Becoming Sovereign: Farmers Values and Food Sovereignty in Nova Scotia

by

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Glossary 1
Chapter 1: Introduction 3
1.1 Statement of the Problem 3
1.2 Research Purpose and Questions 5
Chapter 2: Literature Review 7
2.1 Conceptual Framework: Food Sovereignty 7
2.2 Food Distribution and Food Sovereignty 8
2.3 Food Policy in Nova Scotia and Canada 10
2.4 The Rural Perspective 12
Chapter 3: Methods 14
3.1 Case Study Framework 14
3.2 Survey Design 14
3.3 Population 15
3.4 Analysis 15
3.5 Limitations and Delimitations of the Study 16
Chapter 4: Results 17
4.1 Demographic Summary 17
4.2 Distribution of Farm Products in Nova Scotia 17
4.3 Sustainable Influences on Nova Scotian Farms 18
4.4 Analysis of Farm Values 19
4.4 Food Sovereignty in Nova Scotia 21
4.5 Farm Values and Food Sovereignty 22
Chapter 5: Discussion 25
5.1 Food Sovereignty in Nova Scotia 25
5.2 Value Alignment 25
References 27
Appendix A: Consent Form 34
Appendix B: Survey 37
Appendix C: List of Codes Used 45
A Priori Codes 45
Emergent Codes 45

Glossary

To clearly communicate this research, it is important to define recurrent terms:

International Food Systems

Also referred to as *long food chains* or *traditional food systems*, these are the systems that consumers generally think of when they need to feed themselves. The traditional food system supplies major grocery stores in an area and are largely for-profit, involve long transport processes and are heavily regulated (Smith, et al., 2015). A traditional food system can include locally produced food, however it does not include the flow of information which is an important component of alternative food systems and food sovereignty (Smith et al., 2015).

Alternative Food Systems

Also referred to as *short food chains,* alternative food systems (AFS) can include anything from local farmers markets, community gardens or community supported agriculture. AFS reject the ideals of the traditional food system and value local, sustainable food production (Follet, 2009; Food Secure Canada). The AFS represent the part of the food network that have "rejected the culture and practices of the traditional food system" (Follett, 2009, p. 37) and value food produced close to where it is eaten, where citizens are involved in the decisions about the production and accessibility of the food they are eating (Food Secure Canada, 2015). Smith, Lawrence, MacMahon, Muller & Brady (2015) identify AFS as having few, if any, steps between the producer and consumer. The reduction of steps between consumer and producer is key to provide information regarding the origin and the embedded values of the food product so that a consumer can make informed decisions about the food that they purchase (Marsden, Banks & Bristow, 2000).

Food Security

Food security has had a wide range of definitions, beginning first in 1974 to describe food availability and pricing (FAO, 2015). Later, the United Nations Food and Agriculture Organization

(FAO) expanded the definition to include all people having both physical and economic access to basic food at all times (FAO, 2015). More recently the World Food Summit at the 1996 Rome Declaration on World Food Security declared that "Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life" (FAO, 1996).

If the above definitions hold true for food security, then food insecurity is the inverse. The Canadian government defines food insecurity as the "inability to acquire or consume an adequate diet quality or sufficient quantity of food in socially acceptable ways, or the uncertainty that one will be able to do so" (Health Canada, 2004).

Food Sovereignty

Food sovereignty expands upon the definition of food security to include how food is produced and where it comes from (Food Secure Canada, 2015). Food sovereignty is a set of principles which focuses on the production of food, rather than access to food. The core principles of food sovereignty as defined by Food Secure Canada (2015, p. 10) are: "focusing on food for the people, valuing food providers, localizing food systems, [localizing control], building knowledge and skills, working with nature and recognizing that food is sacred." The principles of food sovereignty can lead a community towards socio-ecological resilience by increasing its capacity to adapt to unexpected stressors.

Socio-Ecological Resilience

Socio-ecological resilience refers to a system's *capacity to adapt* to ensure that stressors do not have adverse long-term consequences, as well as the system's ability to *expand* its capacity to learn from and adapt better in future to stressors (Constas, Frankenberger, & Hoddinott, 2014; Pelletier, Hickey, Bothi, & Mude, 2016; Smith et al., 2015).

Chapter 1: Introduction

1.1 Statement of the Problem

Food systems are the way we grow and distribute food. Simply, they are the path that food takes from a farmer's field to a consumer's plate, through retail, processing, marketing and transportation ("Addressing the Vulnerability of the Global Food System", 2017). Food systems vary in terms of how industrial they are, and how geographically expansive they are - from small, local, family-farm-based community systems to large, industrial, global systems. Global industrial food systems are those which are large in scale and produce vast quantities of food (Hendrickson & Heffernan, 2002). Such systems rely heavily on resources such as water, fossil fuels, and arable land, and also increase carbon emissions that deteriorate the environment (Conjin, Bindraban, Schröder, Jongschaap, 2018). Moreover, they create many steps between producer and consumer, which often means that food is consumed far from its origins. Alternative food systems (AFS) have been a response to the environmental, social and health-related shortcomings of this style of food production and distribution. According to Follet (2009), AFS have three common traits

> "(1) they redistribute value through the network in the opposite direction of the bulk commodity system;
>
> (2) they re-instill trust between the producer and the consumer; and
>
> (3) they articulate new forms of political association and market governance."

These food systems prioritize ecological sustainability, local production, and citizens' involvement in decision-making surrounding the production and accessibility of food and represent an attempt to increase food sovereignty (Dietz Chiasson, 2017; Follett, 2009; Food Secure Canada, 2015; Marsden, et al., 2000; Moore, n.d.).

Determining the impact of AFS is important to addressing food security and food sovereignty, especially within the paradigm of global climate change. Food security as defined by Food Secure

Canada (2015) (see Glossary) highlights the need for sufficient, nutritious food but fails to address how that can be systematically achieved. Food sovereignty fills this conceptual gap by adding a concern for the means of production, the producer *and* the consumer (Food Secure Canada, 2015). This critical view of AFS will inform how food sovereignty issues are met in the future and will determine if what is being done today is effective.

Locally, industrial food systems have been addressed in a few ways. The industrial food system has been challenged by AFS across Nova Scotia in the form of farmers markets, produce stalls, community gardens and Community Supported Agriculture (CSA) boxes. Nova Scotian farmers markets have grown three-fold in the last decade as consumers support AFS such as the local food movement (Agriculture and Agri-Food Canada, 2013; Crawford & Butler, 2013). Crawford & Butler (2013) found that 43% of Nova Scotians who shop at farmers markets do so primarily to support farmers and the local food movement. However, despite this support for local food, the Nova Scotian diet is comprised of 68% imported food (Crawford & Butler, 2013; MacLeod & Scott, 2010). This persistent replacement of locally-produced food transfers the social, economic, and environmental benefits away from the region consuming the food to the region *providing* the imported product; it disconnects local production from local consumption, which destabilizes the local food system (Foster, 2018; MacLeod & Scott, 2010). This is especially problematic—and puzzling—because Nova Scotia has the largest number of farms per capita in Canada. Local food producers could theoretically be filling a greater proportion of Nova Scotians' diets. However, any import-induced destabilization of the local food system could have an even greater effect on the social, economic and environmental health of the province because more people depend on local agriculture for their livelihoods. This may account for the decrease in the total number of farms in Nova Scotia and the decrease of the Nova Scotian farmer’s net yearly income, despite the fact that farmers are producing more product each year (Crawford & Butler, 2013; MacLeod & Scott, 2010). Comprehensive food policy is necessary to

combat the destabilization of the local food system. The Halifax Food Policy Alliance (2014, p. 87) calls for public investment from all levels of government to support a "healthy, just and sustainable food system." A coordinated food policy is required from all levels of government in order to tackle the issue of food sovereignty in Nova Scotia.

1.2 Research Purpose and Questions

This thesis investigates the links between food sovereignty and the traits and attributes of the farms who produce food in Nova Scotia. The purpose of the study is to gather data about the values of non-industrial Nova Scotian farmers and to compare those values to the pillars of food sovereignty described by Food Secure Canada (2015, p. 10):

- "Focuses on food for the people;
- Values food providers;
- Localizes food systems;
- [Localizes control];
- Builds knowledge and skills;
- Works with nature;
- Recognizes that food is sacred."

Most studies surrounding food sovereignty focus on urban food deserts, so this study, by broadening the focus to an entire region, and surveying farmers who are primarily located outside the urban centre, is addressing several research gaps in the field (Guthman, Morris, & Allen, 2006; Sage & McCraken, 2017). This study aims to answer the following questions:

- Do the values of food sovereignty described by Food Secure Canada (2015) align with the values of Nova Scotian farmers?
- What do Nova Scotia farmers' values tell us about the state, and possibility, of food sovereignty in Nova Scotia?

By understanding the values of farmers in the context of food sovereignty, this research will begin to assess the state of food sovereignty in Nova Scotia. Understanding how farmers' values—and the choices and priorities they likely underlie—compare with the values and priorities of the food sovereignty movement shows us the social and cultural factors that Nova Scotia food policy would need to take into account if its goal is to increase the province's food sovereignty. As the beginning of the distribution chain, farmers may have an impact on the decisions made further down the food distribution chain. Surveying a sample of farmers at four Nova Scotian farmers markets creates a preliminary picture of food sovereignty in Nova Scotia that can be used for further research on this topic.

Chapter 2: Literature Review

2.1 Conceptual Framework: Food Sovereignty

Most of the research on alternative food systems uses food security as a framework, with food sovereignty being recognized more recently as an important expansion to the issue of food security (Clapp, 2014; FAO, 2015; Food Banks Canada, 2016; Food Secure Canada, 2015; Tarasuk, Dachner & Mitchell, 2014). Food security and food sovereignty often have the same goals of creating better food access for individuals but disagree on their start points. Food security as defined by Food Secure Canada (2015) (see Glossary) highlights the need for sufficient, nutritious food but fails to address how to achieve those needs. The concept of food sovereignty goes into more detail on how the goals of food security can be achieved in addition to caring for the producer, the means of production and the consumer (Food Secure Canada, 2015). The reader familiar with these issues may notice the use of food sovereignty in this thesis and the limited attention paid to food security.

Scholars argue that food security and food sovereignty need to be considered together so that valuable insights from each perspective are not lost. Agarwal (2014, p. 1251) argues that food sovereignty should be refined to allow regions to increase food production to the best of their ability and to recognize that not every country can be self-reliant in food. This also gives individuals a choice – they can be self-sufficient to the extent in which they wish to be, rather than what their government requires of them (Agarwal, 2014). Clapp agrees (2014) with Agarwal (2014) that access to food is paramount, and that neither food security or food sovereignty describe how to ensure that all citizens have equal access to food. Both the frameworks of food security and food sovereignty are useful as tools to engage in issues surrounding hunger and food access on a global level – but Clapp (2014) urges that only by looking at multiple approaches to fighting hunger will progress be made.

Instead of focusing on local food sovereignty, a regional system that includes local food would make food sovereignty a more attainable goal (Clancy & Rhuf, 2010). Cleveland, Carruth and

Mazaroli (2015) argue that only focusing on local food can hinder change. Local food systems must be part of the process and advance the goals of alternative food systems to be effective and for socio-ecological resilience to be met (Cleveland et al., 2015; Constas, et al., 2014). By allowing a system to increase its capacity to adapt to stressors, socio-ecological resilience increases the likelihood of success for food sovereignty.

Broadening the local lens into a regional one allows for a more comprehensive scale to be applied to a food system. An ideal regional food system, according to Clancy & Rhuf (2010, p. 1) is "a system in which as much food as possible...is produced, processed, distributed, and purchased at multiple levels and scales [to meet the population's food needs]" which would increase the food sovereignty for the entire region. Regional food sovereignty could promote the creation of rural food hubs, or networks of community organizations and individuals who "work together to build increasingly socially just, economically robust and ecologically sound food systems that connect farmers with consumers as directly as possible" (Blay-Palmer, Landman, Knezevic & Hayhurst, 2013, p. 524). By emphasizing the regional model where all levels of food production are engaged, the goals of food sovereignty and socio-ecological resilience may be more likely to be met (Altieri, 2009; Blay-Palmer, et. al, 2013; Clancy, 2010; Smith et al., 2015).

2.2 Food Distribution and Food Sovereignty

Industrial food systems, sometimes referred to as *long food chains*, are retailer driven food networks that supply major supermarkets and involve "inter-state transport, minimal inventory and 'just-in-time' delivery of products" (Smith, et al., 2015, p. 47). Industrial food systems excel at creating high outputs for the mass consumption of food. These systems ensure that farmers excel at producing one crop or one type of livestock, however this means that knowledge is lost over time as farmers become less diverse in their skills (Hendrickson & Heffernan, 2002).

AFS typically operate outside of the distribution system mentioned above[1]. AFS are focused on local food access and production, while addressing environmental concerns, health issues and labour standards in the agricultural industry (Follett, 2009; Hendrickson & Heffernan, 2002; Winson, 2010). These systems are a response from producers, consumers, and activists to the current industrial food system. The status quo food system prioritizes profits over nutritional health and environmental issues. Consumers often distrust global food firms, knowing that they are primarily motivated by profits (Hendrickson & Heffernan, 2002). Alternative food systems combat this by limiting the number of intermediaries between consumers and producers, providing farmers the ability to give consumers insight into their food production through more one-on-one interactions and allowing for more trust to form in the relationship (Smith et al., 2015). Smith et al. (2015) also found that industrial food systems are unequipped to provide food to regions affected by natural disasters. Supermarkets are "reliant upon distant sourcing, long-haul transport and 'just-in-time' delivery" (Smith et al., 2015, p. 46), whereas smaller-scale, alternative systems are locally embedded, and thus can continue to serve their consumers (Smith et al., 2015). Mass production of food does not allow for quick adaptation to changes in the food market. It is limited in serving unique markets that are developing with food fads or with consumers who wish to eat locally and/or seasonally (Hendrickson & Heffernan, 2002). Alternative food systems are, theoretically, able to adapt more quickly to new trends because they are smaller in nature (Hendrickson & Heffernan, 2002). Their lack of scale and low output serves as an advantage when trends or seasons change the demand in the food system.

Thus, in theory, alternative food systems can create a stronger, more socio-economically resilient community by addressing these issues. However, there is debate among scholars whether alternative food systems can effectively promote food sovereignty. For example, Wang, Qui and

[1] That being said, small farms that participate in AFS do sometimes feed into the industrial food system (eg. a small blueberry farm selling their product to Sobeys). AFS and the industrial food system can occur alongside one another.

Swallow (2014) looked at how community gardens and farmers markets affect food deserts in Edmonton, Alberta through regression modelling and spatial analysis. They found that 72% of people in Edmonton live within 1km of a supermarket, community garden, or farmers market, and could therefore access fresh food on a consistent basis, thus increasing the food security of the region. Guthman, Morris and Allen (2006) argue, however, that alternative food systems such as the ones mentioned in the study above are a temporary measure that does not meet the goal of sovereignty. They found that the continuing financial security of the home had priority over food security for both farmers and individual households. This means that only affluent shoppers are able to participate in the food security offered from alternative food systems because traditional food systems are easier to access both in terms of an individual or household financial situation and geography (Guthman et al., 2006; Hendricks & Heffernan, 2002; Sage & McCracken, 2017). Continuing the research of Guthman et al (2006), Sage & McCraken (2017) looked in-depth at the location of farmers markets in Washington state and discovered that farmers markets tend to be located near grocery stores. Sage & McCraken (2017, p. 40) argue that "many of those consumers who are geographically left disadvantaged by the current supermarket locations remain so under the more localized venue of farmers' markets". They suggest that it is the exception, rather than the rule, that farmers markets alleviate the issues surrounding food deserts in urban areas, and that those who benefit the most from farmers markets and other alternative food systems are upper and middle-class urbanites (Guthman, et al., 2006; Sage & McCraken, 2017).

2.3 Food Policy in Nova Scotia and Canada

> "Public investment and support are influential to a healthy, just, and sustainable food system. Governments at all levels, businesses, and community institutions can set policies and spending priorities that affect community food security and optimally these

> actions would be coordinated, strategic, and evidence-based" (Halifax Food Policy Alliance, 2014, p 82).

Food policy in Nova Scotia and Canada is written entirely with a focus on security, rather than food sovereignty. There is currently no coordinated policy on food security at any level of government. This lack of conclusive policy exists despite multiple food focused charities and non-profit groups recommending dedicated policy as an important step to tackling food security in Canada (Halifax Food Policy Alliance, 2014; Mah, Hamill, Rondeau & McIntyre, 2014; PROOF, 2016a). Recognition of the need for food security policy is not new. It goes back to the signing of the Rome Declaration in 1996, which committed Canada to the right to food for all people (FAO, 1996; Patterson, 2016). By signing the Rome Declaration, Canada committed to sending progress reports to the United Nations on the state of food security in the country. However, Canada stopped sending reports in 2008. Household food insecurity (HFI) continues to be an issue (Mah et al., 2014; Patterson, 2016). When the United Nations Special Rapporteur on the Right to Food came to Canada in 2012 to look into the state of food security in the country, he found the situation unacceptable: "frankly the question of hunger is not a technical question, [it is] a political question" (De Schutter, 2012). Scholars have also found political will to be a key to the creation of food policy. McIntyre, Patterson & Mah (2016) found that whenever food security was discussed, it was framed around issues of morality, leading the debate toward a discussion of the principles of the opposing political party, rather than toward policy proposals.

Despite food security being a major factor connected to poverty, many provinces that have introduced poverty reduction strategies have not accounted for HFI (Proof, 2016a). In Nova Scotia, implementation has been slow even though food policies are pivotal to the successful decrease of HFI (Communications Nova Scotia, 2012; Halifax Food Policy Alliance, 2014; Patterson et al., 2016; PROOF, 2016a; PROOF, 2016b). The Nova Scotia government has produced reports on Participatory Food Costing, which investigates the cost of eating in Nova Scotia (Nova Scotia Food Security

Network, 2008) and a plan for healthier eating in Nova Scotia (Communications Nova Scotia, 2012), but these initiatives have not resulted in a decrease in HFI. Statistics Canada reports that between 2008 and 2012, when the aforementioned reports were published, food insecurity increased by 2.3% (Statistics Canada, 2017). Scholars agree that collaborated policy at all levels of government is necessary for food security to succeed (Communications Nova Scotia, 2012; Halifax Food Policy Alliance, 2014; McIntyre et al., 2016; Patterson et al., 2016; PROOF, 2016a).

2.4 The Rural Perspective

Current research leaves a large gap when addressing rural areas of food. As the primary producers of food, it is odd that rural areas have not been addressed. Compared to their urban counterparts, rural residents have an increased risk of poverty with lower education levels, lower incomes, fewer stable job opportunities, less secure housing, and poor access to health care services (Burns, Bruce, & Marlin, 2007; Food Secure Canada, 2015). Researchers have found that this kind of poverty and economic turmoil can not only lead to an increased vulnerability to natural disasters, but also to significant out-migration from rural communities to urban ones (Burns et al., 2007; Pelletier, Hickey, Bothi, & Mude, 2016). This is devastating to rural populations, as these communities are already small, and out-migration may lead to the closure of vital institutions such as health care and schools (Burns et al., 2007) in addition to the effects it may have on food production for the area.

Vulnerability in rural Nova Scotia is also linked to the concept of social capital. Bourdieu 1986, p. 249) defines social capital as “the aggregate of the actual or potential resources which are linked to possession of a durable network…”. The work of Dean and Sharkey (2011) find that food security and social capital are linked, particularly in rural areas. The theory of social capital encompasses access to resources through one’s community, which includes supermarkets, fresh fruits and vegetables and other alternative food networks, which can be scarcer in rural settings than in urban ones (Dean & Sharkey, 2011). For instance, there may not be as much access to local food in rural

areas due to existing distribution networks. It may not be profitable for small farms to distribute their food to rural supermarkets because there are fewer consumers than in cities, leading to decreased food access. Access to food is also an issue in rural areas in ways that it is not in urban areas: people must drive to get their food, making it imperative to own a vehicle or know someone who owns a vehicle, whereas in urban areas it is more possible to find alternate transportation to access food. This may have ramifications on food sovereignty because requiring a vehicle to access food could make it difficult for people in low income situations because they have less money in their budgets for food in general. Local food is often more expensive than food from outside of the regional sphere. This can lead to more reliance on an informal food economy, "the production, distribution and consumption of goods and services that have economic value but are neither protected by a formal code of law nor recorded for use by government-backed regulatory agencies" (Knezevic, 2015, p. 413). Informal food economies are often used in rural areas as a form of self-reliance (Kenzevic, 2015), which could show up through growing food in gardens or informal trade (such as trading garden vegetables for eggs from a neighbor) for instance. This reliance on informal food networks in rural areas to access food rather than more traditional food networks such as supermarkets or even farmers markets means that if the community resources disappear, people in rural communities will become vulnerable and more food insecure. A decline in social capital, and thus food security, makes food sovereignty for Nova Scotia imperative for the socio-economic resilience of rural communities.

Chapter 3: Methods

3.1 Case Study Framework

By using a case study methodology, the study aims to provide insight into the state of food sovereignty in Nova Scotia by comparing and contrasting the values of Nova Scotian farmers with the values of food sovereignty as described by Food Secure Canada (2015). Case studies are effective at highlighting real-life situations and looking at phenomenon in an in-depth manner (Yin, 2009; Flyvbjerg, 2001). The use of a case study allows the researcher to gather context-dependent knowledge about rural food systems in Nova Scotia. More specifically, this is a paradigmatic case study, which highlights the characteristics of society by using the case study as a metaphor for the larger society the case study exists within (Flyvbjerg, 2001). By focusing this research on farms that sell products at farmers markets in Halifax, Nova Scotia, this thesis highlights potential values of all farmers in Nova Scotia. Four farmers markets were chosen for this case study:

- the Halifax Forum Farmers Market,
- Alderney Landing Farmers Market,
- Halifax Seaport Market and
- Brewers Farmers Market

These markets were chosen to sample a diverse selection of producers of Nova Scotian farm products that may be aiming to attract different types of consumers.

3.2 Survey Design

A self-administered survey was identified as the most effective means of answering the research questions given the time and budget constraints of the thesis. A survey also ties into the case study framework mentioned above, as both case studies and surveys allow the researcher to determine the attributes of a larger population from a smaller group (Creswell, 2003). A survey allows the researcher

to identify trends and opinions of food producers in Nova Scotia by studying a sample population. The survey includes both open-ended and structured questions to gather participants' opinions in their own words without overwhelming them or causing fatigue (Palys & Achison, 2008). The close ended questions are both categorical-response and likert-scale in style so that respondents are able to consider a range of alternatives before providing their answers (Palys & Achison, 2008). Within the survey, one area of investigation leads back to the research questions: demographic data, traits, values and behaviours of farms and farmers. This area is investigated to allow the researcher to analyze how those traits, values and behaviours relate to food sovereignty in Nova Scotia.

Potential participants were contacted in two ways: in person or through contact information found on the four farmers market websites mentioned above. In person, participants were approached and invited to complete a survey on the spot or later, at home, via Opinio or on paper.

3.3 Population

The survey was distributed to Nova Scotian farmers in four urban Halifax farmers markets using non-probabilistic purposive sampling. In total, 40 farms were approached to participate in the research – each produce or livestock farmer at the four markets according to the farmers market websites. 33 farms were invited email, 7 farms were invited in person. In total, 15 farms responded - 8 online and 7 through paper surveys. The farmers sought for the study were what Palys & Atchison refer to as "experiential experts" as their ongoing work in agriculture in rural Nova Scotia means that they have ongoing exposure to food sovereignty issues in the province (2008, p. 125). Participants were current produce or livestock farmers in Nova Scotia and were 18 years of age or older.

3.4 Analysis

Surveys were analyzed using content analysis: specifically, a combination of a priori and emergent coding. A priori coding is determined before the survey is analyzed using predetermined themes.

Emergent coding refers to themes or concepts that evolved from the data (Stuckey, 2015). Both open-ended and closed-ended questions were coded using a thematic approach. By combining emergent and a priori coding, the researcher looked for themes, consensuses and disagreements and determined the understanding of food sovereignty and the impact of Nova Scotia farms on food sovereignty. Initial coding was based upon values coding and structural coding as recommended by Johnny Saldana (2016) for a priori methods. Values coding reflects "a participant's values, attitudes and beliefs" that represents their perspectives while structural coding applies a "content-based…phrase to a segment of data related to a specific research question to both code and categorize the data" (Saldana 2016, p. 292-298). Before analysis began, the researcher compiled a list of codes, including education, environment, local food, and history. Once analysis began, more themes and values emerged. These included: efficiency, soil health, consumer demand and income. A full list of codes can be found in Appendix C. These methods allowed the researcher to draw themes and values from the data.

3.5 Limitations and Delimitations of the Study

The limitations of this study include the restricted time frame for the research and the small sample size of farmers. Due to the small sample size, this research cannot be statistically representative of the population of farmers in Nova Scotia but can be used to identify patterns regarding food sovereignty in the province. The study is also limited by the time frame of an 8-month academic period, which created limits to the amount of data that could be collected and analyzed. Due to time restraints, respondents at the Forum Farmers Market were only able to be contacted online, not in person. The research questions changed several times throughout the process of this thesis, and as a result two of the values identified by Food Secure Canada as important to food security were not covered in the survey.

The delimitations of the study include the markets included in the study, which were chosen to be a representative sample of Nova Scotian farmers while still being accessible to the researcher.

Chapter 4: Results

4.1 Demographic Summary

Fifteen farms were surveyed at four Halifax farmers markets: Alderney Landing Farmers Market, Brewery Farmers Market, Forum Farmers Market and Seaport Farmers Market. 8 farms responded online, 1 at Alderney Landing and 6 at Seaport. The ages of participants were mostly in the 25-34 and 55-64 age categories with 5 respondents each. There were 2 respondents in the 35-44 and 45-54 categories and 1 respondent in the 65-74 age category. Most participants had some form of post-secondary education: 5 with Bachelors' degrees, 4 with trade and/or technical training, 2 with some college or university, but no degree, 1 with a Masters' degree, and 2 who had not completed high school. Respondents surveyed were mostly located in Hants County and Kings County, with 7 and 5 respondents respectively, only 2 respondents located in Halifax County and 1 in Lunenburg County.

4.2 Distribution of Farm Products in Nova Scotia

Overall, the majority of respondents produce vegetables and/or herbs. Self-reported answers to close-ended questions showed that 10 farms produce vegetables, 9 produce herbs, 5 produce fruit or poultry, 4 produce beef, 2 produce dairy or honey, and 1 produces sheep, goats or pork. When asked to explain how they decide what they produce and sell, 11 farms indicated that consumer demand was an important factor. Efficiency was also important to 5 respondents – one respondent explained how efficiency was just as important as economics, "beans are a good seller, but it takes too much time to pick them and get a good price for them." Sustainability and enjoyment were also mentioned, with 3 and 1 respondent discussing them respectively. "We grow what we enjoy, what will prosper here without much artificial intervention…and what is beneficial to the environment."

Farms mostly sell their products in their home county (13) and within Nova Scotia (12), with only 1 respondent selling outside North America and 2 respondents selling outside of the Maritimes. Within Nova Scotia, the majority of respondents sell their products at the Seaport Farmers Market and Brewer's Farmers Market. The other farmers markets mentioned by respondents include Alderney Landing (2), Wolfville (2), Lunenburg (2), Windsor (1) and the Forum Farmers Markets (2). Outside of farmers markets, farms reported that they primarily distribute through supermarkets and restaurants (4 each), on the farm through direct sales and u-picks (3), wholesale (1) and through other food stores such as organic food stores (1).

When asked to describe what kind of consumer they market their products to 5 of the respondents explained that they tried to attract consumers who are environmentally conscious. This included consumers who prefer free-range meat, vegetarians and vegans, those who prefer pesticide-free products, and those who prefer organic produce. Respondents also indicated that local consumers were targeted (4 respondents) and those consumers who are health-conscious (3 respondents). In terms of specific demographics of consumers, respondents indicated that they target women over men (3 respondents), people with expendable income (2 respondents) and university students (2 respondents).

4.3 Sustainable Influences on Nova Scotian Farms

All farms surveyed showed an awareness of environmental sustainability. When asked in a closed-ended likert-style question if they agreed with the statement "environmental sustainability is important to my business" 100% of respondents selected agree or strongly agree. Environmental sustainability was defined in an opened-ended question by each respondent differently, but the major themes of the definitions included protecting the ecosystem, being self-sustainable, caring for the land lon- term, and giving to the land more than is taken away. For instance, one respondent described environmental sustainability as "a system or method that gives more back than we take." Another respondent

describes the importance of caring for the land long term by "protecting [the] water, [the] birds and the natural environment around [the] farm."

If respondents indicated that environmental sustainability was important to their business, they were asked to select the sustainable influences on their farm from a set list of influences. The "buy local" and organic movements are the strongest influences on Nova Scotian farms with 14 and 9 respondents respectively selecting them. Six livestock producers who responded selected free-range livestock, cruelty-free practices and hormone and anti-biotic free practices as influential on their farms. Vegetarian and vegan practices were important to 4 respondents and permaculture was important to 3.

Respondents were also asked to outline any environmental sustainable practices that were implemented on their farm outside of the set list given to them. Respondents additions included using fewer chemicals such as pesticides and chemical fertilizers (8 respondents), managing soil health through soil sampling and crop rotation (5 respondents), implementing biodiversity practices (5 respondents), water management, such as reducing water consumption and protecting nearby fresh water (2 respondents) and using alternative fuel sources (1 respondent). The importance of these responses will be delved into further in the discussion section.

4.4 Analysis of Farm Values

Farm values were referenced in both closed-ended and open-ended questions. In the closed-ended questions respondents were asked to fill out likert-scale responses regarding specific values, including the importance of environmental sustainability to their business, increasing yearly profits, feeling challenged in their work, expanding their business, continuing family traditions and enjoying their work. As mentioned above, 100% of respondents agreed or strongly agreed that environmental sustainability was important to their business. When asked if it was important that their profits increase

yearly, 27% strongly agreed, 33% agreed and 40% neither agreed nor disagreed. 60% of respondents agreed that being challenged in their work was important, with 20% strongly agreeing, 13% neither agreeing nor disagreeing and 7% disagreeing. 7% of respondents strongly agreed that expanding their business was a high priority, 40% agreed, 40% neither agreed nor disagreed and 13% disagreed. Continuing family traditions was important to a majority of respondents, with 40% strongly agreeing to the statement and 47% agreeing. 13% or respondents neither agreed nor disagreed. When asked if enjoying their work was important to them, 80% of respondents strongly agreed and 20% agreed that it was important.

The open-ended questions regarding farm values did not directly reference values but asked for specifics about the farm history, factors that go into what is produced on the farm and aspects of farming in Nova Scotia respondents would share with new farmers. When asked why they started farming, the majority of respondents stated that family history (9) or a desire to find work that was enjoyable (7) influenced their decisions. One respondent explained, “Our farm is a third-generation family farm… I chose to continue farming because I love the wholesome lifestyle and visceral experiences.” Other influences included caring for the environment (2), finding income in a rural area (2), building new skills (1), and producing healthy food (1). “The farm was started when my partner and I were in our early 20s…,” explained one respondent, “We were influenced by the Back to the Land movement of the 1960s and 1970s and saw [it] as a way to earn our livelihoods in touch with the land.”

When asked to explain any changes that had been made to the farm throughout the farms’ history, respondents mentioned environmental changes (5), structural changes (4), specialization change (4), economic changes (3). Four respondents indicated no changes had occurred or did not respond to the question. The history of the farms was framed by 5 respondents with the changes that occurred. For example, one respondent said, “The original marketing concept for the farm was

supplying apples exported throughout the British Empire. This changed…when England joined the Common Market. At this time the farm switched to a focus on the local market. This further changed when we started producing organic fruit…because of demand that was unfulfilled in the local market. We also do processing of sweet cider and apple cider vinegar."

When asked what they would share with new farmers included the difficulty of working as a small farm (7), educating about the local environment (7) and the need for more awareness about farming practices (7). One respondent discussed the importance of small farms, "The small farm sector is the future, the hope for food security and [it] needs more support going forward." Six respondents also discussed the importance of having knowledge about marketing and the economy to be successful as a small farm. "You will make less than minimum wage at times or perhaps most of the time," said one respondent. Another wanted to remind new farmers that being successful as a small farm will take time, "When I started at the Halifax market, few people bought from me. It is a trust thing. It takes time to build that relationship, but once you do, it's great." Respondents also discussed the importance of local markets (3) and the need to enjoy farming, "[It's] extremely rewarding to provide high quality, low volume products to those who desire them." The values discussed above will be discussed further in Chapter 5.

4.4 Food Sovereignty in Nova Scotia

Farms were asked, in an open-ended manner, if food sovereignty exists in Nova Scotia. 71% of respondents indicated that yes, food sovereignty exists, and 29% indicated that it did not. One respondent who indicated that food sovereignty existed focused on food security in their descriptions, "Most people have access to fresh, locally produced food. I don't think people actually see it though." Another thought that food sovereignty existed, but many people "ignore the importance of eating sustainably." A respondent who did not believe food sovereignty exists in Nova Scotia stated, "The

large scale of the grocery industry and monopolistic tendencies make it hard-to-impossible for smaller enterprises to market enough to be [financially] sustainable. I do not feel there is support from the federal government for a local food system." Others were concerned with the amount of import and export from the industrial food system: "Outside of commodity produce such as eggs, chicken and dairy, we only produce 8-12% of the food consumed in Nova Scotia, so most people [only] have access to imported produce."

4.5 Farm Values and Food Sovereignty

In order to determine if the values of food sovereignty as outlined by Food Secure Canada (2015) and the values of Nova Scotian farms aligned, survey responses were coded to focus on several food sovereignty themes:

- Access to food
- Building knowledge and skills
- Food produced by and created for local people
- Healthy food
- Recognizing the sacredness of food
- Local food systems
- Valuing food providers
- Working with the environment and nature

Similarly, by amalgamating themes to open-ended and likert-style responses in the survey, farm values were discovered that food sovereignty did not take into consideration, including:

- Being challenged in the work
- Economic contribution
- Efficiency of farm systems, including production, harvesting and selling
- Enjoying the work

- The importance of family traditions

By comparing these core values, it is possible to draw conclusions on whether food sovereignty is successful at the local production level of the Nova Scotian food system. Table 1 shows the gaps between farm values and food sovereignty values. Data was compiled between all survey questions and common values between respondents were noted. These values are seen in Table 1.

Working with the environment and nature, prioritizing local food systems, building knowledge and educating people about farming and farm techniques, valuing food providers and ensuring that food is produced by and for local people were the only areas that were consistently valued in both food sovereignty and by at least 67% of survey respondents. The food sovereignty values of recognizing the sacredness of food could not be analyzed due to limits in the data and gaps in the survey design. Only 33% of farms surveyed focused on health when making production decisions, which is a major pillar of the food sovereignty movement. Accessible food was also not a high priority for all respondents with 46% mentioning it in the survey, showing another gap between the two sets of values.

The values identified as farm-specific were not mentioned in any literature as being important for food sovereignty, further showing the gap between values of food sovereignty and Nova Scotian farms. A majority of farmers indicated that family traditions, economic contribution (the net income a farm makes per year) and being challenged in their work were important to them, with a minority of respondents indicating that efficiency in their work and farming systems was important.

Comparison of Values of Food Sovereignty vs. Farmers

Values	Food Sovereignty	Farmers
Challenged in Work		
Economic Contribution		
Efficiency of Systems		
Family Traditions		
**Accessible Food*		
**Building Knowledge*		

**Food for the people*		
**Food is Sacred*		
**Healthy Food*		
**Local Food Systems*		
**Value food providers*		
**Working with Nature*		

LEGEND

67 - 100% of Respondents	34-66% of Respondents	0 - 33% of Respondents
	No Data Available	*Food Sovereignty Value

Table 1: Comparison of the values of Food Sovereignty vs. the values of Nova Scotian farmers

Chapter 5: Discussion

5.1 Food Sovereignty in Nova Scotia

Given Nova Scotia's lack of food sovereignty, it is important to determine how to increase the food sovereignty in the province. The literature calls for an increased focus on food policy and political will from municipal, provincial and federal governments to increase food sovereignty (McIntyre, Patterson & Mah, 2016). By surveying a selection of farms at Nova Scotian farmers markets, this study compared farmers' values with the values implied in the food sovereignty framework, so that policies that aim to increase food sovereignty can be designed with this social and cultural context in mind.

Before we can discuss if Nova Scotian farm values align with that of food sovereignty, it is important to discuss food sovereignty itself. As mentioned in Section 4.4, 71% of respondents believe that food sovereignty exists in Nova Scotia, yet only 32% of Nova Scotian's diets are from Nova Scotia (Crawford & Butler, 2013; MacLeod & Scott, 2010). This shows a large education gap within the farming community regarding what Nova Scotians are eating. Producers are a key component to both food sovereignty and to the local food system. If producers do not recognize that food sovereignty is an issue that needs to be tackled, it is less likely that food sovereignty will be achieved in Nova Scotia.

5.2 Value Alignment

If the principles of food sovereignty include the importance of producers, should that mean that *all* the values of food sovereignty align with those of producers? Not necessarily. Being challenged by their work, for instance, was indicated by 80% of respondents as important or very important to them but linking this to food sovereignty is difficult. However, farmers values should be examined to discover if there are areas of the principles food sovereignty that are lacking. The importance of healthy food, for instance, was not found to be important to the majority of respondents, yet it is a key pillar of food sovereignty. Similarly, family history and/or farm traditions were seen as important by

87% of respondents, but this value is not represented within the food sovereignty movement. If producers are able to hand down their traditions to the next generation, they will be less likely to sell to big agribusiness and jeopardize food sovereignty. This mismatch indicates key areas where education and consultation will be needed for future work in food sovereignty in the province. Suggestions for education and consultation could include:

- Hold workshops on food sovereignty in rural areas that include teachings on how to market products as "healthier" than industrially-produced products
- Encourage the production of "superfoods" to hit niche markets within the health food sector
- Create and distribute literature discussing the differences between food security and food sovereignty and why food sovereignty is important

Producers in Nova Scotia place a value on the economic contribution of their products whereas the definition of food sovereignty by Food Secure Canada (2015) does not mention economic contribution. Economic contribution, the amount of income a product makes for the household, could tie into *Valuing Food Providers*, however the pillars as defined by Food Secure Canada (2005) need to be more explicit in valuing the economic security of food producers. Without directly addressing the ability of producers to make a good living outside of the agribusiness model, there is no hope for small, local farms who care about and contribute to food sovereignty.

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Appendix A: Consent Form

Project title: The Impact of Food Distribution on Food Sovereignty in Nova Scotia

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Introduction
You are invited to take part in a research study conducted by me, Jodi Butler, a student at Dalhousie University as part of my Bachelor of Arts degree program. Choosing whether or not to take part in this research is entirely your choice. There will be no impact if you decide not to participate in the research. The information below tells you about what is involved in the research, what you will be asked to do and about any benefit, risk, inconvenience or discomfort that you might experience.

Please ask as many questions as you like. If you have questions later, please contact the lead researcher.

Purpose and Outline of the Research Study
This research asks: Which traits of rural Nova Scotian farms impact food distribution? Food sovereignty promotes the rights of farmers and communities to make their own decisions about food and food production. Local food systems, which include farmers markets, community gardens, community supported agriculture (CSA) boxes and produce stalls, increase the ability of a community to address environmental sustainability issues. These issues can range from knowing where food is coming from, lowering transportation and fuel costs and creating a relationship between the producer and the consumer, which leads to a more resilient community. This could be particularly important for smaller rural communities in Nova Scotia. This study seeks to discover the connection between farm traits and distribution of food within the province, and how that may affect food sovereignty by surveying producers at four farmers markets in Halifax, Nova Scotia.
Who Can Take Part in the Research Study
You may participate in this study if you are at least 18 years of age and:
- operate a farm in Nova Scotia and
- sell goods at the Seaport Farmers Market, Alderney Landing Farmers' Market, Historic

Farmers Market and/or Halifax Forum Farmers Market
I am looking for a range of perspectives, backgrounds and experiences. You do not need to have any expertise in food sovereignty or distribution models to participate.

What You Will Be Asked to Do
This survey can be completed online or on paper at a time and/or place that is convenient for you. I will be administering and picking up paper copies of the survey from your farmers market stall. In the case of electronic surveys, those may be completed at your convenience. The survey will take 20 minutes of your time and may be done in more than one sitting, if necessary.

Possible Benefits, Risks and Discomforts
The risks associated with this study are minimal, and there are no known risks for participating in this research other than becoming bored or fatigued. However, you are able to take breaks at any point during the survey to reduce these risks. Because your participation is voluntary, you may stop at any time and/or decline to answer any questions without giving a reason. They survey may be done in the privacy of your own home to avoid discomfort regarding friends and/or neighbors knowing that you are participating in the survey.

Conversely, your participation may have some benefits. The survey is an opportunity to reflect on local food distribution patterns in Nova Scotia, and to contribute to the knowledge base. This knowledge may be used to spur public discussions and decision making about food sovereignty in Nova Scotia.

How your information will be protected:
Information provided during the course of the research will be kept private and only the research team will have access to the data. In some cases, authorized officials at the University such as the Research Ethics Board or the Scholarly Integrity Officer may also have access. Our findings will be discussed publicly and shared on Dalhousie's website. Only group results will be discussed so that no one will be identified. I will never, in any published material, connect a single response to any one person, farm or title. Individual responses will always be detachable from specific identifying information ("one farm said"). It is conceivable that someone who knows that you participated in the survey could pick out your responses, but I will make all the efforts described above to minimize the risk.

This means that ***you will not be identified in my reports*** by name, address, employer, or title. You will be given a pseudonym. I have an obligation to keep all research information private. I will use your pseudonym (not your name) in all written and computerized records so that the information I have about you contains no names. All your identifying information will be kept in a separate file, in a secure place. These electronic records will be kept secure in a password-protected, encrypted file on a Dalhousie University secure server, and destroyed in June 2018. The survey completed today will be analyzed and text files kept secure in a password-protected, encrypted file on a Dalhousie University secure server, and destroyed in September 2018.

If You Decide to Stop Participating
You are free to leave the study at any time. If you choose to stop participate before the survey is completed, all answers will be deleted and I will omit your participation from the analysis and report. If you wish to have your contributions removed from the analysis, you may request to do so until February 1, 2018, after which all data will be anonymized.

How to Obtain Results
Results can be obtained from interested participants by emailing me at Jodi.butler@dal.ca. You can also view the results by visiting Dalhousie's thesis repository (https://dalspace.library.dal.ca) in approximately four months.

Questions
I am happy to talk with you about any questions or concerns you may have about your participation in this research study. Please contact me at jodi.butler@dal.ca at any time with questions, comments, or concerns about the research study. I will also tell you if any new information comes up that could affect your decision to participate.

If you have any ethical concerns about your participation in this research, you may also contact Research Ethics, Dalhousie University at (902) 494-1462, or email: ethics@dal.ca.

In order to participate in the survey, please read and provide a response to the following statement:
I have read the explanation about this study. I have been given the opportunity to discuss it and my questions have been answered. I agree to take part in this study. I realize that my participation is voluntary and that I am free to leave the study at any time.

Yes, I will participate in this survey: ___
No, I do not wish to participate in this survey: ___

Signature: ____________________________________

Printed name: _________________________________

Date: ___________________

Appendix B: Survey

1. What does your farm produce? Please check all that apply.
   ☐ Poultry (including eggs)
   ☐ Beef
   ☐ Pork
   ☐ Dairy
   ☐ Fruit
   ☐ Vegetables
   ☐ Herbs
   ☐ Other (Please specify) ____

2. In which county is your farm located?
   ☐ Annapolis County
   ☐ Antigonish County
   ☐ Cape Breton County
   ☐ Colchester County
   ☐ Cumberland County
   ☐ Digby County
   ☐ Guysborough County
   ☐ Halifax County
   ☐ Hants County
   ☐ Inverness County
   ☐ Kings County
   ☐ Lunenburg County
   ☐ Pictou County
   ☐ Queens County
   ☐ Richmond County
   ☐ Shelburne County
   ☐ Victoria County
   ☐ Yarmouth County
3. Are you currently a decision maker for the farm? ☐ Yes ☐ No

4. Are your farm's products sold… (please check all that apply)
   ☐ Within your home county?
   ☐ Outside of your home county?
   ☐ Outside of Nova Scotia?
   ☐ Outside of the Atlantic Provinces (NS, NB, PEI, NL)?
   ☐ Outside of Canada?
   ☐ Outside of North America?

5. What is your age?
   ☐ 18 – 24
   ☐ 25 – 34
   ☐ 35 – 44
   ☐ 45 – 54
   ☐ 55 – 64

☐ 65 – 74
☐ 75 or older

6. What is the highest degree or level of school you have completed?
   ☐ Some high school, no diploma
   ☐ High School or equivalent
   ☐ Some college/university, no degree
   ☐ Trade/technical training
   ☐ Bachelors Degree
   ☐ Masters Degree
   ☐ Professional Degree
   ☐ Doctorate Degree

7. When, and why, did you start farming? For example, if your farm is a family operation, how many generations has it been in your family?

8. Has your farm undergone any significant changes over its history that you care to share?

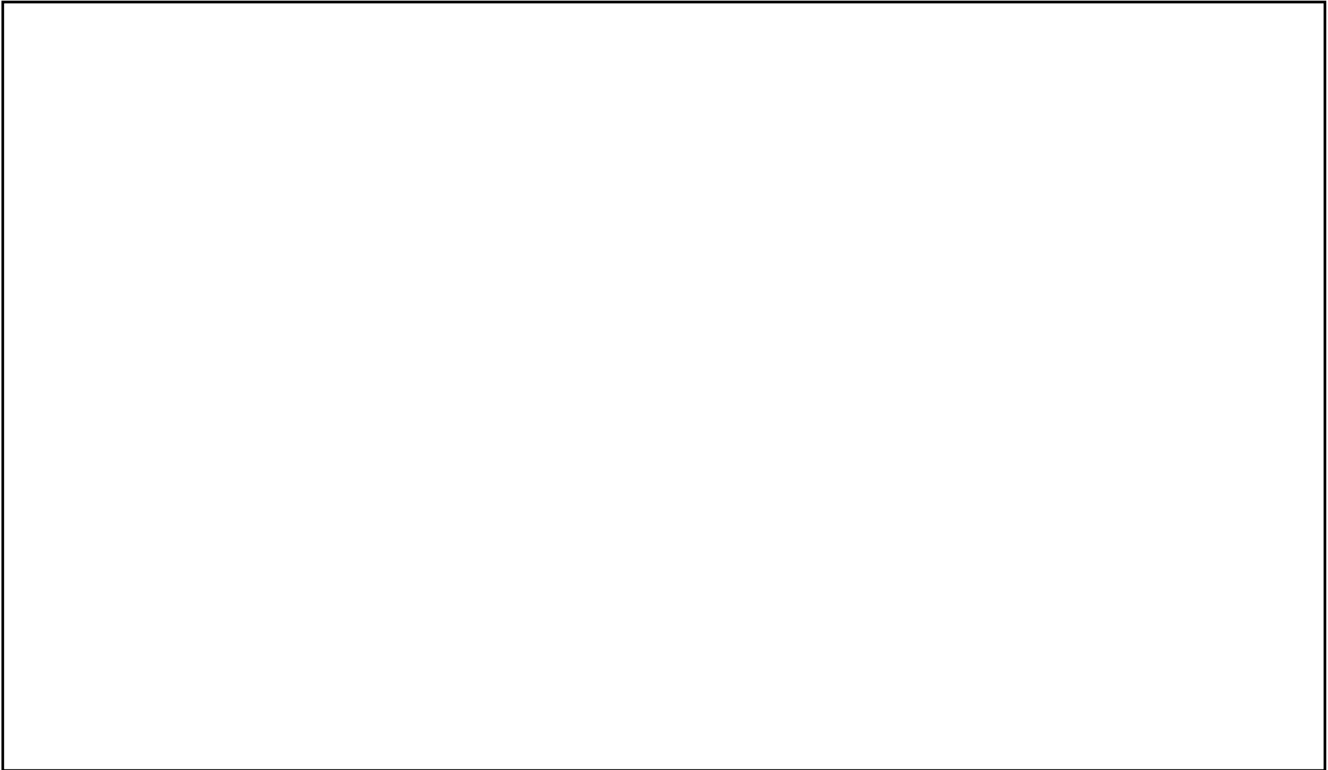
9. Do you try to reach any specific markets or demographics with your products? If so, which one(s)? Why?

10. At which farmers markets in Nova Scotia are your farm's products sold?

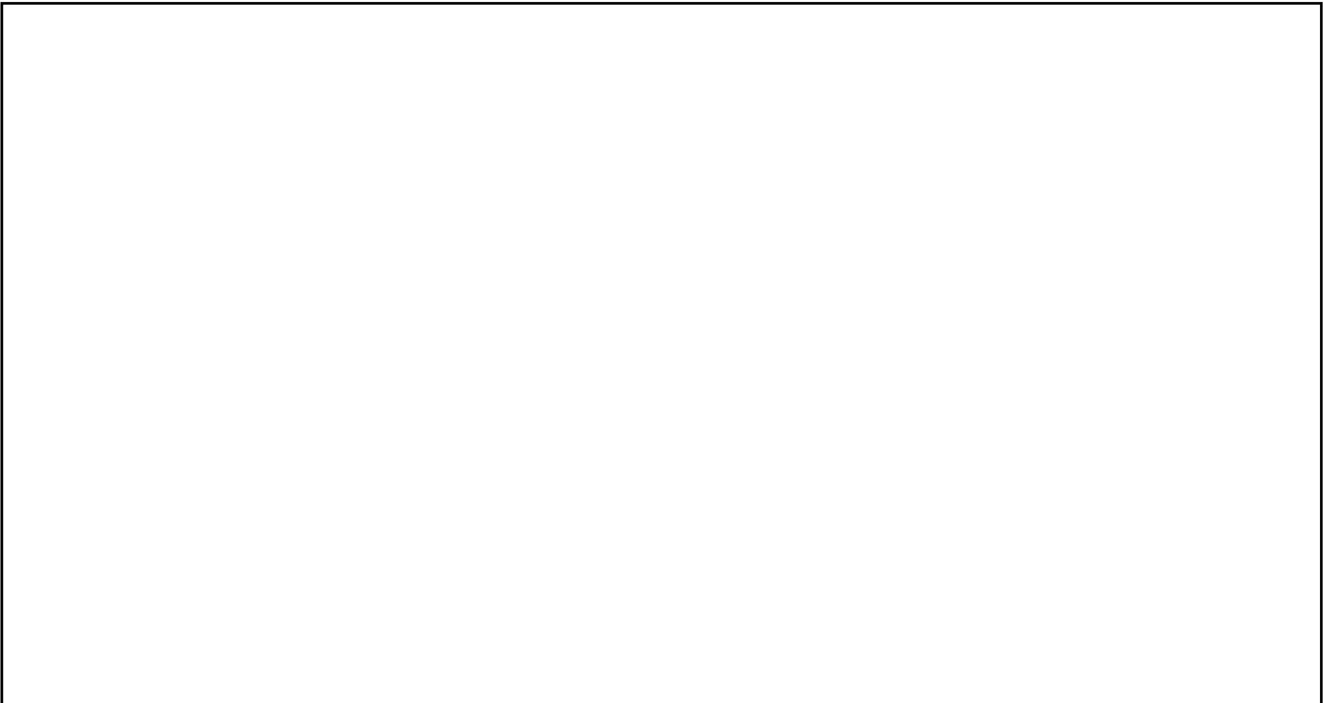
11. Aside from farmers markets, do you sell your products anywhere else?

☐ Farmers Markets exclusively
☐ Community Supported Agriculture (CSA)
☐ Produce Stands (roadside, e.g.)
☐ Supermarkets
☐ Other (please list)

12. What are the top two things — positive or negative — you would tell someone who asked you about farming in Nova Scotia?



13. What factors go into deciding what products you grow and sell?



14. Do you believe people in Nova Scotia currently have adequate access to fresh, locally-produced food? Why or why not? And how do you feel about it?

15. What does the term "environmental sustainability" mean to you?

16. Environmental sustainability is important to the operation of my business

☐	☐	☐	☐	☐
Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree

17. If yes, do you implement any environmental sustainability practices on your farm? Please explain.

18. Which of the following, if any, have influenced your business?

☐ Buy Local Movement
☐ Organic Produce
☐ Free Range Livestock
☐ Hormone and/or anti-biotic free livestock
☐ Cruelty-Free Practices
☐ Vegetarian and/or Vegan lifestyle
☐ Permaculture
☐ None
☐ Other

19. It is important to me to see my farm's profits increase year over year

☐	☐	☐	☐	☐
Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree

20. It is important to me that I am continually challenged in my work

☐	☐	☐	☐	☐
Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree

21. Expanding my business is a high priority

☐	☐	☐	☐	☐
Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree

22. Continuing farming traditions are important to me

☐	☐	☐	☐	☐
Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree

23. It is important to me that I enjoy my work

☐	☐	☐	☐	☐
Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree

Appendix C: List of Codes Used

A Priori Codes

- Education
- Family
- History
- Local food
- Environment
- Resilience
- Accessible
- Sustainable
- Nutrition
- Health
- Organic
- Permaculture
- Free Range
- Cruelty-free
- Vegan/Vegetarian
- Work is a challenge
- Enjoyment in work

Emergent Codes

- Food for the people
- Efficiency
- Income and economic importance
- Consumer demand
- Alternative fuel sources
- Soil health
- Water management
- Protection from monocultures
- Chemical-free