide (Canadian Co-operative Association, 2009), it must also be noted that Ontario holds 38.5% of the total Canadian population (Ontario Ministry of Finance, 2010), suggesting that in terms of local food initiatives relative to population, that this number should be even greater. Nonetheless, in Ontario, common types of local food initiatives include restaurants serving local food, farmers markets, community supported agricultural programs (CSA’s), foodbox programs, food security and policy groups, culinary and regional cuisine, and institutional procurement (Canadian Co-operative Association, 2009; Landman et al., 2009).

Local food system development and enhancement within Ontario in recent years is a result of initiatives at the provincial, regional, and community levels. Provincial marketing programs such as Foodland Ontario, Pick Ontario Freshness, Savour Ontario, and Local Food Plus have resulted from the provincial mandate to support local food development. These provincial efforts have focused on educating consumers about the benefits of eating local food and have resulted in an increased
awareness and demand for local food products (Canadian Co-operative Association, 2009; Landman et al., 2009). The province has also committed to increasing institutional procurement of local foods (Landman et al., 2009; Whitney, 2008). The introduction of Ontario’s Local Food Act in 2013 further reinforced the provincial commitment to invest in local food system development. At the community and regional levels, a multitude of community and organizational-based initiatives have formed to support the development of local food systems, making up a significant share of both provincial and national local food system development initiatives (Landman et al., 2009; Whitney, 2008).

As the development of the provincial food system has become an important agenda item at both the community and provincial levels, areas of strength and weakness within the local food system have become easier to identify. Some of the strengths of Ontario’s local food system include the diversity of local food initiatives and the high national share of these held by the province, heightened consumer awareness and demand for local food, and community economic benefit as a result of emerging local food markets (Whitney, 2008). One of the more prominent challenges that has been identified revolves around the issue of access and viability in the local meat slaughtering and processing sector, although distribution is also a significant challenge in the context of local food (Hand, 2010; Whitney, 2008).
4.2 Local Livestock Processing and Slaughtering Challenges within Ontario

4.2.1. An Introduction to the Challenges in the Ontario Local Meat Sector

The challenges and concerns over local livestock slaughtering and processing within Ontario have come at a time when the importance of local food system development has been realized by a multitude of stakeholders including: government agencies and ministries, community groups, food and agriculture-related organizations, producers, processors, food retailers and consumers (Landman et al., 2009; Perth County, 2013; Whitney, 2008). Producer access to local livestock processing and slaughtering, as well as the viability of this industry generally, are very serious areas of concern that have emerged across Ontario within the past decade (Landman et al., 2009; Municipality of Bluewater, 2013; Perth County, 2013; Whitney, 2008).

In a study conducted by the Canadian Institute for Environmental Law and Policy (Whitney, 2008) local producers identified local, provincially inspected abattoirs and processing facilities as integral components to their local food networks, allowing their operations to remain diverse and viable. This reliance stems from the fact that meats demanded within the local food sector require services such as product separation (ensuring no cross-contamination between different types or sources of carcasses), custom cutting, and packaging or labeling. These services make it possible for producers to gain access in niche markets, as well as supply local retail outlets such as farm-gate, local grocery stores, and farmers’ markets. For local producers, small to medium sized provincially inspected abattoirs are almost
always the only place where such services can be acquired, as large-scale provincially inspected facilities, and essentially all federally-inspected facilities, will only deal with large animal quantities and cannot provide custom cutting or product separation. As such, access to local abattoirs and processing facilities remains a critical feature of local food supply chains and is therefore essential to the functioning of robust local food systems as a whole (Haines, 2004; Perth County, 2013; Whitney, 2008).

4.2.2 Meat Inspection in Ontario

Within Ontario, livestock slaughtering and processing facilities are inspected at either a federal, provincial, or municipal (health board) level. The type of inspection undertaken for processing and slaughtering facilities dictates the range of activities they may undertake as well as which markets they may sell within. For instance, products that come out of federally inspected facilities may be sold both inter-provincially and internationally. At the federal level, inspection is undertaken by the CFIA (Canadian Food Inspection Agency) (Haines, 2004; Whitney, 2008).

Abattoirs and processing facilities inspected at the provincial level are overseen by the Ontario Ministry of Agriculture and Food’s Food Inspection Branch. Products that have come from provincially inspected facilities may be sold within the Ontario market only. In both the provincial and federal systems, an inspector is required to be present each time an animal is slaughtered (Haines, 2004; Whitney, 2008). Given
that the provincial regulatory framework for meat inspection has continued to undergo revisions aimed at harmonizing provincial regulation with federal regulation, however, there may be opportunity in the future for provincially-inspected meats to be sold inter-provincially (Whitney, 2008).

Processing facilities that do not offer slaughtering services may be inspected by their municipal Health Unit. The majority of meats processed at municipally inspected facilities must be sold to individual consumers for personal consumption. While non-inspected on-farm slaughter for the purpose of sale is prohibited in Ontario, farmers may slaughter their own animals on-farm for the purpose of personal and direct-family consumption (Haines, 2004; Whitney, 2008).

4.2.3 Business Viability in the Local Meat Sector in Ontario

The challenges facing the local meat slaughtering and processing sector throughout Ontario continue to be experienced within the agriculture and local food sectors province-wide, with a reported forty-percent decline in provincially inspected abattoirs between 1991 and 2008 (Whitney, 2008). For the small and medium sized abattoirs that remain, the amount of capital investment required for regulatory compliance continues to be burdensome. These economic challenges have resulted in concern over business viability for many business owners. In an Ontario Federation of Agriculture (OFA) survey of licensed abattoirs, processors and free standing meat processors, over 60% of respondents indicated that they have
invested over $50,000 in to their business within the last ten years in order to maintain regulatory compliance. Many of these processors identified that they fear they may not be able to recover the invested value in to their operations (OFA, 2010). Since small to medium sized processing and slaughtering facilities have faced severe decline in recent years, local processing and slaughtering services are becoming more difficult to locate and producers face increasingly limited processing options (Landman et al. 2009; Perth County, 2013; Whitney, 2008).

The increasing loss of choice when it comes to the processing and slaughter of animals sold within local food systems negatively affects producers in a variety of ways. For instance, producers surveyed in a 2013 joint Perth County/University of Guelph study identified that the loss of options in terms of animal slaughtering and processing has meant increased vulnerability of their businesses. Where producers are still able to access the services they require within a reasonable travelling distance, they fear that one day these options will too be gone, and this poses a severe threat to the future viability of their operations and livelihoods (Perth County and University of Guelph, 2013). For many producers, the decline in processing facilities results in long travel times to multiple facilities in order to have animals slaughtered and processed according to consumer demand. In some instances, producers of local meat in Ontario have reported traveling up to twelve hours one-way in order to access the services they require (Perth County and University of Guelph, 2013). Traveling long distances to have livestock slaughtered and/or processed results in larger transport costs for producers. In addition, long
travel times increase animal stress, affecting the quality of meat and further decreasing producers’ margins (Evans, 2011; Whitney, 2008).

Lack of access to processing facilities is a distinct problem for particular producer groups, such as sheep producers, as outlined by Whitney, (2008). Many livestock producers, however, are expressing concern over their lack of access to slaughtering and processing facilities. In a recent Business Retention and Expansion study conducted by the County of Perth, over 50% of producers identified that they have considered pursuing niche markets and value-added products as a way of diversifying their operation. More than half of the producers surveyed said that access to a local abattoir would enhance their business through increasing market potential and over 70% of producers indicated that access to local abattoirs is a high priority issue for their business (Perth County, 2013). Lack of access to killing and processing facilities suppresses potential viability and diversity not only of individual businesses, but of the agricultural sector as a whole. The success of value added, niche and local markets are important aspects of Ontario’s agricultural diversity, and adequate access to local meat slaughtering and processing is an essential component to these markets’ supply chains (Perth County, 2013; Whitney, 2008).

For many local food stakeholders, the reduction in provincially inspected abattoirs is perceived to be the result of an increasingly *scale-insensitive* regulatory framework that creates particular challenges for small to medium sized local food
businesses (Landman et al., 2009; Whitney, 2008). Although processors and producers alike confirm the need for a high standard of food safety for the Ontario meat industry, they also express concern over the nature of certain process-based regulatory standards and their relation to food safety (OFA, 2010; Whitney, 2008). Processors and abattoir owners remain concerned over the viability of their businesses in lieu of the continuous capital investments required in order for their operations to remain compliant with meat regulation, and many perceive the reduction in abattoir facilities across Ontario to be a result of such policy (OFA, 2010; Whitney, 2008). Other perspectives, however, point to the loss of local livestock processing and slaughtering businesses as a market-based outcome, resulting from consolidation in the meat sector at large (Perth County and University of Guelph, 2013).

4.3 Opportunities in the Local Meat Processing Sector

Given the reduction in provincially inspected abattoir across Ontario, the vulnerability of small, medium, and diversified farmers remains a significant challenge (Haines, 2004; Landman et al., 2009; Municipality of Bluewater, 2013; Whitney, 2008). As the existing small and local abattoirs continue to experience challenges related to financial viability (OFA, 2010), local producers and the local meat supply chains remain susceptible to further decline.

As other jurisdictions across North America have experienced similar challenges,
various approaches have emerged in attempt to provide a more robust local meat sector infrastructure. One example of such an approach is that of mobile abattoirs. Mobile abattoirs have been noted as having unique potential to overcome some of the significant challenges related to local livestock processing and slaughtering, particularly in the rural and remote contexts. For instance, mobile abattoirs are able to service a wide geographic area. This may be attractive where a lack of local processing and slaughtering facilities is experienced, yet where the demand for processing and slaughtering services does not justify the development of a stationary facility. Mobile abattoirs are also particularly attractive to farmers whose production methods pay particular attention to animal husbandry, where animals can be slaughtered on site, effectively reducing the stress caused by transport and therefore improving product quality and price. Mobile processing facilities may also be attractive for niche and specialty livestock producers such as that of buffalo, which can be particularly prone to stress during transport (Alberta Agriculture and Rural Development, 2010; Expansion Strategies Incorporated, 2011; Evans, 2011).

While the possible benefits of mobile processing technology have been noted by some studies (Alberta Agriculture and Rural Development, 2010; Expansion Strategies Incorporated, 2011), and while many mobile processing facilities exist successfully across both Canada and the United States, little research has been done on their potential within Ontario. Given that mobile abattoirs are used successfully in the Yukon, Alberta, and British Colombia, it is important that Ontario explore this technology as a possible improvement to the current state of local meat processing
and slaughter within the province. Research questions derived from this lack of research may include those such as: How would mobile abattoirs fit within the meat regulatory framework in Ontario? How do the challenges faced in Ontario's local meat sector relate to those in other jurisdictions where this technology has been successful? How does the cost of mobile slaughtering and processing compare to that of stationary facilities?

As alternative food systems continue to develop across the globe, so will Ontario's local food system. Given the expressed consumer demand for local food products, and the impressive growth already accomplished in this regard within Ontario, it is important that areas of weakness and vulnerability are attended to. Exploring local slaughtering and processing alternatives for Ontario will enable the local food system to continue to expand and diversify, and allow Ontario to keep momentum in the context of alternative food system development at the national and international scales.
Chapter 5.0 Mobile Abattoirs in Canada

Mobile abattoir development was examined through the use of jurisdictional scans in the three Canadian jurisdictions where development and utilization of the mobile model is most prominent. Surveying the development of mobile abattoirs in Alberta, The Yukon and British Colombia within the context of each jurisdiction’s local food system development, as well as the relevant regulatory context, also provided crucial information, such as level of business activity and diversity, for the selection of case studies.

5.1 Mobile Abattoirs in Alberta

5.1.1 Alberta’s Local Food System

Albert has a highly productive agricultural sector accounting for over 20% of total national primary production. The province hosts 21 million hectares of agricultural land, or 31.3% of all Canadian farmland, with its beef cattle production comprising the largest agricultural sector within the province. It is also the province’s largest agri-export. Moreover, Alberta has the largest cattle and calf industry in all of Canada, producing approximately 40% of all Canadian beef. Based on 2009 statistics, 16% of beef produced in Alberta is sold within the province and 45% is sold nationally, with the remaining 39% sold internationally (Alberta WaterPortal, 2013). While Alberta is a significant producer of agricultural goods, with over 50,000 producers across the province, the majority of these operations are large-scale, with their goods sold in the export market (Parkland Institute, 2013).
While Alberta’s significant, conventional agricultural sector continues to grow and expand, Alberta’s local food stakeholders increasingly express concern over provincial reliance on imported foods from countries such as the United States, China, and Japan. This poses a certain degree of vulnerability to Alberta’s food sovereignty, as barriers to these exchanges have the potential to emerge in lieu of ever-changing global economic and political dynamics. As such, community-based approaches to the production and distribution of food are becoming progressively frequent. Indeed, the growth of urban agriculture, farmers’ markets and community gardens is documented across the province. According to the Alberta Farmer’s Market Association, for instance, Alberta is home to over 100 registered farmer’s markets (Parkland Institute, 2013).

Concerns over food security and resiliency throughout Alberta arise from more than unease over import-reliance, however, and is also related to issues such as poverty, food access and the presence, or lack thereof, of supportive local food policies. For instance, low-income households remain particularly vulnerable to food insecurity within Alberta, while many of the efforts geared towards maintaining some degree of food security are undertaken at the community level. Community-based local food-related organizations in Alberta, such Alberta Food Matters, play a significant role in developing and managing various community-based initiatives and projects aimed at fostering food security for Alberta’s communities (Growing Food Security in Alberta, 2013). Food banks also play an integral role with regards to food security and access within the province. In 2007, for instance, 39,000 Albertans utilized food
banks, forty-three percent of which were children. Given that a large percentage of food bank staff are unpaid volunteers, however, there is growing consensus towards the need for increased government support and funding for food access and security projects and initiatives (The BC-Alberta Social Economy Research Alliance, 2010).

Indeed, many Alberta local food stakeholders point to the lack of government involvement in creating a robust, local food system. With agricultural policy and regulatory effort in Alberta focused to such a large extent on food safety regulations, local food stakeholders fear over the persistent loss of other agricultural policies and subsequent programs. For instance, there is consensus over the need for policies and programs focused on supporting small-scale agricultural business start-ups, direct marketing, and regional processing infrastructure, particularly in light of the increasing demand for local food. The lack of a comprehensive policy to protect the province’s farmland is also stated as a concern in this context (The BC-Alberta Social Economy Research Alliance, 2010). Overall, while the Alberta Ministry of Agricultural and Rural Development does offer some materials and information regarding topics such as agricultural tourism, farmers’ markets, food hubs, food safety, regional cuisine, and farm direct marketing, programs and policies in place to facilitate local and regional food system development appear to be somewhat limited (Alberta WaterPortal, 2013).
5.1.2 Alberta’s Regulatory Context

Over the past decade, meat regulations have changed significantly in Alberta. Changes of note have included the transfer of oversight of provincially regulated abattoirs and processing facilities from the Ministry of Health to the Ministry of Agriculture and Rural Development, as well as the introduction of the Meat Facility Standards. At present, regulatory authority over the inspection of provincial abattoirs and provincially inspected meat processing facilities is set by the Meat Inspection Act and its regulation. Provincially licensed abattoirs, meat processing facilities, and mobile abattoirs operate under this Act, and its regulations are administrated by the Ministry of Agriculture and Rural Development. Under the Meat Inspection Branch, the Ministry of Agriculture and Rural Development regulates 125 abattoirs, 55 mobile butcher facilities and 99 mobile butchers.

Freestanding meat processing facilities and multi-food vendors in Alberta are regulated by the Alberta Ministry of Health under the Public Health Act and its Food Regulation, and are therefore not subject to Meat Inspection Act (Alberta Ministry of Agriculture and Rural Development. 2013; Cuff, 2012).

Interestingly, Alberta is home to over one hundred mobile butchers and mobile butcher facilities. These butchers and facilities offer on-site processing and/or slaughtering services to producers. Meats slaughtered through these services, however, may only be consumed by the producer of the animal and their immediate family, and specific definitions of what constitutes a ‘producer’ are provided in this context. If a producer has their livestock slaughtered in a provincially inspected
facility, however, and then uses a mobile butchering service for further processing, the meat produced is considered inspected, and can be sold within the province. While mobile butchers who offer slaughtering services are licensed through the Ministry of Agricultural and Rural Development, those who offer processing services only, are overseen by the Ministry of Health (Alberta Ministry of Agriculture and Rural Development. 2013; Cuff, 2012). Currently, the Alberta government is taking action to respond to industry complaints regarding meat regulation in the province and in 2012, hired a consulting firm to undertake a review of meat inspection in the province. Processor concerns towards the current regulatory framework revolve around issues such as high regulatory compliance costs, poor communication between the sector and inspectors, and a perceived unfair advantage among those processors inspected at a provincial level. Arguments related to the latter suggest that regulatory compliance is more relaxed for those facilities that fall under the jurisdiction of the Ministry of Health, creating an unfair market advantage for those inspected by the Ministry of Agriculture and Rural Development (Cuff, 2012).

### 5.1.3 Alberta’s Mobile Abattoir Inventory

Beginning in 2005, the Alberta Ministry of Agriculture and Rural Development began a four-year project aimed at understanding the technical feasibility and business viability of mobile abattoirs. Working together with Olds College, the project achieved the construction of a red meat mobile abattoir in order to assess whether this type of unit could have the technical capacity to operate within the
relevant regulatory standards. For the business feasibility portion of the study, the units’ capital cost and operational costs were analyzed using various hypothetical business models and situations (Alberta Agriculture and Rural Development Local Market Expansion Branch. 2010).

During the technical capacity assessment portion of the project, 154 animals were slaughtered across 11 locations in the unit including bison, deer, sheep, cattle and hogs. The results of the field tests demonstrated that the unit was able to technically operate with only minor equipment-related obstacles, and that the resulting meat products complied with Alberta’s meat regulations. While the business viability analysis portion of the project did present complexity and demand estimations it was concluded that through several hypothetical business scenarios the mobile abattoir could provide a viable business opportunity. Furthermore, it was found that the greatest opportunity for mobile abattoirs is in supplying niche products that are increasingly in demand by consumers, with a specifically high demand coming from urban centres (Alberta Agriculture and Rural Development Local Market Expansion Branch, 2010).

One of the most significant challenges presented with the use of a red meat mobile abattoir proved to be the necessary reliance on, and coordination with, further processing and cold storage facilities. For seasonally produced red meats, a complex supply chain is necessitated where freezing is required. With the larger size of red-meat animals and the resulting need for further processing, cold storage space, or
freezing presenting particular challenges, project leads became curious about how these challenges may be changed or mitigated in the case of a mobile abattoir servicing poultry (Alberta Agriculture and Rural Development Local Market Expansion Branch. 2010).

As such, in 2008 the project was expanded to include the testing of a poultry mobile abattoir. The findings of the poultry mobile abattoir portion of the study mirror those of the red-meat abattoir in that both units proved to be able to produce meats that comply with all Alberta regulations pertaining to the slaughter of animals. Cost analysis through various hypothetical business cases for the poultry unit also showed that the abattoir can be viable as a business. Minor problems reported with regards to the poultry unit were minor technical glitches and suggested improvements included limiting the processing season due to the cold winter climate, increasing fresh water holding capacity, and adding a retractable roof over the unit’s entrances (Government of Alberta, 2013).

While the red meat abattoir created by the project was sold to the Northern Alberta municipality of Big Lakes in 2011, the unit is not yet operational. Given the region’s producers’ eagerness to have access to processing infrastructure, the intention of the municipality in purchasing the unit was to sell the unit to the area’s farmers. Joint sector/municipal initiatives are striving to facilitate the development of a producer co-operative that would own and operate the unit. Given the relative remoteness of the region, with the closest provincially inspected abattoir located
over 100 kilometers away, the economic development officer of the region pointed to the benefits that the unit could bring to the region. Barriers to getting the unit up and running may be related to the difficulty in coordinating various stakeholders, as well as accessing funding for initial operation or unit modifications. The municipal district, however, still maintains the intention of eventually having the unit in service (MacArthur, 2011; Municipal District of Big Lakes, 2013).

5.1.4 Conclusion of Mobile Abattoir Development in Alberta

While currently no mobile abattoir in Alberta is being utilized, there are several lessons from Alberta’s experiences thus far which should be taken into consideration. The abattoir feasibility and viability project undertaken by the Alberta government in partnership with Olds College, and its resulting two reports, present a relatively comprehensive understanding of the abilities and capacities of mobile abattoirs. Given that Alberta’s approach to meat inspection appears to most closely parallel that of Ontario’s out of all the Canadian provinces, research such as this should serve to contribute important information to any discussions considering the development or approval of mobile abattoirs in Ontario. In addition, despite criticisms regarding the regulatory approach to local food and more particularly meat inspection in Alberta, it should be noted that a project of this magnitude required considerable government resources in order to come to fruition. These efforts may result in the increased ability of Alberta consumers to be able to access local meats, while making local production more viable. Lastly, the
presence of mobile butchers and mobile butcher facilities is also of particular interest, and this is a service and business model that could be further explored by provinces seeking to expand the options for local meat slaughtering and processing.

5.2 Mobile Abattoirs in The Yukon

5.2.1 The Yukon’s Local Food System

The Yukon’s food system is increasingly considered as vulnerable, with food grown within the territory accounting for only 2% of Yukon food expenditures. While to date there have been various efforts and initiatives geared towards facilitating the development of a more robust territorial food system, the Yukon still relies heavily on food imports and the government, agricultural sector and citizens alike fear what this means for Yukon’s capacity for food resiliency (Kwantlen Polytechnic University Institute for Sustainable Horticulture, 2012).

Yukon producers face a variety of particular challenges given the unique context of the territory, which to a large extent is characterized by a vast remoteness and low population density. In addition, while at most 2% of the land in the Yukon is considered as being potentially arable, much of this land is negatively affected by a tumultuous climate, poor soil and lack of water availability. While overall, 25,000 of the territory’s acres are used for agricultural production of some type, 16,000 of these acres are used for pasture, woodland, or wetland. Yukon farmers also face a particularly short growing season; must compete with foodstuffs imported from large, centralized production and distribution channels; face a shortage of labour,
and are increasingly facing severe succession issues (Serecon Management Consulting Inc., TransNorthern Management Consulting, and Research Northwest, 2007; Zapisocky and Lewis, 2010)

While the most productive land in the Yukon is located in the Dawson region, most farms are located close to Whitehorse where there is greater market access and additional off-farm job opportunities. Making a living as a farmer in the Yukon poses a distinct set of challenges, with many farmers supporting their households through secondary or full-time work. Indeed, overall Yukon-based producer expenses outweigh producer revenues. Not surprisingly, Yukon farms on the whole are facing a gradual decline. Furthermore, land costs remain prohibitive for farmers looking to expand or start-up businesses (Serecon Management Consulting et al., 2007; Zapisocky and Lewis, 2010).

Within the territorial meat sector, livestock producers face an additional set of challenges in attempting to supply the market and remain viable, with small scale food processing infrastructure as a whole ranging from severely limited to completely absent. Lack of access to processing facilities has thereby limited the growth of livestock operations, and has been met with frustration by producers who are eager to increase the scale of their operation. While some efforts to this end have been made, such as the introduction of a mobile abattoir discussed below, livestock producers still face major challenges related to accessing processing and slaughter services. Despite the myriad of barriers faced by producers within the Yukon,
consumer demand for territory-produced food continues to grow with consumer demand for Yukon-grown food remaining higher than supply (Serecon Management Consulting et al., 2007; Zapisocky and Lewis, 2010).

5.2.2 The Yukon’s Regulatory Context

Similar to most Canadian jurisdictions, meat for retail sale within the Yukon must be slaughtered in the presence of an inspector. The Yukon Agricultural Products Act, 2002 sets the regulations and rules for the territory’s abattoirs and processing facilities and their practices. The Act, only twelve pages in length, does make a quasi-exception to the standardized practice, however, allowing for the occasional sale of a live animal even if the producer/seller assists with the slaughtering and processing of the animal. This regulation has allowed for some farm-gate type sales, but meats to be sold through retail locations must be inspected at slaughter and if further processed, this also must be done at an approved facility (Agriculture and Agri-Food Canada, Government of Canada and Yukon Energy Mines and Resources, unknown date).

The relative simplicity of the Yukon Agricultural Products Act in comparison to other province’s meat regulation frameworks is indicative of the lack of slaughtering and processing capacity and infrastructure throughout the territory. In addition, with the lack of an export meat market, Yukon-produced meats do not face the national and international standard-related pressures that are experienced in
broader markets. The territory does, however, have a seventy-four page manual dedicated to the procedures and practices undertaken in its mobile abattoir.

5.2.3 The Yukon’s Mobile Abattoir Inventory

The Yukon is home to Canada’s first mobile abattoir, which was introduced in 2006. The abattoir, contained within a fifth wheel trailer, offers slaughtering, cooling, and transportation services for red meats including goats, sheep, elk, pork, beef, and bison. The front of the unit contains the mechanical room as well as the cooler, which can accommodate up to 8 cattle, elk, or bison, or alternatively 20 sheep or goats and up to 15 hogs. The rest of the unit contains the technology necessary for the slaughtering of the animals. The mobile unit does not offer further processing but offers transport services to further processing facilities, cold storage or butcher shops and is housed in Whitehorse when not in use (Yukon Government, 2006).

The facility, costing $175,000 was funded by the Yukon government. In addition, through the Canada-Yukon Agriculture Policy Framework, federal funds helped to support the operational costs of the unit for the first five years of its existence. The government-funded initiative was aimed at facilitating growth in the livestock industry, and came in response to producer demands for increased access to processing and slaughtering infrastructure. High expectations for the mobile unit were expressed during its first few initial years, in the hope that Yukon farmers would begin to be able to meet consumer demands and invest in the development of their businesses. In addition, the high quality of Yukon-grown meats combined with
the low-stress factor of on-farm slaughter was expected to allow for a particularly high quality product (Yukon Government, 2006).

Despite high hopes that the mobile unit would function as the missing link to the Yukon’s meat supply chain, producers have been less responsive than anticipated. While many producers are eager to gain access to the commercial market, they also insist that the costs they incur for the mobile units’ services are too high. Slaughtering costs range from $100 to $30 per animal head depending on the animal type and in addition, producers must pay a $1.30 per kilometer fee for bringing the unit to their farm and then to a further processing or cold storage facility. Because the unit is housed in Whitehorse, producers feel that the more remote and distanced they are, the more they are penalized by cost. In addition to the transportation costs, customers must also pay a $70 cleaning charge after the use of the facility and if they are not ready when the unit arrives, a $70 per hour charge for non-utilization is administered. In addition, producers must have an inspector-approved pit for any waste created during the slaughtering process (Keevil 2006; Whitehorse Star, 2006).

While some producers remain skeptical that they will be able to compete in the commercial market due to the high costs associated with using the mobile unit, others remain more optimistic and see the mobile unit as an opportunity to expand their business. In addition, producers do realize that there are costs incurred when transporting animals to a stationary facility, however most Yukon farmers rely on
farmgate sales of live animals, which they can then legally help a buyer slaughter and process. In this respect, some producers may be unprepared or hesitant to begin to participate in a different market where margins are lower but quantity can be increased (Keevil 2006; Whitehorse Star, 2006).

Despite the presented challenges, the unit has enjoyed some successes, as a key outcome of Growing Forward (2008-2013) for the Yukon included an increase in Yukon-grown meats in local restaurants and retail markets due to the services offered by the territory’s mobile abattoir (Government of Canada, 2013). Stakeholders are insistent that the government continue to subsidize the unit, however, until producers are able to reach a scale of production that makes utilization of the unit viable. In addition, it is acknowledged that more infrastructure in the form of cold storage and further processing is necessary and that the offering of these services must work in coordination with the mobile unit (Yukon Agriculture 2020 Visioning Workshop, 2012).

Despite the continued challenges and hesitations among producers with regards to use of the mobile abattoir, efforts to see the unit succeed continue from both the public and private spheres. Indeed, beginning in 2014, the Yukon Government announced that in an effort to increase exposure to and utilization of the mobile abattoir that its services will be offered to producers at no cost over the next year (Pope, 2013). In addition, a privately owned processing and cooling facility was recently opened in the Whitehorse Region, and will work in coordination with the
territory’s mobile abattoir, renting out the facility for further processing and cooling for a fee (Circle D Ranch, 2013).

5.2.4 Conclusion of Mobile Abattoir Development in The Yukon

Given the particular extremes faced in the Yukon, the continued efforts and initiatives aimed at fostering a Yukon-based food system are impressive. While the introduction of a mobile abattoir into the territory over seven years ago has not solved all of the problems and complexities related to the territory’s meat supply chain, it has been successful in increasing access to slaughtering services for producers. The development of the unit has also made it clear what other infrastructures, services and capacities will be necessary in order for the territory to continue to increase the availability of Yukon-grown meats. In addition, with the offering of free services from the mobile unit over the next year, producers who are considering increasing their amount of livestock may be more willing to do so with the confidence that their government is committed to finding a way to ensure that slaughtering services are available.

5.3 Mobile Abattoirs in British Colombia

5.3.1 British Colombia’s Local Food System

Local and regional food systems have been of particular importance for rural and remote communities within British Colombia (B.C.) for decades. For many rural and remote locations, including island communities, topography and geographic location can make centralized, conventional food system distribution a significant challenge.
When these communities are able to find access to food distributed through major, centralized channels, they typically pay a premium on foodstuffs due to the additional costs incurred in getting food to their communities. Through local production, processing and distribution, however, rural and remote communities throughout the province are able to strengthen their food systems while creating or sustaining jobs. Therefore, for many rural and remote communities, the presence of a local or regional food system provides not only food resiliency but serves also as an important component to economic development (British Colombia Food Systems Network, 2012; Marrapese, 2012).

Developing a local or regional food system can present its own set of challenges in the rural and remote contexts as the absence of critical links within the supply chain, such as distribution channels and processing facilities, can make it difficult for producers to move their goods. Rural and remote farmers also face viability concerns due to high property costs, unpredictable weather, price competition, and high production costs. In addition, challenges related to production in the province are presented by the province’s complex terrain, which beyond making coordination among the supply chain difficult, also presents a unique set of challenges when attempting to develop province-wide agricultural policies (British Colombia Food Systems Network, 2012; Marrapese, 2012).

Issues of food security and the importance of fostering healthy food systems are also of increasing concern to the urban environments of B.C., where healthy and local
food access is limited by available household food dollars due to high housing costs, rising food and energy prices and poor wage growth. In fact, as of 2010, 8% of all British Colombia households were considered ‘food insecure’ and it is estimated that due to both local and global characteristics, British Columbians will increasingly face issues related to food insecurity (Hild, 2009; British Colombia Food Systems Network, 2012).

In response to food access challenges presented in urban centres, local governments are becoming increasingly engaged in planning for food resiliency. In Metro Vancouver for instance, there has been a major push for investing in the City’s urban food system with recent planning proposals aimed at promoting public investment into planning for urban food systems at the municipal level (Hild, 2009). Indeed, Vancouver has recently set the goal of becoming a global leader in urban food systems by the year 2020 and as such the City is currently discussing the adoption of a local food strategy (BC Food Systems Network, 2013, CBC News, 2013).

Regardless of the different types of challenges faced in rural, remote and urban food systems within British Columbia, it cannot be denied that they remain interconnected. These communities, systems and contexts do not function in isolation. While initiatives aimed at developing more robust food systems in the urban context will continue, urban centres will still rely on their rural and remote counterparts to provide them with food. Similarly, rural and remote food supply chains will continue to rely on the demand created by urban centres.
5.3.2 *British Colombia’s Regulatory Context*

The reliance on rural communities to produce food is especially true of meat, whose production is constrained by a variety of factors in the urban context. For producers, responding to consumer demands for local, traceable meats has been met with some degree of challenge, specifically with regards to access to livestock slaughtering and processing services. In the early 2000’s, national and international precedents began to demand a higher degree of due diligence in the slaughtering and processing of livestock. This, combined with the 2003 Canadian BSE scare prompted a significant shift in the way that British Colombia dealt with the issue of meat inspection and while the changes affected producers and processors of all types and scales, the impact on local and regional meat supply chains was particularly harsh (Martin, Ostry and MacDonald, 2010; Marrapese, 2012).

Up until the introduction of the British Colombia Meat Inspection Regulation (MIR) in 2004, uninspected on-farm slaughter for retail within the province was allowed through a decentralized system that gave municipalities reign over non-federally inspected facilities. This system underwent a significant transformation, however, when the new MIR mandated that by 2007 all meat to be sold for retail within the province would need to be slaughtered at a provincially licensed and inspected facility. Although approximately only 5% of meats within the province were being processed in uninspected facilities in 2004, a large majority of these facilities were servicing local and regional food supply chains. While programs at the provincial
level, including a three-year phase-in stage, were created in order to ease the process of change, many smaller slaughtering and processing facilities could not sustain the various financial and economic pressures they were facing, and closed their doors. This created significant impact on the producers who relied on the services of their local abattoirs, and in some communities facing a lack of access to slaughtering and processing services, farmers drastically reduced their number of livestock or stopped producing animals altogether (Martin et al., 2010; Sustain Ontario, 2012).

While the implementation of the new MIR did present new challenges for producers and processors, particularly those within local and regional food supply chains, the provincial government continued to adapt its approach to meat safety and in 2010 implemented a considerable change to its MIR. The change came in the form of two additional licensing types, ‘Class E’ and ‘Class D’, both in the form of allowed on-farm, uninspected slaughter. Still utilized to date, Class E licensing allows for the on-farm slaughter of 1-10 animal units for direct sale to consumers. Under a Class E license, meats sold to consumers must be produced by the same farmer who slaughters them and the products can only be sold within the farmers ‘regional district’. Class D licenses allow for the on-farm slaughter of 1-25 animal units, and while products are also limited to their originating regional district, they can be sold to ‘secondary food establishments’ such as retail locations and restaurants. In addition, with a Class D license, producers are allowed to slaughter animals produced by other farmers. Class D licenses are restricted to pre-defined regions.
within the province, of which there are ten. The ten regions, designated by the provincial government based on population density, livestock numbers, transportation barriers, and the absence of licensed slaughter facilities are also applicable to class E licenses. For Class E licensing, however, producers outside of the designated regions may apply to become licensed, but must demonstrate that they require services (such as custom or niche slaughter and processing) not available to them via the existing, fully-licensed facilities in their region (BC Ministry of Health, 2013). Figure 2.0 below outlines B.C.’s current meat licensing classes, including Classes D and E.

**Figure 2.0 Meat Regulation in British Colombia**

(British Colombia Ministry of Health, 2013)

The issues surrounding meat inspection regulations and how they apply to the local food and community resiliency contexts are not necessarily unique to the province
of British Colombia. Indeed, many Canadian territories and provinces face a myriad of challenges when it comes to the regulation of meat sold for human consumption. These common challenges tend to intersect between the interests of fostering healthy and resilient local food systems, protecting the public health and safety, maintaining and facilitating small business diversity and viability, and effectively building and maintaining the trust of international buyers. It is at this intersection that governments must make decision on how meats will be regulated.

While it has been a long public process, regulatory adaptability within British Colombia’s MIR is facilitating growth in the local food sector. While B.C.’s MIR has been criticized for its outcome-based approach to meat inspection, the regulatory framework has maintained a level of overarching broadness that has made it possible to adapt to meet the particular needs of its different contexts. Interestingly, B.C.’s MIR will undergo further revision and possibly even remodeling, as the province recently took over its own meat inspection, formerly operated by the Canadian Food Inspection Agency.

**5.3.3 British Colombia’s Mobile Abattoir Inventory**

While the road to legal, local livestock slaughtering and processing across B.C. has experienced a diversity of hurdles, business opportunists and interested organizations have developed mobile and modular abattoirs as a potential solution. *Image 1.0* shows a picture of a mobile abattoir, which serves the same function as a
regular, stationary abattoir except that it is built to be moveable and can therefore travel to various locations. Several mobile abattoirs and one modular abattoir now exist across the province, servicing rural, remote, and island communities alike. Mobile abattoirs differ in their approaches to mobility, with a modular example being semi-permanent, while others will travel on-farm or work in conjunction with stationary docking facilities. With at least eight of these units across B.C. at present, many communities that previously had limited or complete lack of access to livestock slaughter have been pleased to be offered the services of a mobile abattoir, making it possible to overcome barriers related to travel, distance and topographic roughness.

Image 1.0

Mobile and modular units span the British Colombia terrain from one of the most south-westerly parts of the province, Salt Spring Island, to the south-eastern Kootenay Region, all the way up in to the interior Cariboo Region. Beyond the expansive reach of mobile abattoirs across B.C., they are also servicing a diversity of livestock types. In the more remote interior regions as well as in the island example, mobile abattoirs are multi-species, meaning
they can process more than one type of animal, although they typically will specialize in either red or non-red meats. In addition, while all mobile abattoirs offer slaughtering services, some are also able to offer further processing services.

Salt Spring Island Abattoir offers a unique example, with an impressive intake ability ranging from beef to poultry. In addition, the facility offers further processing services such as grinding, boning, and cutting and wrapping. For Salt Spring Island, the introduction of the MIR resulted in a complete lack of access to on-island slaughtering and processing services. With no licensed abattoir, livestock production took a big hit after 2004, decreasing by 50% by 2008. For the producers who remained, the costs of animal slaughter and processing were very high and included two Ferry trips plus a driving commute, resulting in an increase in animal stress and therefore contributing to weight loss, quality reduction, and ultimately producer economic loss. With a lack of access to these necessary services threatening the viability of the small farms that remained, Salt Spring Island Agricultural Alliance, a community-based agricultural organization, took initiative to build a fully inspected multi-species abattoir. The Salt Spring abattoir services both red meat animals and poultry and has been in operation since 2012. The abattoir is modular, meaning that it is a hybrid between a mobile and stationary facility. The Salt Spring Abattoir could be moved if necessary, with a portion of it comprised of a trailer on wheels, while the rest is semi-permanent (Marrapese, 2012; Salt Spring Abattoir, 2013; Sustain Ontario, 2013).
While mobile abattoirs appear to be enjoying success across British Colombia, the new model does not come without its own set of challenges. In interior regions, those who had invested in mobile abattoir technology were frustrated at the introduction of Class E and D licenses, making on-farm slaughter for retail legal, and undermining the basis for the viability of mobile units (Luymes, 2010). Regulatory challenges are not limited to this, however, and even B.C.’s rather flexible regulatory framework has presented stumbling blocks for mobile abattoir owners. With limited space in mobile units, it can be difficult to meet certain rules such as the need for an office and washroom for inspectors, who similar to Ontario, must be present during the slaughtering of animals. Even when having a more compact facility seems to offer advantages, such as opportunities related to cost and quality effectiveness, regulatory compliance can make taking advantage of these characteristics challenging. In one example, a mobile abattoir owner was told that stainless steel could not be used for the unit’s interior walls because it did not appear on the ‘approved materials list’. After some consideration, however, regulators decided that the stainless steel material would be acceptable (Vancouver Sun, 2011).

The cost of materials can also be an important determinant of mobile abattoir success, with mobile abattoirs across B.C. facing a wide variety of start-up costs, ranging from one hundred-twenty thousand to five hundred thousand dollars. This, in combination with the amount of start-up funds that is leveraged through outside funding, has an impact on financial and business viability. For one mobile abattoir owner, with a start-up cost of $60,000 plus an eventual additional $60,000 in
necessary upgrades, capital cost was kept relatively quite. This is especially true considering that this particular mobile abattoir owner has reached average annual business revenue of over one hundred thousand dollars, and even more impressively, only operates six months of the year (between May and October) (Vancouver Sun, 2011). For some mobile abattoirs facing high start-up costs and where regional production remains depressed, such financial gains may not come with such ease.

5.3.4 Conclusion of Mobile Abattoir Development in British Colombia

British Colombia poses a unique case study into the issues surrounding local livestock slaughtering and processing. With so many changes in the regulatory context over the last decade, a particularly distinct topography, alongside a push for local and regional food system development in the rural, remote, island and urban contexts, British Colombia may be positioned as a national leader when it comes to innovation in local meat supply chains. While still arguably at an experimental stage, the growth and seeming success of mobile abattoirs in British Colombia poses some important questions for consideration for provinces like Ontario such as, What makes a mobile abattoir viable? Why so much variation in start-up cost? Are they most effective in remote regions? Can mobile abattoirs help to bring back a livestock industry in communities where that industry has been lost? While not all of the lessons that have and will be learned from mobile abattoir business growth in British Colombia will be transferable, there will likely be those that are. These will
be lessons that can be applied to discussions in other jurisdictions considering such alternatives and as such, it will be important to pay attention to the successes, failures, and opportunities that are experienced.
Chapter 6.0 Analysis of Primary Data

6.1 Mobile and Modular Owners and Operators in British Colombia

6.1.1 Geographic Range of Case Studies

A total of seven case studies of mobile and modular abattoirs were conducted throughout British Colombia in March of 2014. The geographic range of case studies spanned from the southerly west coast to the far southeast of the province. Case studies therefore represented varying degrees of rural and remoteness. All case studies undertaken, however, were geographically located within 200 kilometers of the southern B.C. border, where it is much more developed generally than in the more northerly interior. Nevertheless, some locations hosting mobile or modular abattoirs were much more removed from urban development than others. For some of the regions where mobile and modular abattoirs were found, mobile and modular abattoir owners pointed to specific transportation challenges faced by producers in having their livestock slaughtered, where the transportation type was specialized or distance from services required in the absence of a mobile abattoir was up to more than two hours over rough terrain that can be particularly challenging to travel in during the winter months. Business owners of currently operational mobile or modular abattoirs identified the geographic region serviced by their business. In all cases, the primary area serviced was characterized dependent on the community or region that the business was located in. Respondents therefore indicated that most customers come from within a one-hour distance to access their services, although rare cases of customers travelling over two hours to access services were also reported.
6.1.2 Business Structure of Case Studies

Case studies represented a range of business models. In terms of business model ownership structure, various compositions were found including: shared ownership\(^5\); co-operative ownership; organizational/co-operative ownership and private ownership. In total, four of the case studies were privately owned businesses, one was under a shared ownership arrangement, one was organizationally owned and one was cooperatively owned and managed through an organization. *Figure 3.0* shows the breakdown of business ownership structure among the seven case studies. It was found that the structure of business model did impact the pace of business development. For instance, in cases where units were privately owned, development of the business took place more quickly than that of co-operatively or organizationally owned units. Respondents from all four types of ownership structures reinforced that for those businesses where decision-making is shared democratically, that decisions as they relate to business development often take relatively long periods of time, resulting in sluggish business development. Conversely, for units owned privately, respondents identified the pace of business development as more rapid.

\(^5\) Shared ownership differed from co-operative ownership primarily in that decision-making processes over the business were not necessarily democratic in nature. In addition, it is important to note that in those cases where shared ownership was documented, that non-democratic decision-making did not appear to present any issues for those involved and that the arrangement seemed to work in this sense.
The business ownership model of mobile and modular abattoirs also reflected a mixture of business development intent. For instance, for those units co-operatively and organizationally owned, business development was often cited as arising out of a personal need for slaughtering or processing services. Co-operatively owned mobile or modular abattoirs were therefore typically owned and operated by producers or agricultural groups or organizations with intent to provide members, as well as the broader local meat market, with access to slaughtering and/or processing services. Co-operatively and/or organizationally owned abattoirs therefore functioned, or intend to function in the future, from a not-for-profit costing model. For privately owned units, initiation for business development was cited as either recognition of a market opportunity and/or out of a personal need for abattoir services. Privately owned businesses functioned from a for-profit costing model. For one respondent in the privately owned business category, the potential for profit making was identified as the main reason for business development, followed by a desire to provide abattoir services for the local meat sector. Profit making, however, was not the primary catalyst for business development for all
other privately owned mobile or modular abattoir businesses, where respondents identified personal and community local food sector needs as the principal motivation, followed by the potential for profit making. For one respondent, initiation for abattoir development came solely from the desire to provide local and niche producers with access to slaughtering services with no expectations for profit making.

Case studies also revealed a range of business models in terms of livestock markets served, services offered and overall slaughtering capacity. Out of the seven mobile and modular abattoirs studied, two of the units are considered multispecies, meaning they are capable of servicing both the poultry and red meat sectors. While in terms of the red meat, both of these units provide servicing for cattle, swine and sheep, and one of the units will also service goats and rabbits. For this unit, further processing for all animal types is allowed through a Class A license\(^6\). For the other multi-species unit, further processing through a Class A license is allowed for poultry only. In this instance, services offered for red meat animals must comply with a Class B license, meaning that only the slaughtering (no further processing) of red meat can take place.

Four out of the seven units studied service the poultry market exclusively, with two of the units operating from a Class A license, allowing for further processing. The other two poultry units are regulated through a class B license, allowing slaughter

\[^6\] Further information on B.C. meat regulation and classification system can be found in Chapter 5.0 of this document, section 5.3.2
only. In addition, one of the poultry units services both the organic and conventional poultry sectors, requiring strict product separation between organic and non-organic products to ensure organic classification. The last remaining unit out of the seven case studies was built and licensed to service red meat animals only including cows, swine, sheep, goats, bison and buffalo and is regulated through a class B license, allowing slaughtering only. Figures 4.0 and 5.0 show a breakdown of unit type based on livestock market serviced and level of licensing.

**Figure 4.0**

<table>
<thead>
<tr>
<th>Type of Livestock Serviced</th>
<th>Level of License</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red Meat</td>
<td>Class B’ Slaughtering and Further Processing</td>
</tr>
<tr>
<td>Poultry</td>
<td>Class A’ Slaughtering Only</td>
</tr>
<tr>
<td>Multispecies</td>
<td></td>
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</tbody>
</table>

Respondents with currently functioning mobile and modular abattoirs identified a range of slaughtering capacities that did coincide with several factors. For poultry, respondents identified a range of slaughtering capacity between 125 and 400 birds per day. The mobile or modular abattoirs that reported the highest capacity for slaughter also tended to have experienced lower capital costs. No one single explanation was uncovered for this finding however, it was revealed that unit design did affect efficiency. In addition, it was suggested that when business owners had

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7 Although there were seven case studies, Figure 5.0 shows a fifty percent breakdown for each classification due to one of the facilities having both a Class A (for poultry) and Class B (for red meat) license. Therefore, a total of eight licenses are represented here.
increased involvement in the design of their units, that innovation towards reducing capital cost and improving the outcome for practical and efficient infrastructure could be increased. Another possible correlation with regards to unit capacity was found in terms of servicing price. For those with units with high slaughtering capacity, prices were relatively low when compared to units with lower capacities, while demand and business volume were found to be relatively high. These findings suggest that price and demand for mobile and modular abattoir services may experience elasticity. Capacity was also cited as relative to the number of employees and level of employee skill. Overall, these relationships suggest that servicing capacity for mobile and modular abattoirs is linked to a myriad of inter-related factors including availability of skilled labour, service demand, price and physical infrastructure.

For red meat units, owners referenced the maximum capacity for red meat animals as limited by the slaughtering, processing, and cooling infrastructure of their respective unit, citing a capacity of ten or less for any large red meat animal and up to twenty per day for medium sized red meat animals. For modular units, capacities are higher because there is more room for cold storage. Mobile red meat units face relatively extreme feasibility challenges due to the limited space provided for required animal cooling. Lower holding and cooling capacity in mobile red meat units results in a lower service turnover rate, effectively reducing the cost-benefit of traveling to a farm or docking station. Potential mitigation of this challenge could come in the form of a separate cooling facility, but this would require more capital.
expense. One red meat unit owner also pointed to the other logistical limitations inherent when dealing with larger animal units including the size of the unit (which requires a high towing capacity vehicle and reduces on-farm mobility); higher fuel costs; longer preparation time to set the unit up before slaughter can occur; long slaughter times and lengthy cleaning of the unit once slaughter has been conducted. From the perspective of this respondent, given that the maximum number of large animals that their unit has been able to slaughter in one day is two, all of the related challenges make the unit unfeasible financially, generating overall financial loss if used to travel to individual farms for slaughter.

Interestingly, however, mobile poultry units were found to not utilize their mobility to a significant extent and in fact, two out of the four mobile poultry units now remain stationary. For one of these units, the main reason referenced for this was a highly localized consumer demand resulting in a lack of need to travel to multiple locations. This respondent indicated, however, that while traveling to various regions for extended periods can be logistically challenging in terms of finding staff accommodations, having the option of being mobile is still a positive business characteristic that allows for adaptability should circumstances change. For the other unit, the respondent indicated a lack of intention to ever utilize the mobility of the unit, stating that having a stationary facility would have been preferred but that they perceived regulatory compliance for stationary abattoirs and processing facilities to be much more burdensome than for a mobile unit. For those respondents who did identify utilization of their unit’s mobility, mobility was
regarded as a key characteristic to overall business viability given the relative
decentralized demand in the regions serviced.

6.1.3 Business Success, Challenge, and Overall Viability

Out of the seven case studies examined, three of the units are currently operational,
viable businesses. While more than half of the units studied are not currently
operational, not all of these individual business circumstances are indicative of
economic business failure. In fact, in only one instance was the economic or financial
feasibility of a mobile unit identified as a main reason for non-operation. For all
other non-operational units, a range of non-operational causes were referred to. For
instance, one out of the seven units is currently being used for personal use only,
with intent to reconfigure ownership and re-establish a broader market. One of the
units is currently non-operational due to owner frustration over provincial
regulation, with frustration over municipal regulation referenced as a secondary
reason of non-operation for the unit suffering from financial and economic non-
viability. At the time of study, one unit was brand new and in the process of
undergoing a change of ownership before becoming operational. For the businesses
that are viable and operational however, business success has not always been
inherent. Indeed, the range of business status found throughout the seven case
studies represents a diversity of both challenges and successes. As such, from each
case study there are practical and transferable lessons to be learned that have the
potential to guide future development of mobile and modular abattoirs in British
Colombia, Ontario and beyond.

With regards to those mobile and/or modular businesses not currently functioning, respondents pointed to some general challenges related to small business and more specifically, small agricultural business as a whole. For instance, for several business owners, demographic issues relating to personal aging and sickness alongside a lack of options for business succession resulted in the inability or disinterest in continuing with their business. Given that many mobile and modular owners, whether in shared, co-operative, or private ownership arrangements are producers, this finding parallels those identified among farmers across British Columbia and Canada generally - an aging demographic seeking to exit business with a lack of interested successors to take business over. This is a broad albeit serious reality that poses a significant degree of vulnerability to the agricultural and local food sectors as a whole, particularly with regards to small to medium sized enterprise.

Furthermore, this is a challenge characterized by a myriad of macro-level factors such as the rising price of farmland, high levels of required capital investment, consolidation throughout the agricultural sector (suppressing small to medium sized agricultural enterprise viability as a whole) and a continued increase of other more secure and less expensive career options for young people. These are challenges however, that can also be addressed at the niche and micro levels through innovate and novel businesses such as mobile abattoirs.

Regulatory challenges were noted in several instances of both operational and non-
operational businesses. Business owner perspective towards the regulatory environment was indeed characterized by a range, and varying degrees, of concern. For some mobile abattoirs owners, prescriptive policies regulating infrastructure details at the micro-level caused some degree of frustration. Through communication with regulators however, instances of regulatory adaptability and reflexivity were also cited by respondents, reflecting B.C.’s results-based approach to meat safety. One respondent spoke to their continued communication with regulators in order to achieve safe food outcomes stating that, “When they would tell me that you have to put this [blah blah blah] in, I’d go, well: what would that achieve?” The respondent went on to explain that once the necessary result was clearly understood, they would work with the inspector to explore different ways of achieving that desired outcome without sacrificing efficiency or incurring unnecessary costs. For other business owners, a slight to moderate degree of concern over regulatory and inspection inconsistency between regions was brought forth. In addition, several respondents perceived the regulatory environment as it relates to meat safety as being more adaptable for mobile and modular units than for stationary units. On the more severe side of regulatory concern, some respondents expressed extreme discontent with the introduction of D and E class licenses\(^8\) within the province, pointing to the perceived double-standard nature of D and E class licenses in comparison to A and B class licenses, furthermore asserting that the introduction of such licenses within their region has undermined their business viability.

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\(^8\) Further information on B.C. meat regulation and classification system can be found in Chapter 5.0 of this document, section 5.3.2
In terms of financial business viability, perhaps the most important aspect for realized success is consumer demand. In several cases where businesses reported financial viability, respondents spoke to the specific demand-related challenges they had faced. In one instance, a respondent indicated that a distinct surge in demand for their service had recently been experienced due to the closure of a nearby abattoir. In other instances, respondents spoke to consumer discontent with service pricing, but also pointed out that several factors must be considered when comparing the service price of mobile and modular abattoirs to options that are further distanced, such as animal stress (and therefore quality) and transportation cost.

Available funding for capital costs has also played a significant role in the development of mobile and modular abattoirs across British Columbia. For six out of the seven case studies, provincial funding programs (the Meat Industry Enhancement Strategy and the Meat Transition Assistance Program) helped to fund the capital costs of the units to various extents. In at least one case, a loan from an organization was also used to help fund the cost of purchasing a mobile abattoir. For the majority of the businesses examined, therefore, outside funding has been a vital component to business development and success. At the same time, in those instances where business development was championed from the private sector and business owners incurred some degree of financial risk, business success could be identified as more likely. In two of the case studies facing non-operation, these factors were identified as significant to the extent that without financial risk,
business owners had less to lose. In addition, without ensuring operational capacity from an individual level, businesses face a higher risk of closure. In terms of capital cost funding, a wide range of costs for unit development was identified, ranging from $60,000 to over $450,000. Respondents did identify that in many cases, the cost of developing a mobile abattoir could have been reduced through initiatives such as the use of secondary materials, locally sourcing materials and through innovative solutions to infrastructure requirements, especially given the adaptability of results-based meat regulation throughout the province. In addition, as mobile and modular abattoirs are a relatively new concept, it is also anticipated that lessons learned in terms of reducing capital costs while not sacrificing safety or efficiency will become more easily realized. Other noted business challenges reported included: a lack of community support; lack of local government support; poor rural planning affecting municipal bylaw and zoning outcomes for business development and difficulty in coordinating between groups and organizations in terms of ownership structure and ownership change.

While mobile and/or modular business across British Colombia have faced a fair share of challenges related to both the local livestock sector and more generally, small business, much can also be learned from the successes enjoyed throughout the province. In several cases, respondents indicated that the development of mobile and modular abattoirs has been a vital aspect in bringing back a local livestock industry to many regions where that industry had been lost during the transition to fully required licensing and inspection in 2004. One respondent, in speaking to the
influence of mobile abattoirs recalled the rather devastating impact of the change on small to medium sized farmers such as themselves,

We had many many abattoirs in the area that we could all make use of...there were so many of them that they were close to everybody, and of course then it was an unregulated business in the sense that we could all sell farm gate and we could raise as many birds as we wanted and actually have some profit. When the rules changed, everyone closed down. We had nobody.

Due to the geographic uniqueness of British Colombia, lending to a greater degree of remoteness and dispersed production for many regions, mobile and modular abattoirs present a unique opportunity in providing the necessary infrastructure for the development of local and resilient food systems. Moreover, several respondents pointed to the success of mobile and/or modular abattoir businesses in terms of business viability, reflecting on the fact that mobile abattoirs are capable of earning business owners a livelihood, or non-profit businesses enough business volume to cover operating costs and sustain an employee base. In all cases of successful mobile and modular abattoir businesses, communities and regions have benefited through increased rural economic development and the local food sector has advanced through the creation of a more robust local meat supply chain. While the concept of the mobile abattoir as a travelling abattoir that will service individual farmers on-site is not reflective of the reality of existing, feasible mobile abattoir businesses, the
mobile model does provide several advantages that stationary facilities do not. Overall, while the capital costs of mobile abattoirs are less than that of stationary facilities, they also provide a degree of adaptability unique to the mobile model. For one out of two respondents whose mobile units currently remain stationary, this adaptability was still perceived as a key characteristic of their business. For the other respondent, the mobile aspect of the business was perceived to result in a higher degree of regulatory adaptability. Mobile abattoirs are also considered as extremely important in areas where production is dispersed, and through the use of docking stations, producers are able to utilize access to slaughtering and/or processing services within a reasonable, and often relatively short, distance.

6.2 Ontario Abattoir, Processor, and Butchering Facility Owners

In order to better understand the market dynamics surrounding local and traceable meats in Ontario and furthermore, to gain insight towards the potential demand for mobile abattoir services across the province, ten Ontario-based processing, abattoir and butcher owners servicing the local meat market were interviewed. Respondents reflected a range of business geographies throughout both Southern and Northern Ontario. Overall, respondents identified that there is a strong demand for local meats in Ontario and that this demand is growing. They also pointed to a lack of consumer understanding regarding the concept of traceability, stating that demand focuses more around the want for local, rather than traceable, meat products. Respondents in Southern Ontario largely stated that they do not face challenges in
meeting the demand for local meats, with one respondent pointing out that for small butcher facilities in the industry it can be difficult to secure a consistent supply of local meats. All respondents in Northern Ontario, however, stated that they face severe challenges in responding to consumer demand for local meats, as supply is severely limited by a lack of production.

For Southern Ontario respondents, the introduction of mobile abattoirs within the region is not seen as being high in demand. In addition, given the range of challenges faced by many small to medium sized abattoirs, processors and butcher shops in Southern Ontario, these business owners feel that development of the local meat supply chain must first address these challenges. In addition, Southern Ontario business owners expressed fear that mobile abattoirs would create stiff competition, given their low capital costs, within an already challenged market. In addition, respondents in Southern Ontario stated that they would have concerns over the ability of mobile abattoirs to meet the current meat regulations and standards. Several Southern Ontario respondents did however suggest that mobile abattoirs could be useful in the Southern Ontario context for emergency situations, and several also pointed to their potential usefulness in the context of Northern Ontario. Likewise, all respondents in Northern Ontario stated that there is a high potential demand for mobile abattoirs in the northern regions of the province, given the decentralized nature of Northern Ontario production. In addition, the lack of processing infrastructure in Northern Ontario was seen as limiting the overall livestock sector, while at the same time it was recognized that the development of
stationery facilities in this context is not necessarily feasible.

6.3 Regulators in British Colombia

Key informant interviews with one British Colombia policy official as well as one program-based employee of a quasi-regulatory body reinforced several findings pertaining to the interaction between regulators and mobile and modular abattoirs owners, as well as those findings related to the overall provincial policy approach to meat safety in British Colombia. Respondents verified the results-based policy approach to meat safety throughout British Colombia, referring to regulatory adaptability when possible in order to help facilitate mobile and modular abattoir business development. Respondents identified, in contrast to the perspective of some mobile and modular abattoir business owners, that the regulatory approach towards stationary versus mobile/ modular facilities is uniform. At the same time, respondents pointed out that as mobile and modular abattoir businesses are a relatively new, unique and ever-adapting processing and slaughtering model, regulators have had to navigate through micro-level regulatory issues that have not necessarily been experienced through interactions with stationary facilities. Nevertheless, respondents identified that all provincially regulated abattoirs and processing facilities are subject to the same level of compliance for results-based regulatory outcomes. Overall, no specific regulatory challenges were identified with regards to regulating mobile and modular businesses, and it was perceived that these business models are no less capable of complying with regulatory standards.
than their stationary counterparts. Respondents did recognize however, that innovation on the part of the business owners of mobile and modular abattoirs has had to occur in order to comply with regulatory standards. Therefore, it was identified that any burden of challenge or adaptation in terms of mobile and modular abattoir regulatory compliance falls largely on business owners as opposed to regulators.

6.4 Discussion

A review of mobile and modular abattoir development across the province of British Columbia reveals a myriad of successes and challenges with regards to these businesses. It also helps to clarify important questions regarding these business models, such as those related to the ability to meet regulatory compliance and overall business viability. While the case studies conducted bring to light evidence-based examples of mobile and/or modular abattoir success, they also reveal a reality that differs from the sometimes-ideological assumptions regarding how these units function. For instance, in not one case was it reported that a mobile abattoir travels to individual producer’s farms to conduct slaughter. Rather, for those units where mobility is utilized, some farmers provide docking stations that can accommodate mobile abattoirs and other producers in the community then use these sites. While the actual mobility of such units is much more constricted than this, mobile and modular abattoirs do enjoy benefits from having mobility (or at least the option for mobility). Mobility allows for business adaptability and is an
integral characteristic for those units that travel to multiple docking stations.

While many of the criticisms, or at minimum reservations, regarding mobile abattoirs specifically point to their perceived lack of ability to comply with regulation, the findings presented here indicate the contrary. Indeed, from both the perspective of regulators and business owners, mobile and modular abattoirs are quite capable of achieving regulatory compliance, and this is made increasingly attainable within the context of a results-based provincial meat policy framework.

Mobile and/or modular abattoirs do face challenges nonetheless, with many of these challenges similar to those faced by small to medium sized agricultural enterprise generally. From demographic and succession issues, to ownership structure issues and regulatory challenges, mobile and modular abattoirs face a range of challenges that often parallel those faced by agricultural smallholders at large. More specific issues related to the mobile or modular model largely relate to large animal slaughtering, which faces low capacity rates, resulting in financial viability issues.

Despite the challenges faced however, the case studies conducted show that mobile and modular abattoirs have been extremely influential in facilitating the development of the local livestock industry for several British Colombia regions, while more broadly stimulating rural economic development. Moreover, within the broader context of alternative food system development internationally, the mobile and modular abattoir models fit quite well within the concept of niches. Rossi and
Brunori (2010) describe niches within alternative food system development as innovative developments arising as a response to crisis occurring within conventional social and technical systems. Furthermore, they suggest that while niches typically result in rather modest output within the larger context that they create a very important diversity that results in greater system resiliency. This description closely parallels the reality of successes that have been realized through the development of mobile and modular abattoirs in British Colombia, as they represent niche style business models developed largely in response to a sweeping loss of abattoir access for many British Columbian communities. In addition, they have stimulated sector growth that, albeit small in scale compared to the larger conventional system, has created a higher degree of food system resiliency across the province.
Chapter 7.0 Conclusion

7.1 Considerations for Moving Forward in Ontario and Beyond

Research conducted across British Colombia examining mobile and modular abattoirs served to increase the understanding of these businesses in terms of capacity for regulatory compliance, geographic significance, financial feasibility and the overall impact on the local food system. Findings presented above show that mobile and modular abattoirs can be extremely useful and viable businesses. They also reinforce our understanding of the range of challenges faced by small and medium sized agricultural enterprise generally, as well as identifying those challenges that are specific to the mobile and modular abattoir context.

To return to the original objectives of this research, which were to provide information that would lead to a stronger understanding of the potential for mobile and/or modular abattoir development within Ontario, first it is important to recall the research findings for Ontario itself. Research conducted to better understand the demand for local meats and potential demand for mobile or modular abattoirs in Ontario showed a strong reservation towards the introduction of mobile abattoirs within Southern Ontario. The justifications for these reservations reinforce research findings from the literature review that highlight the variable challenges currently faced by stationary abattoirs, processing facilities and abattoirs across the region. Research conducted in Ontario also revealed, however, a strong potential demand for mobile or modular abattoirs in Northern Ontario, where an already fragmented
production base is further challenged by a lack of access to livestock slaughtering and processing services. As such, potential future mobile or modular abattoir development within Ontario should consider these north-south dynamics, and furthermore ensure that the viability of existing abattoir businesses is not neglected.

Research findings also underscore the point that initiation towards mobile and modular business development must be backed by consumer demand. Furthermore, consumer demand should be understood in more specific terms such as the types of services that are in demand (slaughtering, further processing, animal type and niche markets, among others) as well as willingness to pay. While the majority of case studies discussed here have benefited from government support, and furthermore while it is realized that government support is necessary for these business models to function, research results suggest that the development of mobile and modular abattoirs should be championed from within the private sector. Examples of these businesses being championed from the public sector in both the Yukon and British Colombia suggest that demand for mobile abattoir services cannot be stimulated alone by the creation of mobile abattoir businesses, but that the supply of mobile abattoir services must be developed in response to consumer demand.

While government assistance in the form of funding has been essential for almost all mobile and modular abattoir businesses studied throughout British Colombia, full funding of units results in zero financial risk from the private sector, and this can contribute to short and long-term business viability. Government support for mobile
abattoir businesses has been essential not just in terms of funding but also with regards to regulation. Through a results-based, adaptable regulatory approach to meat safety at both the macro (policy) and micro (inspection) levels, mobile and modular abattoirs have been able to find ways of achieving the necessary outcomes for meat safety without compromising business viability. While fears over the mobile abattoir model’s ability to result in safe food have been forthcoming from several other jurisdictions, the experience in British Colombia of both business owners and regulators show that this fear is not justified and that furthermore, a much higher degree of food traceability is offered by these businesses in comparison to the conventional system.

It must also be realized in the context of food system resiliency, rural economic development and local food system development that novel and innovative businesses such as mobile and modular abattoirs do create market diversification, benefitting rural communities and the agricultural sector at large. For jurisdictions and entrepreneurs considering the development of mobile and modular abattoirs, lessons learned from British Colombia, as well as a host of other regions, can be very useful in avoiding and overcoming a variety of challenges. In addition, as more mobile and/or modular abattoirs are built, available cost efficiencies will continue to improve.
7.2 Conclusion and Final Reflections

A review of the literature in terms of the development of a globalized food system shows the inherent vulnerabilities for food security, resiliency, and sovereignty in relying on external sources for one of the most fundamental human needs, that of food. As pressures created by this system continue to result in social, environmental, economic and political susceptibilities, alternative food systems and networks are increasingly being realized as a means of transforming food system dependence towards food system independence. From a vast array of societal contexts food system alternatives such as local food will continue to emerge in order to provide increased food justice and sovereignty. At the same time, governments must recognize the need to facilitate and adapt to changing needs in changing times. And this will be a difficult task. Globally, national and regional governments must balance between complex and often competing interests that intersect between the need to support small and medium sized agricultural enterprise while functioning within a global marketplace where international pressures for food safety standards are ever-present. As novel and innovate business models such as mobile and modular abattoirs emerge, they must be met with equally novel means of facilitating such business development, while still conforming to international and national standards. In the case of British Colombia, the provincial results-based meat policy is one example of how this can be achieved.

At the same time, mobile and modular abattoir business development in various Canadian regions has shown that development within alternative food networks
achieves greatest success when demand for such development is identifiable. In extreme cases such as the Yukon, such development has been initiated from the public sphere and has been met with little market interest. Each context is unique to its own characteristics, however, and it is important that the need for food system resilience is recognized by all actors. In this sense, development for the Yukon’s local meat sector may come in due time and a lack of private interest in the introduction of a mobile abattoir is not necessarily indicative of failure, but instead could be an important step in creating a higher degree of food sovereignty as well as market access for the territory.

In order to reflect on the findings of this research, it is necessary to recall the original objectives posed at the beginning of this thesis which were to create a comparative research framework that would be capable of providing a) a review of mobile abattoir businesses and their relative successes, or lack thereof, across several Canadian jurisdictions; and b) an overview of how the mobile businesses fit and functioned within their respective jurisdictions’ economic, regulatory and geographical contexts while answering the research questions, do mobile or modular abattoirs present potential for Ontario in terms of a) increasing access to local livestock slaughtering and processing and b) creating a more robust local food system generally?

Indeed, a review of mobile abattoir businesses and their successes and challenges, triumphs and defeats across Canada have been documented. Moreover, how these
businesses fit within their respective jurisdictions’ economic, regulatory and geographical contexts has also been presented. The case studies conducted in British Colombia provide an in-depth review of business success and challenge as well as a close look into how these businesses interact within the B.C. meat regulations. While the economic and geographical contexts of B.C. in terms of local meat relate most closely with Northern Ontario (highly localized demand and supply, little international trading, higher degrees of remoteness), the results-based approach to food safety adopted by the province offers transferable lessons to any and all jurisdictions. By providing opportunity for innovation in terms of meeting regulatory standards, B.C.’s regulatory approach has facilitated the development of mobile and modular abattoirs, effectively stimulating increased rural economic development and greater food system resiliency.

The research presented here has also functioned to debunk some of the assumptions often made regarding the mobile abattoir model. In terms of ability to provide safe food, producers and regulators jointly agreed that mobile and modular abattoirs are no less capable of doing so than stationary facilities. With regards to the level of mobility of the units, it is also clear that strategic planning and collaboration among actors (producers, local, provincial governments, community groups, consumers) is necessary in order for mobile abattoirs to be viable while providing the supply chain with the services required.

In Ontario, the situation for local livestock processing and slaughtering services
remains complex, characterized by challenges related to corporate consolidation within the meat industry, rising demand for local meats, a need for robust food safety policy and the development of increasingly pronounced local food systems. Despite the complexities presented in the Ontario context, the research findings presented here are supportive that mobile abattoirs do have the ability to increase access to local livestock slaughtering and processing and therefore have the capacity to support the creation of a more robust local food system generally. If mobile abattoirs are developed within Ontario, it will be important to draw from the lessons learned from other jurisdictions. Some of the key take-away messages derived from this research in terms of mobile abattoir viability include; the necessary demand for service from the private sphere alongside the need for supportive programming, policy and regulation from the public sphere; the need for coordination among actors along the supply chain as well as between business owners and local and provincial/territorial governments; poultry-services mobile abattoirs face less challenges than red meat units; and that there are a range of options in terms of level of mobility (i.e. docking stations, the option of modular abattoirs). In addition, a presented range of business ownership type also relays important information regarding the benefits and drawbacks of various business ownership breakdowns.

The research presented here suggests that in the case of mobile or modular abattoir development, there is significant potential for local food system benefit particularly in Northern Ontario. In addition, it is recognized that diversity among the
The agricultural sector generally will provide for increased rural economic and food system resiliency within the global context of rising food system instability. As actors in both the public and private spheres move towards finding compromises that allow the development of local and alternative food systems within a global context, it will be imperative to look to the lessons learned of others such as the case studies and other research presented in this thesis.
References


Perth County and University of Guelph. (2013). Opportunities and Challenges in Local Livestock Processing and Slaughtering within Perth County. Guelph, Canada: Author


Appendix

Interview Guide- Government Officials

Interview Length: 20-30 min
Minimum of two participants per jurisdiction (Alberta, Yukon, B.C.)
Interviews to be conducted via telephone

This interview guide is intended to facilitate a better understanding of how governments and regulators interact with mobile/modular abattoir owners and operators, what challenges are faced in regulating these units, and general lessons learned from governments who have worked with mobile/modular abattoir units first-hand.

1. What is the current government position on mobile abattoirs?

2. How does the provincial/territorial government currently interact with mobile abattoir owners and operators?

3. a) What is the role of your unit or branch?
   b) How does your unit or branch work with mobile abattoir operators?
   c) Have you had experience working with mobile abattoir owner/operator, and if so, please explain?

4. What have been the major challenges and/or opportunities that have been found as mobile/modular technology has developed in your province or territory?

5. Are there additional challenges that are presented when working with mobile abattoirs versus stationary abattoirs?

6. Given your working knowledge related to the development of mobile/modular abattoirs, what advice do you have for other jurisdictions considering this technology?

7. Are there any additional comments that you would like to add?

Interview Guide- Ontario Processors (Stationary Abattoirs and Processing Facilities)

Interview Length: 10-15 min
Minimum of 10 participants
Interviews to be conducted via telephone

The goal of this interview guide is to understand the current consumer demand for local, traceable meats experienced by existing abattoir and processing facility owners and operators within Ontario, as well as any challenges and opportunities (such as mobile abattoirs) related to meeting these demands.

1. Please give a brief description of your business (i.e. slaughtering vs. processing, level of inspection, market, business volume, animal types)

2. How would you describe the current demand for local, traceable meats?

2. Do you face challenges in responding to consumer demand for local, traceable meats?

3. How does the regulatory framework for meat processing impact the local meat supply chain?

4. a) Are you familiar with mobile abattoirs?

   b) Given your knowledge of the meat processing industry within Ontario, do you think that there is demand for mobile/modular abattoir services within the current market?

5. Do you have any additional comments that you would like to add?

**Interview Guide- Mobile Abattoir Operators**

Interview Length: 30-40min
Minimum of 6 participants
Interviews to be conducted in-person

This goal of this interview guide is to understand the general characteristics of mobile/modular abattoir operations (size, location etc.) as well as to understand both the financial, economic and regulatory opportunities and constraints on mobile abattoir businesses.
6-10 participants
1. Can you share little bit of history about your business? (i.e. length of time in operation, number of employees, seasonality, percentage of total family income)

2. a) What types of animals do you process?
   b) What slaughtering and processing services do you offer?
   c) What is the maximum capacity (animal numbers/day) of your unit?
   d) How much do you charge for your services (per animal)?

3. What prompted you to start a mobile abattoir?

4. What challenges, if any, did you face in starting up the business?

5. How would you characterize your interactions with government regulators/inspectors? (frequency, ease of communications, regulatory adaptability)

6. What was/is the most difficult regulatory challenge to overcome for your business?

7. What is the economic environment for your business in terms of competition?

8. a) What geographic region do you service?
   b) Where does the unit travel to? (i.e. on-farm, docking stations, various communities)

9. What were your initial start-up costs?

10. How much did regulatory compliance influence this cost?

11. Are there any government services (that currently do not exist) that you feel would be beneficial to your business development?

12. Are there any additional comments or lessons learned that you would like to share?