A COMPARATIVE ANALYSIS OF FARM-TO-SCHOOL ACTIVITY IN NOVA SCOTIA AND MAINE: AN INSTITUTIONAL PERSPECTIVE

by

Chloe Kennedy

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The undersigned hereby certify that they have read and recommend to the Faculty of Graduate Studies for acceptance a thesis entitled "A COMPARATIVE ANALYSIS OF FARM-TO-SCHOOL ACTIVITY IN NOVA SCOTIA AND MAINE: AN INSTITUTIONAL PERSPECTIVE" by Chloe Kennedy in partial fulfillment of the requirements for the degree of Master of Environmental Studies.

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Supervisor: _____

Readers: _____

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Signature of Author

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Abstract

Focusing on a rural community in Colchester County, Nova Scotia, this research examines the Atlantic Canadian context for farm-to-school programs, gauging interest and attitudes and examining current barriers which prevent more locally grown food from being served in the school cafeteria. A major component of this research is a comparative case study using a successful American farm-to-school program in Hancock County, Maine. By way of comparative study, this research examines how stronger farm-school partnerships can be developed in Atlantic Canada. Results in Nova Scotia indicate financial and structural barriers, as well as a number of community assets, including a strong belief on the part of relevant stakeholders that farm-to-school programs have the potential to increase student health and foster economic well being for farmers. This paper puts forth recommendations and strategies for expanding farm-to-school programs in Nova Scotia based on results from the comparative case study.

List of Abbreviations Used

ABCD	Asset Based Community Development
ACORN	Atlantic Canadian Organic Regional Network
CCRSB	Chignecto Central Regional School Board
CEHHA	Colchester East Hants Health Authority
CFSC	Community Food Security Coalition
CLASS	Children's Lifestyle and School-performance Study
DOE	Department of Education (Nova Scotia Provincial Government)
FEED	Food Education Every Day
FNPNSPS	Food and Nutrition Policy for Nova Scotia's Public Schools
FSD	Food Service Director
HPP	Health Promotion and Protection (Nova Scotia Provincial Government)
HPS	Health Promoting Schools
IP	Interview Participant
LAUSD	Los Angeles Unified School District
NGO	Non Governmental Organization
NSDA	Nova Scotia Department of Agriculture
SARE	Sustainable Agriculture Research and Education
SSHREB	Social Science and Humanities Research Ethics Board
USDA	United States Department of Agriculture

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Chapter 1: Introduction

The health, environmental and social consequences of the globalized, industrial food systems first became evident more than twenty years ago (Auburn, 1988; Lappe, 1990; Kneen, 1993). Since then, these problems with our dominant food system have become increasingly self evident, with popular books such as *The Omnivore's Dilemma* (Pollan, 2009), and films such as *Food Inc.* (2008) and *Supersize Me* (2004), bringing them into public consciousness and rendering them axiomatic. A number of innovative programs, policies, research and initiatives have sought to rebuild smaller scale, regional food systems (Lehmer *et al*., 2006; Wright, 2006). Many seek to strengthen rural communities, provide fresh whole foods and/or reduce the environmental impacts associated with larger scale agriculture.

Farm-to-school programs emerged within the context of these broader initiatives, seeking to provide school-aged children with fresh, local foods and nutritional and agricultural education (Kalb, 2007; Izumi, 2006). One of the first formalised Farm-to-School programs in the United States was founded in the early 1990's by a United States Department of Agriculture (USDA) consultant in Florida. The Farm-to-School program was initially designed to support local farmers by establishing public schools as a potential market for certain crops (Vallianatos, *et al*., 2004). The concept and enthusiasm soon spread to other states, as school boards, farmers and local governments became interested in the potential benefits of providing school-age children with locally grown food. By 2002, more than 250 advocates of the farm-to-school program gathered at the first Farm-to-Cafeteria conference, which was co-hosted by the Community Food Security Coalition (CFSC) and the Center for Food Justice (CFJ). As of 2011, an estimated 2,257 programs exist in 47 states throughout the US[1].

[1] Statistics gathered by the American National Farm-to-School Network: http://www.farmtoschool.org/

Farm-to-school programs emerged as a response to two interrelated problems affecting the United States, albeit in varying degrees: 1) generally poor nutrition and consequent increases in diet-related diseases among school children; and, 2) the decline in rural communities and the corporatization of the food industry, which threatens mid- and small-scale farmers (Kalb *et al.,* 2004; Montgomery, 2006). In recent years, numerous research reports have highlighted the proven benefits of farm-to-school programs for both school-aged children and local agricultural communities (Vallianatos *et al.*, 2004; Keeley *et al.,* 2005; Joshi *et al.*, 2006).

1.1 Farm-to-School in Canada

Despite the publicity and government support that farm-to-school programs are receiving in both the United States and parts of Europe (Kalb, 2007), Canada currently has a very limited number of farm-to-school initiatives, with most taking place in central and western parts of the country (Montgomery, 2006). In contrast to the United States[2], the Canadian government does not provide federally funded lunch or nutrition programs for its public schools. Therefore, the implementation costs of food service and child nutrition programs fall to municipal and provincial governments. Sourcing local food for lunch and snack programs does not tend to be a high priority for most provincial nutrition programs, as many are chronically under-funded and necessarily seek out the most cost effective options (Montgomery, 2006; Murton, 2006).

1.2 Farm-to-School in Nova Scotia

In Nova Scotia, there are few initiatives that seek to provide public schools with locally produced foods. The most formalized among them is a recent joint initiative between the provincial department of Education and the Community Health Board in the Annapolis Valley. Entitled "Strive for Five at School!", this program seeks to promote the use of seasonal items in

[2] The US Food and Nutrition Service administers the National School Lunch Program at the federal level. Public schools receive federal reimbursement funds to help subsidize nutritious school meals for children of low income families.

school meals. The most notable feature of the program is a guide outlining monthly menus that incorporate local foods[3]. Released in March, 2010, this guide is intended to be a resource for schools across the province. Evidently, a province-wide focus on local food procurement in Nova Scotia's public schools is in its beginning stages. The government and interested stakeholders may now have increased opportunity to take further action, as recent policies and initiatives have been created which support and promote both student nutrition and local agriculture.

1.2.1 Healthy Eating in Nova Scotia's Public Schools

In 2006, the Health Promoting Schools (HPS) initiative was implemented in all school boards across the province. HPS promotes healthy snacks, taste testing and physical activity within the province's public schools. This initiative began in the Annapolis Valley in response to a St. Francis Xavier University public school health research study entitled Children's Lifestyle and School-performance Study (CLASS). This research provided dire results. It was found that Nova Scotia's school children on average consume only 3.3 servings of fruits and vegetables per day (Campagna *et al.,* 2005), which is much less than the five daily servings of fruits and vegetables recommended by Canada's Food Guide. Only four percent of surveyed students had an adequate intake of daily fibre (Campagna *et al.*, 2005). The results of this research had major impacts on the development of school health policy in Nova Scotia, furthering the province wide implementation of the HPS initiative. Each of the seven school boards in the province now has an HPS component in their health related programs and policies.

Since the release of the Food and Nutrition Policy for Nova Scotia Schools (FNPNSS) in 2006, there has been a heightened focus on promoting healthy student food choices and

[3] See "Strive for Five at School! A Guide to Promoting Fruits and Vegetables": http://nshps.ca/sites/default/files/root/files/S45%20Resource%20Guide%20Eng-Web.pdf

eliminating food products that are of minimum nutritive value, such as potato chips, deep fried foods, candy bars and carbonated beverages. The FNPNSS was phased into Nova Scotia's public schools in June 2009, at which point all food and beverages of minimal nutritive value, including potato chips, candy bars and deep fried goods, were gradually removed from school premises as per the policy directives (Nova Scotia Department of Education, 2006; Nova Scotia Department of Health Promotion and Protection, 2006). The development and implementation of this policy reflects a keen interest in, and commitment to, student health.

There has been much recent interest and policy development concerning healthy food choices for Nova Scotia's students. Aside from the abovementioned Strive for Five at School! program, however, there is very little advocacy and even less research around the issue of *where* such food comes from, or should come from in the future. To date, M. Murton's (2006) report entitled "Food and Nutrition in Nova Scotia Schools" is one of the few available studies that examine the barriers—such as lack of funds and necessary infrastructure—which prevent public schools in Nova Scotia from purchasing locally produced food (Murton, 2006).

The benefits of supplying public schools with local food are clearly acknowledged in the Food and Nutrition Policy for Nova Scotia's Public Schools[4]. However, the policy does not discuss potential local suppliers, or any opportunities for overcoming the obstacles that currently prevent greater amounts of locally produced food from being served in Nova Scotia's schools.

1.2.2 Agriculture in Nova Scotia

It is an opportune time for Nova Scotia's public institutions to be developing local food procurement policies, as the province's agricultural sector currently faces many challenges. The economic viability of small-scale farming has been decreasing steadily in recent years, as net

[4] One of the five guidelines in the FNPNSS states that "[b]uying food that is grown and produced within the province supports Nova Scotia agriculture and business and means that more money remains in the community. Locally grown, fresh food is often more nutritious if it is used shortly after harvest" (FNPNSS, 2006, pg 10).

farm income has been declining. In 2001, GPI*Atlantic*[5] released a report that examined economic trends in the agricultural sector and warned of the increasing difficulty for small-scale farmers to make ends meet. At the time, farm net income in Nova Scotia had dropped 91%, and average farm debt had increased by 146% since 1971 (Statistics Canada, 2001).

Total net farm income of between $40 and 50 million (CAD) in the late 1990s translated into an average per farm net income of only $10,000 to 12,500 per year, as there were roughly 4,000 farms in Nova Scotia (Statistics, 2001). Although total gross farm cash receipts had risen 12% between 1971 and 1999, all other indicators of economic viability—including expense to income ratio, return on investment and total debt to net farm income ratio—showed negative trends (GPI*Atlantic,* 2001). The authors thus concluded that if these trends continued at their current rates, a virtual demise would result in several agricultural sectors, including apples, vegetables, beef and hogs, in Nova Scotia (GPI*Atlantic,* 2001).

Two follow-up reports were released by *GPIAtlantic* in 2008. These reports state that small farms in Nova Scotia were in an even worse economic situation in 2008 than they had been in 2001. In 2008, Nova Scotia had 3,795 remaining farms, out of the nearly 50,000 that existed 85 years ago. There are 3,600 full time and 1,100 part time jobs in agriculture in Nova Scotia (Statistics Canada, 2008), which is the lowest ever recorded number of jobs in the agricultural sector and represents a 40% drop since 1978 (Statistics Canada, 2008). According to *GPIAtlantic,* these trends clearly indicate that small-scale farming is in a state of serious crisis (2008a).

In an effort to promote Nova Scotia's farm economic viability and raise public awareness about the importance of supporting them, the provincial government has recently created an

[5] GPI*Atlantic* is a non-profit research and education organization based out of Glen Haven, Nova Scotia, which measures and researches a number of Genuine Progress Indicators, such as social capitol, real net income and poverty, within the province.

initiative called “Select Nova Scotia”. According to the official Select Nova Scotia website (www.selectnovascotia.ca), this project seeks to increase awareness and knowledge surrounding locally-produced food, to help the agricultural industry with new marketing opportunities and to promote the benefits of buying Nova Scotia products. The dual goal of promoting both student health and local agriculture in Nova Scotia indicates openness on the part of government and interested stakeholders to build better relationships between public schools and local farms.

1.3 Research Purpose

The purpose of this research is to examine the current barriers and opportunities that face Nova Scotia’s public schools in their efforts to procure locally-produced food. A comparative case study of two elementary schools engaged in varying levels of farm-to-school activity is used as a lens through which to examine these barriers and opportunities. The first school is located in Colchester County, Nova Scotia in the town of Tatamagouche (Figure 1). Approximately 600 kilometres away by land, the second school is located in Hancock County, Maine in the town of North East Harbour. The elementary school in Hancock County, Maine has a renowned farm-to-school program. Featured on a January 2009 episode of the *Martha Stewart Show*, this program not only provides fresh, local foods to its students, but also nutritional and agricultural education by way of a school garden and farm visits. With a comparable climate and growing season to northern Nova Scotia, the elementary school in Hancock County has seemingly overcome many of the common barriers and challenges which often prevent locally-produced food from being procured. This comparative case study analyses the farm-to-school strategies employed in Hancock County, Maine, and discusses them with reference to the current barriers and opportunities in Colchester County, Nova Scotia.

Figure1. Maine and Nova Scotia Study Locations

1.4 Study Design

Using comparative studies is commonplace in farm-to-school research and feasibility studies (Adair, 2008; Bagdonis *et al*., 2008; Carllson and Williams, 2008). Indeed, scholars point to the value of gaining strategic knowledge from real world cases of successful farm-to-school programs, using explanations of successful strategies to gain insight into how common barriers can be addressed (Montgomery, 2006; Bagdonis *et al.*, 2008). The design of this study is informed by the methodology employed by Bagdonis *et al.* (2008) in their comparative case study of farm-to-school activity in urban and rural areas of Pennsylvania. Using site visits, participant observation, semi-structured interviews with farm-to-school stakeholders, and literature and policy review, Bagdonis *et al.* aimed to compare and contrast the role of primary stakeholders and the common challenges in the development of farm-to-school programs. Similarly, the research methods used in this comparative case study include a literature and

policy review, semi-structured interviews with relevant stakeholders and site visits to each location.

1.5 Research Questions

The case study research and data collection was guided by three primary questions:

- What are the barriers and opportunities that face the Colchester County elementary school in its efforts to procure greater amounts of locally produced food?
- What were the barriers and opportunities that faced the Hancock County elementary school in its efforts to institute a farm-to-school program? What resources (financial, infrastructure, human, knowledge based) were required for the Hancock County Farm-to-School program to be successful? What is the role of the key stakeholders in facilitating the program?
- Does the Hancock County Farm-to-School program provide valuable insight for how to overcome the challenges and take advantage of opportunities for procuring greater amounts of locally produced food in the Colchester County school? If so, how?

These research questions fulfill the purpose of the study and were developed from the preliminary research and literature review conducted during the winter of 2009.

1.6 Organization of the Thesis

In the second chapter of this thesis, the context and methodological approach for the comparative case study is further explained and discussed broadly with reference to the relevant literature. External validity in case study research is discussed, taking into account the relevant critiques of case studies and their ability to make valid generalizations from small sample sizes.

The pre-study design consultation process is described, taking into account relevant experience gained working for the Nova Scotia Department of Agriculture and conducting

informal meetings with industry experts. The comparative case study design for this research project is then described with reference to the literature. This includes a detailed description of data collection methods and a demographic profile of each study site, including the history, culture and income levels. Finally, data analysis methods used to generate final results are explained and discussed.

In the third chapter, the scholarly literature and the relevant "grey literature", including government reports and various research reports by non-government organizations (NGO), are discussed with reference to the objectives of this research project. The relevant government policies, including Nova Scotia's provincial policies and American federal and state policies, are also analysed within the context of the research.

The fourth chapter, entitled "Building Rural Health and Supporting Small Scale Agriculture", presents and analyses the results of the comparative case study and the literature and policy review. It begins with a discussion of the differences in school regulatory frameworks in Maine and Nova Scotia, and the effects that these differences have upon the barriers and opportunities faced in each location. A subsequent assessment of the similarities in perceived benefits of farm-to-school in Nova Scotia and Maine sheds light on the potential role of interested stakeholders in each location. The barriers found in Colchester County and the assets that could help address these barriers are then discussed and analysed. To further explore the opportunities for the Colchester County school, the successful farm-to-school program characteristics in Hancock County, Maine are then described. Based on the discussion of Colchester County's assets and the successful strategies used in Hancock County, the opportunities for procuring greater amounts of local food in the elementary school are outlined.

In the final chapter, the results are discussed with reference to the existing literature, drawing out relevant comparisons and contrasts. As was mentioned above, this comparative case study is used as a lens through which to examine the common challenges and opportunities facing schools looking to procure greater amounts of locally produced foods. In this way, the results and analysis from this study build upon the existing farm-to-school literature, while at the same time providing an original study of farm-to-school activity in Atlantic Canada and Maine.

Chapter 2: Research Methods

2.1 Introduction

A comparative case study using a mixed method approach was the primary research strategy for this project. Data collection methods for the comparative case study included in-person and telephone interviews, site visits, which included field notes and participant observation, an extensive literature and policy review, and expert consultation. The case study as a research strategy as well as data collection and analysis methods shall be discussed in the context of this research project.

In social science research, there are a number of data collection methods available to the researcher. The case study was selected as a research strategy based on its suitability to the focus of this study and the nature of the research questions. Case studies focus upon a particular event or phenomenon of interest in its real-life context to detect the effects on a given community or population (Yin, 1981). The case study design allows for the researcher to probe "how" and "why" questions and examine the details of processes (Gray, 2004).

According to Stoecker (1991), case studies aim to provide a holistic explanation of a certain historical period or a particular social unit. This approach is also suitable for those researching in a diverse range of disciplinary fields (Rose, 1991). Farm-to-school programs defy classification in any one discipline, as they address issues of health and nutrition, institutional reform and local food marketing. Additionally, comparative case studies are broad in nature, encompassing a multitude of variables and information across two or more study sites. Accordingly, the holistic and broad nature of comparative case studies accommodates the interdisciplinarity of farm-to-school programs.

Yin (1994) explains that the evidence from multiple case studies is often considered more compelling, as the researcher has the ability to make inferences compared with other cases as opposed to relying on one case alone. Using comparative studies is commonplace in farm-to-school research and feasibility studies (Bagdonis *et al.*, 2008; Carllson and Williams, 2008). Indeed, scholars point to the value of gaining strategic knowledge from real world cases of successful farm-to-school programs, using explanations of successful strategies to gain insight into how common barriers can be addressed (Montgomery, 2006). *Explanatory* case studies, as opposed to *exploratory* case studies, are those best suited for causal studies (Yin, 1993). An explanatory comparative case study design was thus selected.

Unlike random or other statistical sampling techniques, which aim to gain knowledge about a cross section of a given population, case studies are chosen because particular social phenomena are being investigated. In this study, farm-to-school programs are the focus of inquiry, thus cases were chosen selectively based on the existence of farm-to-school activity, or lack thereof. Eisenhardt (1989) refers to this as "theoretical sampling", as opposed to statistical sampling, because cases are selected based on their ability to extend emergent theory surrounding a given social phenomenon (Eisenhardt, 1989).

As opposed to social science research that makes statistical generalizations about a given population, the aim of case study research is to achieve analytic generalization about a given social phenomenon. Analytic generalizations seek to build upon and extend theory related to the social phenomenon in question (Kolberg, 2009). In other words, instead of *generalizing* the results to the outside world, one *relates* the results to existing research and theory in the field. According to Hamel (1993), case studies represent and reflect upon the larger theories they are

guided by. In other words, the case study both builds upon and is informed by the existing theory put forth by scholars in a given field.

Many critiques of external validity in case study research stem from a misunderstanding of the differences between these two (i.e., statistical and analytical) types of generalizations (Yin, 1981). Critics are correct that case studies, due to their limited sample sizes, are not able to make overarching statements about certain populations. However, they are able to investigate the causal relationships and effects of a given social phenomena or event and to thereby contribute to the construction of theory (Yin, 1981). Accordingly, the aim of this case study research is not to make statistical generalizations about the educational or agricultural populations in Maine and Nova Scotia, the two case study sites. Rather, the aim is to make analytical generalizations and contribute to the growing body of knowledge surrounding the barriers, opportunities and perceptions of farm-to-school programs in North America. Indeed, this research uses the two study sites as lenses through which to compare the common challenges faced by farm-to-school stakeholders.

2.2 Study Design Consultation

Prior to the design and planning of this comparative case study, I consulted with field experts in the school board, government and academia. In December 2008, I travelled to the Annapolis Valley to attend the Nova Scotia School Food and Gardens Session, where future directions were discussed for school food policy. This event was organized by the Annapolis Valley Health Promoting Schools (AVHPS) and included presentations and discussions surrounding how to incorporate greater amounts of fresh, local foods into Nova Scotia's public school cafeterias. During this event, I met informally with representatives from industry, school boards, the Nova Scotia Department of Agriculture and a school nutritionist from the Nova

Scotia Department of Health Promotion and Protection. These consultations with field experts allowed me to narrow my research focus on current issues in the Nova Scotian school food context, specifically to farm-to-school issues. Through helping to identify areas of current concern and relevance in Nova Scotia, these early expert consultations also aided with the development of pertinent interview questions during the design phase of the study.

The Nova Scotia Department of Agriculture recently completed an internal report examining the barriers and opportunities in the current food supply chain for local growers to access institutional markets, including hospitals, correctional facilities, public schools and continuing care facilities. One of the goals of the report was to establish a database of individuals and institutions interested in procuring more local food. From May 2009 to February 2010, I was employed part time with the Nova Scotia Department of Agriculture as a research assistant on this report, conducting field interviews, transcribing interviews, managing quantitative data related to institutional food procurement and compiling an extensive literature review regarding local food procurement within public institutions throughout the rest of Canada. Working in this capacity, I established contacts with relevant stakeholders within the Chignecto Central Regional School Board (CCRSB), the agricultural sector, businesses within the food distribution networks and government, and gained valuable insight into the "on the ground" workings of the current food system in Nova Scotia. The knowledge gained during my employment with the Department of Agriculture was central to the design of the comparative case study, as it both built my personal contacts with relevant field experts and stakeholders and allowed me to better conceptualize the real world context of my research.

2.3 Comparative Case Study: Hancock County, Maine and Colchester County, Nova Scotia

This research seeks to address the current barriers and opportunities for increasing the levels of locally produced food in Nova Scotia's public schools. A comparative case study of two elementary schools is used as a lens to examine these barriers and opportunities; this research seeks to uncover the strategies employed by farm-to-school stakeholders in Hancock County's successful farm-to-school program and the potential for these strategies to address the barriers encountered in Colchester County.

Study sites were chosen following the negative case comparison approach (Kolberg, 2009) which attempts to isolate the independent variables associated with divergent outcomes in similar locations. Case study sites must therefore be matched on as many explanatory variables as possible to minimize the variables which can be associated with divergent outcomes (Kolberg, 2009). Accordingly, sites were chosen based on similarities in demographics, geography and proximity to one another. Although the state of Maine has a much higher population and land mass than the province of Nova Scotia, Canada, the two elementary schools are located in counties which have very similar population densities, geography and culture, but divergent school policy contexts. The influence of policy context is also an important consideration in an institutional perspective of farm-to-school programs and will be discussed below with reference to the study sites.

As Abadi *et al.* (2007) note, effective comparative case studies are most relevant when comparing affected units with those unaffected by the event or social phenomenon in question. Therefore, comparative case studies are only feasible when some units are exposed and others are not, or when their levels of exposure to a given event or social phenomenon differ greatly

(Adabi, 2007). Study sites were thus also chosen based on their differing levels of exposure to farm-to-school activity.

2.3.1 Demographic Profile

The Nova Scotia study site is located in Colchester County, which is on the North Shore of Nova Scotia and has a total population of 50,023 (Statistics Canada, 2006). With a total land mass of 3,627.69 square kilometres, Colchester County's population density is 13/km2 (Statistics Canada, 2006). With an equally low population density of only 13.8/km2 (U.S Census Bureau, 2005), Hancock County, Maine, is located on the north eastern shore of the state. Hancock County's total population is 51,791 with a total land mass of 4,113km2 (U.S Census Bureau, 2005). Because both counties have low population densities, the schools tend to be relatively small. The two elementary schools used for this case study have very similar student bodies, with the Hancock County School having 160 students and the Colchester County School having 231.

2.3.2 History, Culture and Climate

Each county has rural populations and a strong history of agriculture. Stakeholders in each location expressed a strong sense of community and, being traditionally rural farming populations, a deep respect for the role of agriculture in the community. The two elementary schools used for this case study are located in small municipalities which lie in coastal areas and have comparable climates and growing seasons[6]. Both communities are located in the Northern Appalachian/Acadian Ecoregion of North America. Given the stable and temperate coastal climate in each region, with warm summers and lengthy autumns, agriculture has traditionally been an economic staple and has thus affected the cultures and traditions in each region (Day, 1963; Winson, 1985). Both areas were predominantly settled by citizens of the British Isles.

[6] Northeast Harbour, Hancock County, Maine: Latitude: 44.738468 / Longitude: -68.401009. Tatamagouche, Colchester County, Nova Scotia: Latitude 45.4254775 / -63.3275062

2.3.3 Income and Wealth

Aside from the similarities in history and culture in each area, the income levels in Hancock and Colchester County are relatively comparable. Indeed, the median family income in Hancock County is approximately $59,428 USD (US Census Bureau, 2008), while the median family income in Colchester County is $55,449 CAD (Statistics Canada, 2006). As will be discussed below, despite the strong similarities in family income levels, Hancock County has a considerably higher level of private wealth, as it has traditionally been a popular tourist destination and summer home for residents of the Mid West and for wealthy families, including the Rockefeller family and Martha Stewart.

These similarities in population density, climate and socio-economic status increase the likelihood that each community faces similar barriers when engaging in farm-to-school activity. Therefore, the lessons and approaches used by the school in North Eastern Maine present potentially successful models and opportunities to the interested stakeholders in the Nova Scotian context.

2.4 Stakeholder Interviews

In each location, semi-structured interviews were conducted with relevant stakeholders from the schools, schools boards, NGO's and government. Interview participants were selected using a purposive sampling method based on their roles within each case study site location. This type of sampling starts with a purpose in mind. Accordingly, the sample is selected to include people of interest and exclude those who do not suit the purpose (Kemper *et al*., 2003). As opposed to probability sampling, which is typically used in quantitative studies, purposive sampling is commonly used in qualitative studies which seek to investigate a given social phenomenon (Kemper *et al*., 2003). Because this study aimed to uncover the barriers and

opportunities for school staff and farms directly, the sample size in each location was necessarily small. As shown in an existing farm-to-school comparative case study (Bagdonis *et al*., 2008), although farm-to-school programs are often envisioned as community efforts, direct stakeholders within the school setting, or internal 'champions', are often those who inspire, initiate and direct farm-to-school programs. In total, 14 stakeholders were interviewed, with nine interviews in Colchester County, Nova Scotia and five in Hancock County, Maine (Table 1).

Table 1: Interview Participants by Location

Colchester County, Nova Scotia (NS)	**Hancock County, Maine (ME)**
Nova Scotia Department of Agriculture Business Development and Economics (IP 6, 2010)	Healthy Acadia (NGO) Director (IP 1, 2010)
Nova Scotia Department of Agriculture Industry Development and Business Services (IP 7, 2010)	Healthy Acadia Farm to School Coordinator (IP 2, 2010)
Chignecto Central Regional School Board (CCRSB) Breakfast Program Manager (IP 8, 2010)	Elementary School Principal (IP 3, 2010)
CCRSB School Improvement and Leadership Development Coordinator (IP 9, 2010)	Elementary School Food Service Director (IP 4, 2010)
CCRSB Community Education and Partnerships (IP 10, 2010)	Augusta School Department School Nutritionist (IP 5, 2010)
Elementary School Cobequid Schools Catering Society Manager (IP 11, 2010)	
Elementary School Principal (IP 12, 2010)	
Farm Liaison (IP 13, 2010)	
Nova Scotia Health Promoting Schools Program Manager (IP 14, 2010)	

Note: The number in brackets indicates the Interview Participant (IP) number.

The majority of participants were contacted initially by telephone. Recruitment scripts (see Appendices A, B, C, D) were used to relay information to potential interview participants about the study and the commitment involved. Contact information for all farm-to-school participants from Hancock County, Maine is located in the National Farm-to-School website and on the Hancock County farm-to-school directory. Contact information for some participants was gained from participants who had been contacted earlier. Contact information for participants in Nova Scotia was gained from the CCRSB website and from contacts within government.

All participants who were contacted participated in a semi-structured except for farm liaison in Hancock County, Maine. A telephone interview was scheduled for April 13th, 2010 at 11:00am (ET). However, the farm liaison did not answer the telephone when contacted on the arranged day. Several follow-up telephone calls were made, but no response was received. It would have been beneficial to gain the first-hand perspective of the farm liaison involved. However, because this study aims to gauge the perspective of *institutional* farm-to-school stakeholders, the interview with the farm liaison was not an essential component of the data set.

Depending on interviewee availability and location, interviews took place either in person or over the telephone. Interviews lasted between half an hour and an hour. Each interviewee was asked to read and sign a consent form (see Appendix E,F), requesting their consent to participate in the study, to be audio recorded and to allow the use of direct quotations within the body of the final written thesis. They were also informed that they could withdraw from the study at any point. For the in-person interviews, consent forms were signed prior to the interview. For telephone interviews, participants faxed their consent forms prior to the transcription of the interview data. No interviewees refused to give consent on these sections or withdrew from the interviews.

Interviews were semi-structured and followed interview guides. These were developed based on the knowledge gained during government field work in 2009-2010 and from literature and policy reviews which addressed pertinent topics in Maine and Nova Scotia, and which covered the common characteristics of farm-to-school programs in the existing scholarly literature. The specific questions varied according to the location of the participants, as each was asked to describe his/her institutional context and policy perspective. Interviewees were asked to identify themes and topics related to the following four subject areas:

1. barriers (infrastructure, budget, human resources) which schools face in providing greater amounts of locally produced food;
2. opportunities and strategies to increase the amount of locally sourced school food;
3. benefits of farm-to-school programming for children, farmers and wider community; and,
4. potential drawbacks of farm-to-school activity in their respective regions.

The method of semi-structured interviews allows for the exploration of emergent issues and natural segue ways during the interview process (Bryman and Teevan, 2005). Notes were taken during the interviews themselves, marking points of interest and areas for further investigation. I transcribed all of the interviews using Express Scribe v 5.06, a voice editing software. As per the Social Science and Humanities Research Ethics Board (SSHREB) policy, all data will be kept at the university for five years and then destroyed.

2.5 Literature and Policy Review

An extensive literature and policy review was conducted for this study. It provides a deeper understanding of the relevant issues relating to this research project, such that the final

recommendations are supported by secondary data. Further, this literature and policy review provided the necessary background information for creating effective interview questions.

The reviewed literature includes journal articles as well as "grey" literature. Scholarly journal articles were found using online database searches of Academic Search Premier, Web of Science, PubMed, GreenFile, OAIster and JSTOR, and using the key words "institutional marketing", "farm-to-school", "local food procurement" and "agricultural law/policy". Journal articles were also acquired from liaisons of Nova Scotia based Non-Governmental Organizations, including the Nova Scotia Food Security Network and the Ecology Action Center.

Grey literature in this case refers to government policies, research reports and working papers from research groups, committees and other non-governmental organizations. Grey literature was retrieved from government websites, non-governmental organization websites and from Google Scholar using the key words "farm-to-school", "institutional marketing", "local food procurement policy" and "Nova Scotia agricultural law and policy".

Themes and topics explored in the literature and policy review include: the obstacles which currently prevent the implementation of local food procurement policies in Nova Scotia and in other Canadian provinces; school food procurement policies in Nova Scotia; sustainable food procurement policies; institutional marketing; direct marketing; farm-to-school programs in the United States and Canada; and agricultural funding and development policies. This literature and policy review provided a solid knowledge base upon which to investigate the themes and topics relevant to this research project.

2.6 Data Analysis

In case study research, it is commonplace to mix data analysis methodologies when identifying themes and patterns within qualitative data (Yin, 1994). The primary data analysis methodologies used for this study are elements of thematic analysis and conversation analysis. Methodologies were used to systematically uncover the conceptual linkages between various topics within the data. Qualitative software (Nvivo) was used to undertake data analysis and organize data into relevant themes and topics.

A methodology from thematic analysis that was used in this study is repetition or "data distillation" (Bernard and Ryan, 2010), where word counts are undertaken to identify topics, as well as to discover how often participants associate two concepts. This is referred to as "word co-occurance" (Bernard and Ryan, 2010). Another methodology used to identify relevant themes and topics is the examination of metaphors and analogies (Bernard and Ryan, 2010), wherein the researcher unpacks the themes/topics inherent in metaphors and colloquialisms. To identify relevant themes and topics a methodology called "questioning the data" was used (Strauss *et al*., 1990), wherein synonyms are created for various recurrent key words. This methodology helps to tease out themes raised by the participants.

Using these key methodologies, free codes were attached to interview data and subsequently placed in relational frameworks, or "tree nodes" (see Appendix H) , which describe relevant themes from the interview data. Tree nodes include: (1) Perceived benefits of farm-to-school activity; (2) Barriers faced by the Colchester County school, with reference to the Maine farm-to-school program; (3) Characteristics of the farm-to-school program in the Maine community; and (4) Opportunities for the Colchester County school, with reference to the identified community based assets and program characteristics in Hancock County.

Chapter 3: Literature and Policy Review

3.1 Farm-to-School in the Literature

Scholarly research on farm-to-school programs brings together two bodies of literature on superficially unrelated topics. The first is child nutrition and the current health crisis facing children and youth in North America. The second is the "buy local" movement which aims to combat the problems associated with the current industrial food system, such as pollution and food insecurity (Henderson, 2000). Farm-to-school literature examines the role of schools in improving student health while simultaneously supporting locally based farmers and strengthening local food systems (Strohbehn and Gregoire, 2001; Morris, 2002; Kalb, 2007; Kloppenberg *et al.*, 2008; Bagdonis *et al.,* 2008). In the discussion below, the current farm-to-school literature will be discussed with reference to these two bodies of research surrounding student health and the local food movement. Recent educational and agricultural policies from various government departments in the United States and Nova Scotia also highlight relevant barriers and opportunities for farm-to-school program development. The discussion will identify relevant gaps in the literature and policy with reference to the challenges and opportunities faced by farm-to-school stakeholders in Nova Scotia.

Farm-to-school programs have been largely neglected by social scientists, particularly within Canada. There are few empirically based case studies which examine the attitudes, motivations, barriers and opportunities related to farm-to-school activity (Joshi, 2008; Bagdonis *et al.*, 2008). As a prominent and intriguing social phenomenon, farm-to-school programs are a relatively recent development, with the majority of programs having emerged in the last decade (Tropp and Olowolayemo, 2000; Azuma, 2001; Strohbehn and Gregoire, 2001; Kalb, 2007). Accordingly, farm-to-school programs represent an area ripe for scholarly research which

remains considerably undeveloped in the academic literature. A great deal of the available information and research relating to farm-to-school programs is thus found in "grey literature", including policy documents, nongovernmental organization reports and unpublished feasibility studies (ex: Tropp and Olowolayemo, 2000; Azuma, 2001; Bellows, 2003; Kalb, 2005; Berkencamp, 2006; Joshi, 2006). Furthermore, the empirical farm-to-school research which has been published in scholarly journals and online reports originates almost exclusively from the United States (Strohbehn and Gregoire, 2001; Morris, 2002; Kalb *et al.*, 2004; Vallainatos, 2004; Keeley, 2005; Allen, 2006; Izumi, 2006; Kloppenberg *et al.*, 2008; Bagdonis *et al.*, 2008). To date, there have been no published studies which examine the barriers and opportunities for farm-to-school programs from an Atlantic Canadian perspective. This represents an important gap in the literature. Nonetheless, scholars point to the value of gaining strategic knowledge from real world cases of successful farm-to-school programs (Montgomery, 2006; Bagdonis *et al.*, 2008).

3.2 Towards Increased Student Health and Education

Many farm-to-school programs have been shown to have positive impacts upon the eating habits and nutrition education of school aged children, thereby helping to mitigate the adverse effects of poor diet (Keeley, 2005; Berkenkamp, 2006; Bagdonis *et al.*, 2008; Kloppenberg *et al.*, 2008). The health impacts of farm-to-school programs have been documented primarily in the "grey literature", including program evaluation reports and informal resource guides.

2.2.1 Farm-to-School and Student Health

A 2005 evaluation study in Wyoming reported an increased student excitement to try new vegetables through their summer farm-to-school programming at Wyoming Public Schools in

Grand Rapids, MI. The program conducted a "veggie vote" and reported that 53% of students had tried a new vegetable over the summer when the program was operational. Students also reported an increased preference for three out of five vegetables offered (Triant and Ryan, 2005).

In 2003, farm-to-school stakeholders in Berkeley, California commissioned an evaluation study of their Edible Schoolyard Project. The study found that students participating in the Edible Schoolyard Project demonstrated greater gains in understanding of garden cycles than did students in a control group without a farm-to-school program. Students also demonstrated an increase in knowledge about definitions of ecosystems and sustainable agriculture (Murphy, 2003). The Los Angeles Unified School District (LAUSD) in California also instituted school salad bars stocked with local produce. A 2007 evaluation report found that the Los Angeles farm-to-school program encouraged students, parents and teachers to participate in produce tastings and nutrition education sessions which helped increase participation in the lunch program. As a result, students reduced their calorie intake by an average of 200 calories a day, and their fat intake by 11 grams a day (Kalb, 2007).

In 2004, the Michigan Farm to School Program conducted a state-wide survey of school food service directors to investigate their interest in farm-to-school programs and to identify potential opportunities and barriers to implementation. Food service directors expressed diverse motivations for their interest in farm-to-school programs, including access to fresh, higher-quality food and potentially increasing students' fruit and vegetable consumption (Izumi, 2006).

Many of the farm-to-school programs in the US have been developed in response to poor child nutrition. In the US, only an estimated 10% of children are acquiring their daily recommended intake of fruits and vegetables, as many schools provide non-nutritious food choices (Kalb, 2007). Seventy percent of overweight adolescents remain overweight into

adulthood, thereby increasing their risk of heart disease and high blood pressure (American Obesity Association, 2006). In the United States, the rate of child obesity has tripled since the 1960's (American Obesity Association, 2006), with an estimated 15% of children being overweight in the year 2000 (National Center for Health Statistics, 2002). Statistics are similar in Canada, where the percentage of adolescents who are overweight more than doubled between 1978 and 2004 (Statistics Canada, 2006).

3.2.2 Farm-to-School and Nutrition Education

Much of the farm-to-school literature emphasizes the need for healthy eating and increased nutrition education among school aged children (Tropp and Olowolayemo, 2000; Morris, 2002; Kalb, 2007; Kloppenberg *et al.*, 2008; Bagdonis *et al.,* 2008; Joshi, 2009). Many children are far removed from the reality of food production and are therefore unaware of their foods' origins and the wide range of healthy foods available (Morris, 2002). This makes children more vulnerable to the increasing amounts of "junk food" advertisements aimed at them, especially within the public school environment (Morris, 2002: Kalb, 2007). As Kloppenberg *et al.* (2008) also point out, limited exposure to fresh, healthy foods tends to result in a heightened susceptibility to the highly processed and advertised "junk food" that surrounds them. A report to Industry Canada's Office of Consumer Affairs (2006) notes that children respond well to visually stimulating food advertisements and that the negative impacts on their diet often last into adulthood (L'Union de Consomateurs, 2006). Coupled with low levels of food and nutrition education in many school programs, today's young people are facing what many describe as a health crisis in North America (Story *et al.*, 2002). By linking classrooms and cafeterias with nearby farms, farm-to-school programs aim to provide school aged children not only with healthy food, but also with nutrition education and positive exposure to food production

(Kloppenberg *et al.*, 2008; Bagdonis *et al*., 2008; Joshi 2009). Indeed, many proponents of the American farm-to-school program argue that providing schools with fresh, unprocessed foods helps to reduce child obesity and other health related problems (Bellows, 2003; Carllson and Wiliams, 2008).

3.3 Towards Healthy Rural Communities and Civic Engagement

Research has shown that stakeholders not only implement farm-to-school programs to serve student health, but also to provide increased market opportunities for regional and small-scale farmers and to strengthen rural community fabric (Vallianatos *et al.*, 2004; Kloppenberg *et al.,* 2008). Farm-to-school research from "grey literature", including program evaluation reports, provides preliminary data on the economic impacts of farm-to-school programs on farm income. Scholarly farm-to-school literature explores the issue of the struggling family farm and its importance as a social institution. This literature builds on the social science research examining food networks and the potential for direct marketing of local foods to build social capital (Feenstra, 1997; Wright, 2006). Social capital refers to the frequency of meaningful social interactions and the network of social relationships within a given community (Putnam, 2000). The economic impacts of farm-to-school programs on participating farmers, as found in the "grey literature", as well as the importance of the family farm as a social institution, as found in the more scholarly literature, will be discussed below.

3.3.1 Economic Impacts on Farmers

Farm-to-school programs have the potential to open up the expansive school food market to local farmers. However, as Joshi and Azuma (2009) found in their recent survey of farm-to-school evaluation literature, reliable data on the exact economic impact of farm-to-school programs on participating farmers is limited. A farm-to-school report released through the

University of Minnesota (Haynes, 2009) also found that there is little reliable research examining such economic impacts, and those which do provide mixed results. Nonetheless, informal program evaluation reports do provide estimates of the economic impact of farm-to-school programs, including both income levels and business promotion. For instance, the Center for Food Justice completed a report (Hasse *et al.,* 2004) examining impacts of the Los Angeles United School District farm-to-school program. Entitled the "Fresh From the Farm Pilot Project," this initiative established a direct connection between the classroom and a Southern California organic farm. The farm sells their produce to the school using a Community Supported Agriculture (CSA) model, where the school receives a weekly delivery of a "food box" from the farm. It was found that the total amount received by the farm over a two year period was $33,513.75, an amount described as "modest, though not insignificant" (Hasse *et al.,*2004). Participation in the farm-to-school program also helped establish connections for future involvement in farm-to-school programs and brought increased recognition to the farm business (Hasse *et al.,*2004).

A study from the USDA's Sustainable Agriculture Research and Education (SARE) program (Feenstra and Ohmart, 2005) found that farm-to-school programs in Yolo County, California represented less than five percent of total income for most growers. In their abovementioned report, Joshi and Azuma (2009) found that most farmers typically report that the sales for the farm-to-school programs rarely exceed ten percent of their income. Much more research is needed before we can determine the potential benefits that farm-to-school might have on small farmers (Haynes, 2009).

3.3.2 Farm-to-School and Social Capital

As was mentioned above, scholarly farm-to-school literature examines the role of the family farm as an important social institution (Bagdonis *et al.,* 2008; Izumi *et al.,* 2009). In this way, the scholarly literature examines farm-to-school programs within the wider context of food localisation and rural sociology. Before the advent of urbanization and frequent off-farm paid labour, communities had no choice but to build "social capital" (Putnam, 2000; Wright, 2006). Cooperating with neighbours and surrounding community was a matter of survival for subsistence farmers, as many common farm tasks, such as harvesting hay and building barns, required a group effort (DeLind, 2008). The drastic decline in the number of smaller scale family farms has significantly changed the nature of modern day rural networks and farming communities in North America (Machum, 2005). Brian Halweil of the World Watch Institute explains that this trend in agriculture has significantly decreased the level of social capital within rural communities:

> Instead of dealing directly with their neighbours, farmers sell into a long and complex food marketing chain of which they are a tiny part. A whole constellation of relationships within the foodshed—between neighbours, between farmers and local processors, between farmers and consumers—is lost in the process (Halweil, 2002, pg 16).

As many scholars point out, however, these issues affect urban centers as well as rural communities (Pirog *et al.*, 2001; Sharp *et al.*, 2002; Dixon, 2007). Additionally, many farm-to-school programs exist in urban areas and seek to connect urban children and stakeholders with neighbouring farmers and/or urban gardens (Bagdonis *et al.,* 2008). Especially since Robert Putnam's famous book entitled *Bowling Alone: The Collapse and Revival of American Community*, there has been much discussion about how to overcome the severe deficiency in social capital which exists in many urban centres across North America. As many authors note, perhaps in response to the current deficiency in social capital within cities, urban food systems—

particularly in the form of farmers' markets—have become increasingly popular (Halweil, 2002; Lehmer *et al.*, 2006). As early as 1981, researchers were already beginning to explore the contribution of farmers' markets and local food networks to social capital; an early study on the subject by a team of sociologists estimated that people have ten times as many conversations at farmers' markets than they do at conventional 'one stop' supermarkets (Sommer *et al.*, 1981).

In the United States, the number of urban farmers' markets has grown tremendously. Indeed, the United States Department of Agriculture recorded 1,755 nationwide farmers' markets in 1994 (USDA, 2008). This number jumped to 4,625 in 2008 (USDA, 2008). In Nova Scotia, there are now more than 15 farmers' markets which have thus far contributed $62 million to the provincial economy (Farmers' Markets of Nova Scotia Cooperative Ltd, 2008). There are many ways in which direct marketing between farmers and consumers builds social capital. Knowing customers personally can give farmers a greater sense of moral obligation to provide safe food than if their customers were anonymous (Irvine *et al.*, 2003). This benefit illuminates the importance of social capital, which is its capacity to foster trusting relationships, social cohesion and safety. Being involved in social networks and associations has been shown to cause people to trust rather than fear each other. For instance, there is a strong correlation between higher levels of neighbourhood trust and lower crime rates (Putnam *et al.*, 2003).

3.3.3 Farm-to-School and Civic Agriculture

Because farm-to-school programs aim to strengthen local food systems and rural communities through supporting regionally-based farmers, Bagdonis *et al.* (2008) frames them using Thomas Lyson's theory of Civic Agriculture. Lyson (2004) defines Civic Agriculture as the "emergence and growth of community-based agriculture and food production activities that not only meet consumer demands for fresh, safe, and locally produced foods, but create jobs,

encourage entrepreneurship, and strengthen community identity" (p. 2). Such "food production activities" include such things as community supported agriculture, community gardens, roadside stands, farmers' markets, neighbourhood kitchens, locally controlled cooperatives and, of course, farm-to-school programs. The theory of Civic Agriculture represents a convergence of social science scholarship on civic engagement (Putnam, 2000; Ostrander, 2004; Wilson, 2007) with scholarship on the sociology of agriculture and food systems (Feenstra and Ohmart, 1997; Duffy, 2005; Ferry, 2008).

Lyson distinguishes between Conventional Agriculture and Civic Agriculture insofar as the latter is both a mechanism for profit making *and* a community building tool at the same time (2004). He further elaborates on the characteristics which identify Civic Agricultural enterprises, explaining that 1) they are oriented towards local markets that serve local consumers, not international markets, 2) farm production is more labour intensive and less capital intensive, and 3) the means of production and farm land is owned or controlled by farmers; decision making power exists at the local level (Lyson, 2004).

As Bagdonis *et al.* (2008) note, Lyson offers limited empirical findings on the actual perceptions, practices and social interactions within groups and communities that foster Civic Agriculture. Instead, Lyson broadly conceptualizes the nature and theoretical underpinnings of Civic Agriculture. Many scholars have thus sought to extend his theory and use it as a conceptual framework to analyse and understand on-the-ground initiatives. Stiles and Cameron (2009) applied Lyson's model of Civic Agriculture to the Atlantic Canadian context, arguing that Lyson's civic model may provide insight toward a more economically-viable and ecologically-sound future of rural communities and agriculture in the region. DeLind (2002) developed an understanding of civic agriculture which incorporated not only alternative market development,

but issues of community purpose and issues of identity. Bagdonis *et al.* (2008) extended Lyson's theory of Civic Agriculture to farm-to-school programs, offering empirical evidence that civic engagement was fostered through two farm-to-school programs in Pennsylvania.

3.4 Farm-to-School and US Government Legislation

Support for farm-to-school programming has made its way into United States government legislation. Indeed, there are regulations and policies in the United States (US) which create opportunities that do not yet exist in Canada. Three pieces of US federal legislation, the 2002 *Farm Bill*, the 2004 *Child Nutrition Act* and the National School Lunch Program (NSLP), have a bearing on the ability of schools to procure healthy local foods. Firstly, the 2002 Farm Bill encourages schools to give preference to local suppliers when procuring school food (Porterfield *et al*, 2006). Section 4303 of this Bill, entitled "Purchases of locally produced foods," states that

> The Secretary shall encourage institutions participating in the school lunch program under this chapter and the school breakfast program established by section 1773 of this title to purchase, in addition to other food purchases, locally produced foods for school meal programs, to the maximum extent practicable and appropriate (The Farm Security and Rural Investment Act, 2002).

Also, in 2004, Congress passed the *Child Nutrition Act*. Section 122 of this Act, subtitled "Access to Local Foods and School Gardens", mandates the creation of "seed grant" funding to start-up costs of school gardens and farm-to-school programs, including the purchase of cafeteria equipment and educational programs (*Child Nutrition Act*, 2004). It states further that USDA may provide assistance to programs "designed to procure local foods from small and medium sized farms for school meals" (*The Child Nutrition Act*, 2004). Although this section of the Act

did not receive government or private appropriation, it is a clear sign that farm-to-school is a priority at the federal level in the US.

Aside from the 2002 *Farm Bill* and the *Child Nutrition Act*, the National School Lunch Program (NSLP) also allocates federal funding for school food programs. The NSLP is a federally assisted meal program operating in public schools which allocates public funds towards reduced priced meals for low income children. This funding program was established under the *National School Lunch Act*, signed by President Harry Truman in 1946 (USDA, 2010). The Federal Food and Nutrition Service administers the program at the national level. At the State level, the NSLP is usually administered by state education agencies, which operate the program through agreements with school food authorities.

In Canada, the federal government does not regulate schools or provide funding programs for school meals. Instead, public schools are provincially funded and regulated. Canada and the United States have differing regulatory frameworks which affect schools' abilities to cover farm-to-school program implementation costs. Nonetheless, successful American farm-to-school programs can offer valuable insight into how local food procurement can be better achieved here at home.

3.5 The Nova Scotian Context: Exploring Obstacles from the "Grey Literature"

As was mentioned above, there is yet to be any scholarly research examining the barriers and opportunities for farm-to-school activity in Nova Scotia or Atlantic Canada. However, there is abundant grey literature from NGO reports, government reports and consultant reports which examines agricultural and educational policies and the current state of agriculture and education in the province. Such literature examines a number of obstacles and possible opportunities for

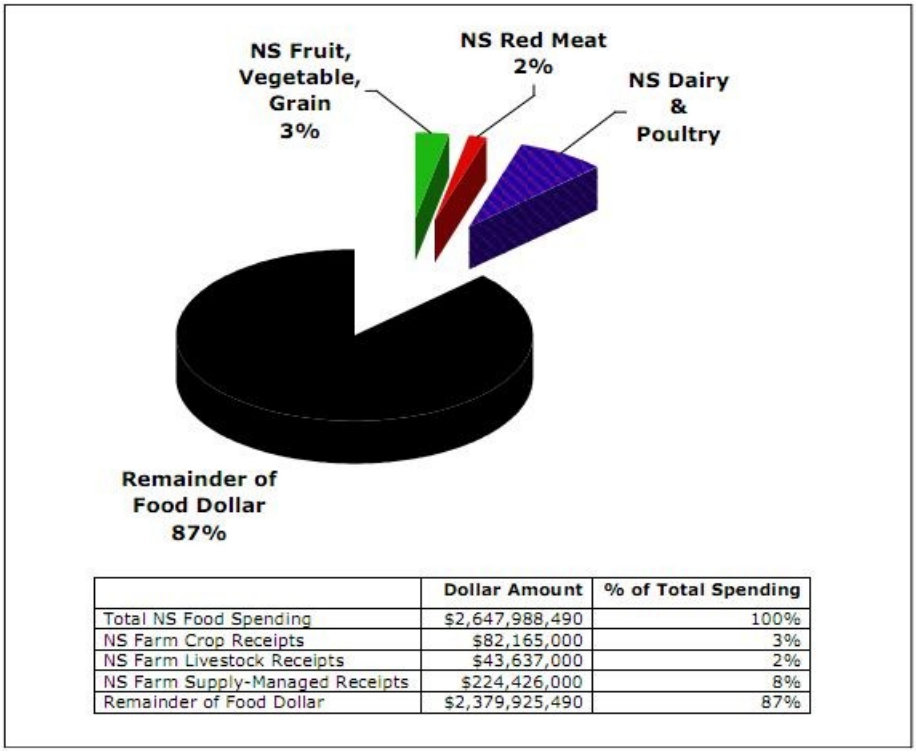
increased government and citizen action surrounding local food procurement in Nova Scotia's public schools.

It is commonly argued that reducing the distance between producer and consumer contributes to long term community food security (Bellows, 2003; Williams *et al,* 2006; Kalb, 2007; MacLeod and Scott, 2010). Farm-to-school proponents point out that public schools represent a high volume steady demand that farmers can plan for, thus establishing better controls over planting and harvesting (Kalb, 2007). By increasing the capacity of local farmers to produce higher volumes of food, proponents argue that surrounding communities become less reliant upon imported food (Pirog *et al.*, 2001). Because the viability of imported foods is contingent upon the existence of abundant and inexpensive fossil fuels, *long term* food security involves becoming gradually less dependent upon high volumes of imported foods (Vallainatos, 2004).

A report published by the Policy Working Group of the Nova Scotia Participatory Food Security Projects (Williams *et al.*, 2006) examined the issue of food security in NS[7]. Nova Scotia is not a food secure region because of, among other things, the rapid decline in the number of farms in the last 20 years. Accordingly, the report suggests, the majority of food consumed in Nova Scotia is not produced in Nova Scotia (Williams *et al.*, 2006). A recent report (MacLeod and Scott, 2010) released by the Nova Scotia Federation of Agriculture (NSFA) and the Ecology Action Center (EAC) confirms this point, estimating that only 13% of Nova Scotia's "food dollar" is spent on food produced within the province. Figure 2 displays the results of their study.

[7] The authors define food security as follows: "[Food security] means not having to worry about having enough food or enough money to buy food. Food security also includes being able to make a living by growing and producing food in ways that protect and support both the land and the food producers, and that ensure that there will be healthy food for our children's children. In other words, food security means that an individual or a community has access to nutritious, safe, personally acceptable and culturally appropriate foods that are produced, procured and distributed in ways that are environmentally sound and socially just" (Williams *et al.*, 2006, pg 4).

Fig.2: Total Nova Scotia food spending relative to farm cash receipts, 2008 (MacLeod and Scott, 2010). Data derived from Statistics Canada's Farm Cash Receipts – Agriculture Economic Statistics Series. Cat. No. 21-011-X



	Dollar Amount	% of Total Spending
Total NS Food Spending	$2,647,988,490	100%
NS Farm Crop Receipts	$82,165,000	3%
NS Farm Livestock Receipts	$43,637,000	2%
NS Farm Supply-Managed Receipts	$224,426,000	8%
Remainder of Food Dollar	$2,379,925,490	87%

The NSFA estimates that only 8.4% of the Nova Scotian diet is produced within the province (NSFA, 2008). Williams *et al.* (2006) argue that a good way to boost food security in Nova Scotia is to increase and promote the consumption of food produced within the province. This will improve the economic viability for local producers and increase the quality, value and quantity of food available (Williams *et al.*, 2006).

There are currently 430 public schools throughout Nova Scotia, which serve tens of thousands of students five days a week. This represents a large potential market for agricultural products. The potential impacts of locally sourced school meals upon the Nova Scotian agricultural economy are not yet known. However, locally-sourced school meals in other areas of North America have been shown to increase local food commerce, thereby improving producer viability and food security (Vallainatos, 2004; Montgomery, 2006). Nonetheless, there are

serious obstacles and challenges which currently prevent greater amounts of locally grown foods from being purchased by public schools in Nova Scotia. These will be examined in further sections, below).

According to GPI*Atlantic,* aside from quota managed sectors such as dairy and poultry, agriculture in Nova Scotia is suffering from a steady economic downturn. As will be discussed below, although the government has been making a concerted effort to ameliorate the problem, net farm income has been decreasing steadily in recent years. In 2001, GPI*Atlantic* released a report which examined economic trends in the agricultural sector and warned of the increasing difficulty of small scale farmers to make ends meet.

A major reason for the rapid decline in farm economic viability is the consolidation of the retail food sector. Indeed, research has shown that to be successful, small to medium sized farms require a number of low volume buyers. For instance, in a report released by Roberts *et al.* (2005), the authors conclude that within the context of a *diversified* industry, agriculture in Nova Scotia maintained a reasonable level of profitability for many years. A 'diversified industry' means that small farms have a number of direct buyers for their products, such as small grocery stores and weekly markets. As recently as the mid 1980's, Atlantic wholesalers had an average of 30 separate buyers and 20 separate distribution centres in the Maritimes (GPI*Atlantic,* 2001). Today, the number of buyers has been drastically reduced, as the industry has become increasingly consolidated due to grocery chain mergers and the growth of public institutions such as hospitals and schools (Roberts *et al.*, 2005). Small farmers in Nova Scotia find it increasingly difficult to access buyers in the current consolidated market (Roberts *et al.*, 2005).

The prices that small producers do receive for their products are often not enough to make ends meet (GPI*Atlantic,* 2008a). When Roberts *et al.* (2006) examined reasons why farm

product prices are not covering costs of production, they found that when farm product prices are determined by foreign competitors in external markets, each supplier-farmer must be able to match it, whether they are located in Nova Scotia or on the West Coast and regardless of whether production costs vary from region to region (Roberts *et al.*, 2006). These prices tend to be lower than is economical for Nova Scotia farmers.

In their 2008 report, GPI*Atlantic* explain that where farmers are exposed to competition around the world, lower farm gate prices are "...becoming a reality as the food retail and processing sectors consolidate and seek increased efficiencies. Nova Scotia product price will be increasingly set in markets elsewhere by large monoculture farms that produce commodities at the lowest price" (GPI*Atlantic*, 2008a, p. 12). This is an important issue to consider in this research because, as was mentioned, most large public schools tend to hire large retail companies which import high volumes of food from outside markets at prices far cheaper than what local producers can afford to charge. The sheer volume of food consumed in public schools in Nova Scotia often requires the service of large scale industrial retail food suppliers (Murton, 2004) as opposed to smaller scale farm stands or direct sales from nearby farmers. This will be a serious obstacle to overcome. However, as will be discussed below, many new government policies and programs have begun to promote direct marketing[8] opportunities for Nova Scotia's farmers in an effort to increase producer viability within the province.

Another major barrier which has been identified in the literature is a lack of funding for public schools to procure food from alternative local sources. A study conducted in 2004 on behalf of the Nova Scotia Department of Health Promotion found that most Nova Scotian public

[8] 'Direct Marketing' refers to the sale of products directly from producer to consumer, be they individual consumers or public institutions. By cutting out the 'middle man' (i.e., large food distribution companies), farmers receive a larger portion of the food dollar, as large distributors normally receive a high percentage of the sale of farm products (Roberts, *et al.*, 2008).

schools were receiving much of their food and beverages from large corporations, including Coke, Pepsi and Nestle. These corporations make upfront payments in return for the exclusive right to sell and advertise their products within particular schools (Murton, 2004). Such contracts have allowed many Nova Scotian schools to purchase sports equipment, computers and additional resources (Murton, 2004); they have been an essential source of funding for many public schools in the province (Murton, 2004).

Murton conducted 26 key informant interviews with head food service staff from all eight school boards across the province. One of the study's findings is that:

> Generally two options were declared by key informants when it came to providing foods and beverages in schools: offering nutritionally inferior foods and beverages that provided revenue or nutritionally balanced, affordable choices that supported student health at the expense of "profit." Most respondents vehemently stated that schools had come to depend upon monies from vending, cafeteria and canteen sales to generate funds for basic school necessities, classroom supports and extra-curricular activities. All informants acknowledged the increased reliance on corporate sponsors and private companies as a source of revenue for schools. (Murton, 2004, pg 12).

Although financial incentives are a major reason why most public schools serve highly processed imported food, there are two other key factors that limit the ability of many schools to serve fresh, locally produced food. Murton's study found that many schools lack the infrastructure and facilities—including refrigerator space, stoves and storage space—to deal with food which is not pre-packaged and/or highly processed. Therefore, many schools serve reheated frozen pizzas, chicken nuggets, hamburgers and macaroni and cheese instead of fresh non-processed food (Murton, 2004). Also, this study found that the number of adequately trained food service staff available to prepare, procure and deliver food was a major determinant in what types of food schools could serve to their students (Murton, 2004). Murton found that schools

which lacked adequate staff tended to rely more heavily upon highly processed convenience foods instead of fresh produce.

3.6 Provincial Policy Responses in Nova Scotia

In recent years, the provincial government has created a number of programs and policies which directly address the barriers facing farm-school partnerships in Nova Scotia. As will be discussed below, the government has recently begun assisting small scale farmers, with increased funding and investment to help build agricultural capacity in the province. The government has also created sustainable procurement policies which include a focus on promoting local foods within public institutions, including public schools. Finally, the Department of Education and the Department of Health Promotion and Protection have created a recent healthy eating policy for Nova Scotia's public schools which promotes the use of fresh fruits and vegetables.

Many new initiatives and policies are emerging that seek to promote Nova Scotia agriculture and to develop new markets for small scale farmers. However, because the majority of these initiatives and policies have been recently introduced, we have yet to see whether they will be effective in bringing about lasting change.

In its annual business plan for 2008-2009, the Nova Scotia Department of Agriculture (NSDA) stated that it intends to increase market shares for Nova Scotia's farmers through continued 'buy local' promotional initiatives (NSDA, 2008). Two of its primary efforts are to 1) work with Nova Scotia Economic Development to increase the volume of local agricultural products in provincially owned and operated institutions and 2) to increase the amount of direct marketing between small scale local farms and consumers (NSDA, 2008).

In an effort to increase the capacity for direct marketing in Nova Scotia, the NSDA in partnership with the Council of Atlantic Premiers commissioned a report in May 2008 which

explored the opportunities for direct marketing in Nova Scotia. The primary objective of this report was to define projects that government, industry and direct marketers can cooperatively implement to further the effectiveness of the direct marketing sector in the Atlantic Provinces (Roberts *et al.*, 2008). In the effort to identify and define such projects, this report made six recommendations for how to overcome the barriers which currently prevent farmers from marketing their products directly to consumers and/or to public institutions.

The first and most important priority identified in this report relates to the formulation of new agricultural policies: "Policies need to be developed that encourage all levels of government to support the future development of agricultural direct-marketing opportunities in Atlantic Canada" (Roberts *et al.*, 2008, p. 25). Actionable projects identified in relation to this priority were 1) the formation of industry-government bodies, including municipal authorities, to examine programs and policies and their relation to direct marketing businesses and 2) the establishment of an office or officer in each provincial department of agriculture to assist direct marketers to work through the regulatory regime associated with establishment of retail venues (Roberts *et al.*, 2008).

In the introduction to this report, the authors state that

> [o]ver the last decade, farmers in the Atlantic region have faced a number of challenges from an increasingly globalized food system and issues arising from changes in world trade. Farmers have responded to these challenges in a number of ways. Some have... chosen strategies that bring their products closer to the consumer by adopting direct marketing and value-adding practices (Roberts *et al.*, 2008, p. 35).

By formulating new policies and programs which aim to assist and further develop direct marketing opportunities, the provincial government could help to create new markets for small scale farmers, such that they will become more financially independent. However, because these policies and programs are still in the planning phase, their effectiveness has yet to be proven.

Aside from co-commissioning a report about the opportunities for expanding direct marketing in the Maritimes, the NSDA also established the Direct-Marketing Community Development Trust Fund (DMCDTF). The DMCDTF is a 3-year program which began in 2008-2009, and is intended to facilitate investment in support of infrastructure and development initiatives that enhance local food systems. This includes, but is not limited to, initiatives which seek to build better connections between small scale local producers and public institutions. The maximum amount of money available per initiative is $350,000 per year, to a maximum $1.0 M over three years.

Another NSDA recent program aimed at helping and supporting agriculture in the province is called ThinkFarm. Launched in August, 2010, the ThinkFarm initiative is working to attract new people into agriculture and to support beginning farmers by providing resource and information guides on farm registration, farm credit interest rates, livestock health, crop and livestock insurance and farm business development support. Recent ThinkFarm publications include the "Guide for Beginning Farmers in Nova Scotia" and the "Resource Kit for Nova Scotia Farmers"[9]. The NSDA also recently launched the Nova Scotia Agricultural Awareness initiative which provides educational material for the general public and for school-aged children, including the Classroom Chick-Hatch Program and farm visits for interested schools. The aim of this initiative is to enhance knowledge, understanding and appreciation of the agriculture and Agri-food industry in Nova Scotia[10]

All of these government policies and programs are intended to promote, support and strengthen Nova Scotia's agricultural economy and to benefit small to medium sized farmers

[9] See the Nova Scotia Department of Agriculture's *ThinkFarm* website: http://www.gov.ns.ca/agri/thinkfarm/#publications

[10] See the Nova Scotia Department of Agriculture's *Nova Scotia Agricultural Awareness* website: http://www.gov.ns.ca/agri/agaware/index.shtml

with market research, funding and promotion materials. Aside from working to strengthen agricultural capacity within the province, the government has also begun to create policies which favour the use of locally grown foods within public institutions.

In 2005, the Nova Scotia Department of Environment and Labour (NSEL) created an Environmentally Responsible Procurement Policy for the province. This policy stipulates that all government and publicly funded institutions[11] are to purchase goods and services which have a reduced negative effect on the environment—such as reduced packaging, reduced maintenance requirements, and ease of re-use, refurbishment, re-manufacture or recycling at end of life—over their full life cycle when compared with competing products or services (NSEL, 2005). This policy has three primary aims: 1) to conserve natural resources and energy, promote pollution prevention and minimize or avoid the release of harmful substances into the environment; 2) to promote awareness of environmentally preferable goods and services through government procurement practices; and 3) to encourage demand for environmentally preferable goods and services (NSEL, 2005).

In 2007, the Nova Scotia government released a new piece of legislation entitled *Environmental Goals and Sustainable Prosperity Act* which set forth 21 far reaching goals. One of these goals is to develop and adopt a sustainable procurement policy for government departments by December 2009. The initiative to implement a sustainable procurement policy for the Province of Nova Scotia was led by Nova Scotia Economic Development (NSED) and Nova Scotia Environment and Labour (NSEL). The sustainable procurement policy began to be implemented in December 2009.

[11] Publicly funded institutions include municipalities, academic institutions, school boards and hospitals. This is commonly referred to as the "MASH" sector.

According to a discussion paper released by the Government of Nova Scotia in 2008, sustainable procurement means taking full responsibility for the long-term health and social impacts of government purchasing and consumption decisions. This may include considerations related to ethical procurement, by selecting fairly traded sweat shop free products, and procurement which fosters economic development, by selecting local products and services where permitted under trade agreements[12] (GNS, 2008).

Along with the implementation of the sustainable procurement policy in December of 2009, many government departments have taken steps towards bettering their procurement practices. For instance, in 2007, the government made changes through the NSED Supplier Development Program to support the purchase of local agricultural products in provincial health care and justice institutions (GNS, 2008). The government of Nova Scotia is recognized by many as a leader in sustainable procurement practices. For instance, in a report published in 2008 by the Canadian Institute for Environmental Law and Policy, it is stated that

> Nova Scotia is an example of a Canadian province subject to the Agreement on Internal Trade (AIT) that is actively pursuing local food procurement as part of a broader sustainable procurement initiative. ...[t]he government is working towards fulfilling this commitment to sustainable procurement through a range of environmentally responsible procurement practices, including local food procurement (Whitney, 2008, p. 15).

Evidently, then, the government has a dual aim of building agricultural capacity in Nova Scotia and of procuring local sustainable goods in public institutions by creating new legislation and policies. Therefore, the ability of farmers to supply requisite amounts of produce to public institutions should be increased by way of market research, funding and advertising, as discussed

[12] Nova Scotia is signed onto the Agreement on Internal Trade (AIT) with the Federal government and other provinces. This trade agreement stipulates that provincial governments must give fair and favourable consideration to all potential suppliers regardless of physical location (AIT Consolidated Version, 2008). However, this requirement generally applies where the procurement value of goods is $25,000 or more. Also, the AIT provides an exception for procurement for regional and economic development purposes (Internal Trade Secretariat, 2008). Therefore, for smaller public institutions—such as public schools—the primary trade agreement permits the procurement of local goods.

above. Also, these recent policies, programs and legislation indicate openness on the part of government to build better farm-school marketing partnerships. Accordingly, despite the current obstacles and challenges, there is definitive policy opportunity in Nova Scotia to build better connections between public schools and local farms in Nova Scotia.

Finally, the provincial government has created a policy which aims to increase the quality of student nutrition in Nova Scotia, as the latter has been shown to be less than satisfactory in recent years. For the 2005 consultation draft of the Food and Nutrition Policy for Nova Scotia's Public Schools (FNPNSPS), a study was conducted of 5200 grade five students from across the province. The study concluded that the dietary intake among Nova Scotia's students is relatively poor, as many are eating less than the recommended daily intake of fruits and vegetables (NSDE, 2005). However, the recent development and implementation of the Food and Nutrition Policy for Nova Scotia's Public Schools indicates an increased awareness and commitment to student health in Nova Scotia. The intent of this policy is to promote and encourage healthy eating among Nova Scotia's primary-to-12 students by eliminating "junk food"—including pop, potato chips, candy bars and vending machines—from public schools (FNPNSPS, 2009).

This review of provincial policy provides the necessary context for understanding the initial obstacles and opportunities regarding farm-school partnerships in Nova Scotia. The above review of the scholarly and grey literature provides an understanding of the wider social and conceptual context within which this research exists. However, as was discussed above, the current farm-to-school literature originates almost exclusively from the United States and thus does not address the barriers and opportunities specific to the Canadian context, where federal and provincial policies differ greatly from those in the United States. Further, there have been no published empirical case studies of farm-to-school programs from an Atlantic Canadian

perspective. This is an important gap in the research, and reflects the need for an Atlantic Canadian perspective within the scholarly literature.

Chapter 4: Results

This chapter presents the results and recommendations from the comparative case study. The regulatory frameworks, including the school governance structure and the school food management, differ greatly in Colchester and Hancock Counties. A discussion of these differences will provide the necessary context within which to discuss the relevant barriers and opportunities in each location. Despite the stark differences in the respective school regulatory frameworks, there are also important similarities which speak to the comparative element of this research. Indeed, the perceived benefits of farm-to-school programming in each area are comparable, demonstrating a similarity in stakeholder attitudes across cases. The size of the schools and the size of the neighbouring farms are also relatively similar, thus making the on-the-ground barriers and opportunities comparable in nature. Finally, the strategies employed by farm-to-school stakeholders in Hancock County, Maine, will be discussed with reference to the barriers found in Nova Scotia. This discussion will inform the opportunities which currently face potential farm-to-school stakeholders in Colchester County, Nova Scotia.

4.1 Differences in School Regulatory Frameworks in Maine and Nova Scotia

Maine has a slightly larger land mass and population than Nova Scotia. However, the state of Maine and the province of Nova Scotia have comparable student bodies and numbers of public schools. Indeed, Nova Scotia has a total of 414 public schools (Nova Scotia Department of Education, 2010) while Maine has a total of 710 public schools (Maine Public School Statistics, 2010). With an approximate difference of 300 schools, Nova Scotia and Maine's student bodies are 133,134 and 201,651 respectively (Nova Scotia Department of Education, 2010; Maine Public School Statistics, 2010).

Although the student population size and number of public schools in Maine and Nova Scotia are comparable, there are significant differences in the school governance structure and food service management. Although each area faces similar barriers based on their demographic and geographic similarities, stakeholders are working within different regulatory frameworks. These differences are important to consider when doing comparative analysis across different contexts, as such administrative and regulatory differences can affect the stakeholder options in procuring local foods (IP 7, 2010; IP 3, 2010). More specifically for this study, a comparative analysis of the key regulatory differences in each area will frame the working contexts of school stakeholders and provide an understanding of how such differing regulatory frameworks impact the comparability of the two locations.

School Governance Structure

The school governance structure in the state of Maine is markedly different than in the province of Nova Scotia. In Maine, as in other parts of the United States, governance of school affairs is much more localised than it tends to be in Canada, where school boards are governed and funded by provincial governments. The state of Maine has approximately 201 different school-related administrative bodies, including School Departments, School Boards and School Districts. Each administrative body governs an average of 10-20 schools. Although in recent years there has been a push towards a more centralized school system in Maine (IP 2, 2010), the high number of administrative bodies indicates a much higher level of local control. In contrast to 201 different administrative bodies, Nova Scotia has only seven school boards, each of which covers approximately one to two counties and oversees an average of 60-70 schools.

The Maine school is located in the Mount Desert Community School District. This school district represents a total of nine schools. The Nova Scotia school is located in the Chignecto

Central Regional School Board and, in contrast, represents a total of 77 schools. As mentioned above, public schools in Canada fall under the jurisdiction of provincial governments and are therefore more centrally controlled than American public schools which tend to fall under the jurisdiction of municipal governments. Accordingly, the Maine school is funded municipally while the Nova Scotia school is funded provincially. This difference in governance and funding sources has an impact upon the way stakeholders view the support they receive from their community. One stakeholder in Maine described the relationship between local municipal governance and the sense of community support for farm-to-school programming:

> ...on the island here...our schools [are] funded completely, 100%, through local tax money. We don't get any money through the State. So, we really depended upon the support of our local community to be able to do what we wanted to do with our school. I think that's another key component, is to have that support and trust of the community, because they're the ones who one way or another are going to fund it. I don't know how it works in Canada, but all of our funding comes from our local tax dollars (IP 3, 2010).

Another participant explained that,

> because our local schools are funded primarily with municipal tax dollars that are raised right in the town, a lot of the school food service staff feel a desire to keep those funds circulating in their town as much as they can. They want to support the farm that is absolutely closest to home (IP 2, 2010).

In other words, there is a strong sense of community connection in farm-to-school programming because it is an investment of local community tax dollars rather than state-wide or federal dollars.

Stakeholders from the Nova Scotia school also expressed a strong sense of connection to their community (IP 11, 2010; IP 12, 2010; IP 13, 2010). Interestingly, however, unlike the participants in Hancock County, Maine, they did not express it in relation to the tax money which the school receives. Public schools in Nova Scotia are not municipally funded with

community tax dollars. Rather, they are funded from province wide tax dollars provided through the provincial Department of Education.

School Food Management

The other key difference between the two schools is the way that the cafeterias are managed. The school food service in the Maine school is managed independently, while the food service in the Nova Scotia school is managed by a catering society that also services 20 other schools in the region. This is also an important distinction to make, as two common food service models are either a) for the school food service to be managed independently from other schools or b) for a school food service to be managed as part of either a non-profit catering society or as part of a for-profit private business. The two elementary schools used for this case study represent these two different school food service management models, with the Hancock County school being managed independently, while the Colchester County school is managed by a not-for-profit catering society.

The school food service decisions, including the type of food served as well as potential suppliers, is decided by the Food Service Director (FSD) at the school in Maine. Because there are only nine schools in the Mount Desert Community School District, food procurement decisions are made at the schools themselves instead of being made centrally (IP 3, 2010). In contrast, when there are a larger number of schools which fall under one administrative body, as they do in Nova Scotia, it is considered by participants as less labour intensive if the school cafeterias are managed together. As mentioned above, the food service at the Nova Scotia school is managed by a non-profit catering society which services 20 other schools in the Chignecto Central Regional School Board. As such, the food service decisions, including the type of food served and the potential suppliers, are made by an employee of the catering society for all 20

schools (IP 12, 2010). The catering society was formed by the school board under legal advice and every school which it services is managed as its own micro business (IP 12, 2010). In other words, each school does not receive subsidies for food procurement and therefore must break even financially.

Interview participants in the Maine school indicated that the individual buying power of the school gave it the flexibility it needed to procure local foods (IP 2, 2010; IP 3, 2010). Conversely, schools which belong to larger buying groups may not enjoy the same level of flexibility and autonomy needed to deal with local suppliers, as decisions tend to be made centrally as opposed to at the school level (IP 7, 2010).

Interestingly, although the head staff at the catering society is responsible for the food procurement at the Nova Scotia school, there is still room for the kitchen staff at the school to partake in some local purchasing. It was explained that although the catering society staff does manage the majority of the schools' food procurement, "...I do let the cooks do that. They are able to purchase from local suppliers" (IP 12, 2010). As will be discussed below, there are still significant barriers which face school food service staff in procuring local food. Nonetheless, because the catering society allows the school kitchen staff to buy local products when possible, there is enough autonomy and flexibility around food procurement to allow for the potential use of local suppliers (IP 12, 2010). Allowing for flexibility in food procurement is a positive way that school buying groups, such as catering societies, can facilitate farm-to-school programs.

Although there are significant differences in the school governance structure and school food service management in each area, research participants believed that these administrative frameworks did not have a significant effect upon the barriers faced by schools (IP 4, 2010; IP 11, 2010; IP 12, 2010). Instead, participants suggested that the major factor which determines

the barriers facing institutions is the scale of the farms and the scale of the schools involved (IP 2, 2010; IP 7, 2010; IP8, 2010; IP 11, 2010; IP 12, 2010). In other words, smaller schools working with smaller farms will face a different set of barriers than larger schools working with larger farms. This finding sheds light upon the nature of the structural barriers which face schools in procuring local food, and will thus be discussed below in further detail.

In the study sites, administrative differences have less effect upon the barriers and opportunities that face farm-to-school activity than the scale of the farms and school involved in the farm-to-school programming. The two schools in question have relatively small student bodies and are surrounded by small scale farms. Accordingly, as will be discussed below with reference to participant interview data, the barriers and opportunities faced by each were found to be relatively similar, despite the abovementioned differences in school governance and food service management.

Interestingly, although stakeholders in each location are working within very different regulatory and administrative frameworks, they expressed very similar attitudes and beliefs surrounding farm-to-school programs. This is important because these perceived beliefs will now be discussed to provide a conceptual framework both for a) why stakeholders in Colchester County, Nova Scotia are interested in further developing farm-to-school programming in Colchester County and b) why stakeholders in Hancock County, Maine established their successful farm-to-school program. Following this discussion, the barriers and assets found in the Colchester County School will be analysed, followed by a discussion of how the Hancock County farm-to-school program can potentially address them.

4.2 Similarities in Perceived Benefits of Farm-to-School in Nova Scotia and Maine

The perceived benefits which emerged from the interview data in each location centered on two primary themes: 1) farm-to-school programs provide support for regional farmers; and 2) health promotion. As mentioned above, these are also the two themes which appear most frequently in the farm-to-school literature, as most farm-to-school programs aim to promote both student health and small scale farming (Kloppenberg *et al*., 2006; Voigt *et al.*, 2007; Bagdonis *et al*., 2008). An interesting sub theme which emerged in the Nova Scotian context only was the potential for farm-to-school programs to help preserve culture and heritage (IP 7, 2010; IP 8, 2010).

Support for Regional Farmers

Interview participants in each location expressed the belief that farm-to-school programs provide support for regional farmers in a number of ways. Firstly, it was believed that farm-to-school programs have the ability to provide economic support for farmers (IP 1, 2010; IP 2, 2010; IP 3, 2010, IP 4, 2010; IP 7, 2010; IP 8, 2010; IP 10, 2010; IP 12, 2010). Interestingly, this support for farmers was not only discussed in terms of monetary value, but in terms of visibility within the community, keeping farmers engaged with the community and with youth, and creating community connections (IP 1, 2010; IP 2, 2010; IP 3, 2010, IP 4, 2010; IP 7, 2010; IP 8, 2010; IP 12, 2010). Indeed, as an interviewee from the Hancock County farm-to-school program notes,

> there's also the issue of visibility in the community for the farmers. Especially with young families. I worked at a farm stand a few years ago with a farm that also participated in the farm-to-school program. It would be great when a parent would come in and say 'oh I had to come in and try your produce because my kid was demanding more of it' (IP 2, 2010).

At the heart of this passage, the interviewee describes how farm-to-school programs contribute not just dollar value to the farmers involved, but recognition within the community through their involvement with the school.

Health Promotion Among School Aged Children

In addition to benefits to the farmers, participants also noted that farm-to-school programs have potential health benefits for children involved, as local foods tend to be fresher and less processed than conventionally sourced goods (IP 1, 2010; IP 2, 2010; IP 3, 2010, IP 4, 2010; IP 7, 2010; IP 8, 2010; IP 9, 2010; IP 12, 2010). Participants addressed the theme of health promotion from a number of angles, discussing not only the physical health benefits of local food, but also nutrition education, child empowerment and trustworthiness of food sources. The topic of nutrition education was discussed in terms of creating a new generation of food conscious consumers (IP 1, 2010; IP 2, 2010; IP 3, 2010, IP 4, 2010; 2010; IP 10, 2010; IP 12, 2010). Indeed, as one interview participant explains

> I think we've seen a generation of kids who think that potatoes come out of a box. Everybody's out to the soccer game, and nobody's home cooking anything. They just really never saw all of this fresh produce. You know, carrots came out of a box and everything. There is an educational element. We taught kids to develop a taste for chicken nuggets and stuff like that. So we can unteach them. It didn't happen overnight, so it's not going to unhappen overnight (IP 1, 2010).

Evidently, stakeholders in both Maine and Nova Scotia believe that farm-to-school programming has numerous benefits for the farmers, school children and broader society. These beliefs serve as motivation and drivers for farm-to-school activity in each study location. Although participants in the Nova Scotia context are interested in further developing farm-to-school programs for these reasons, there are numerous barriers which currently prevent the school from procuring greater amounts of locally produced food.

4.3 Barriers in Colchester County

4.3.1 Budget Constraints

When asked about the most common barriers faced when sourcing local food, interview participants commonly cited budgetary constraints (IP 7, 2010; IP 8, 2010; IP 9, 2010; IP 11, 2010; IP 12, 2010; IP 13, 2010). The budget constraints all address, either indirectly or directly, the fact that it is difficult to procure more expensive locally produced food when there is no equivalent rise in income or funds. The budget constraints found in Colchester County were grouped by theme and broken down into three primary categories.

Local Food More Expensive

A commonly cited budget constraint which faces start up farm-to-school programming in Colchester County is the perception that local food is more expensive than conventionally sourced foods (IP 7, 2010; IP 8, 2010; IP 9, 2010; IP 10, 2010; IP 11, 2010; IP 12, 2010; IP 13, 2010). The price breakdown of school meals does not allow for a much higher percentage of money to be spent on procuring food. The price of the school meal has to include not only the cost of the food itself, but also staff wages, plates, cutlery and napkins (IP 12, 2010). Because the price of the meal covers so many items, there is not much room to increase the cost of procuring food without raising prices to the student.

Funds Dependent upon Student Support

Like many food services in schools across North America, the funds generated in Colchester County are solely dependent upon student support. The schools' administrative costs, the cooks' salaries and the cost of food itself are all covered by the sale of school lunches (IP 12, 2010). As one staff member in Colchester County notes,

> ...it can be difficult, because if you have a school of a certain population where the students aren't supporting the cafeteria, then that school still has to sustain their...

> administrative costs. In a school of 200 kids which only got 50 kids eating lunch each day, for instance, their sales may not generate enough revenue to make that cost a manageable percentage. (IP 12, 2010).

As was mentioned above, the school recently implemented the new nutrition policy which phased out foods of minimal nutritive value. This has been an issue for the school, as less children are now supporting the cafeteria because they do not like the taste of 'healthy' food (IP 12, 2010). One interviewee described the effect which the new nutrition policy has had upon the children and their interest in the food being offered:

> ...pasta has to be whole grain, so they have to try brown and green pasta and they're not used to eating that kind of stuff. Many of our kids just don't eat like this. So eating at school like this is just so different, you know, whole wheat crust on pizzas and things like that that are quite different (IP 13, 2010).

A challenge in implementing farm-to-school programming and procuring local fresh, healthy food will be to find food that the students will eat so that they will continue to support the school cafeteria. This is a common barrier in start up farm-to-school programs, and is related to wider changes in the eating habits of today's youth (Thonney and Reinhardt, 2004; Joshi, 2006). Indeed, finding healthy foods that children will actually eat is a major challenge facing any school which is struggling to implement healthy eating strategies into its cafeteria (Izumi 2006; Kalb, 2007). As will be discussed below, the farm-to-school program in Hancock County provides creative insight into how Colchester County can implement strategies to help familiarize children with alternative foods.

Lack of Human Resources

The most commonly cited barrier in the existing farm-to-school literature is that local food is simply more work intensive to procure and prepare (Izumi, 2006; Kloppenberg *et al.*, 2008; Bagdonis *et al.*, 2008). In schools which already face budget restrictions, it can be difficult for schools to pay staff for the extra time required for searching out local suppliers, dealing with

the extra administrative tasks associated with paying out multiple suppliers, and preparing whole foods from scratch. The human resource barriers found in Colchester County illustrate the common challenges which face schools looking to begin a start up farm-to-school program.

As found in Colchester County, there is a time commitment required to investigate the potential local suppliers and to get a farm-to-school program off the ground (IP 7, 2010; IP 0, 2030, IP 12, 2010; IP 13, 2010). This responsibility falls to the school staff and is therefore a human resource issue. Indeed, as one school staff person notes:

> I'll tell you, we're totally maxed out and don't have time, and I wouldn't even know where to start. This is a certain area of expertise. You have to have those relationships with producers and have somebody monitor it if there's issues around supply (IP 11, 2010)

Accordingly, additional staff time is required for making the initial connection with local farmers and establishing purchasing relationships.

When asked about the human resources required for purchasing from a local supplier, one of the first things mentioned was the need for the food to be delivered to the school. As it stands, the head staff of the catering society is responsible for picking up the invoices from the individual schools and making sure that the schools have what they require from their existing food distributors. The staff at the schools who prepare the food are already struggling with time constraints and currently do not have the time required to procure local food themselves. Indeed, as one interviewee describes:

> [school staff] get so many hours a day to produce a certain amount of meals on a certain budget. The local farmers market...is open Saturday mornings. Depending on the person and their time management, if they could take an hour and go down to the market and pick up the stuff and bring it back to the school, that would take a lot of responsibility (IP 12, 2010).

The interviewee stated additionally that the wages which the cooks currently receive are an impediment to their potential willingness to procure food. The interviewee added that "...for nine

dollars an hour not a lot of people are going to do that" (IP 12, 2010). This indicates how current wages affect the ability and willingness of school staff to participate in farm-to-school activity.

Finally, when asked about the time and resources required to prepare fresh local foods in the cafeteria after procurement, it was stated that many school staff do not have the requisite skills to prepare dishes from fresh ingredients. According to interview participants, this is a major reason why the school turns to the pre-prepared, processed meals (IP 7, 2010; IP 9, 2010; IP 12, 2010; IP 13). Indeed, as one school participant explains:

> ...it's a lack of skills and abilities on the part of the staff. And by no fault of their own. You look at these people; they're not making a lot of money. A lot of them are there because their kids are in the school. Sometimes when you're cooking for that many people you go for the easy, already peeled, already cut things. But sometimes with the highly packaged foods there's a higher cost (IP 9, 2010).

This quote also speaks to the relationship between staff wages and their ability and/or willingness to go above and beyond their job requirements to procure and prepare local foods. This is an important finding for any school looking to start a farm-to-school program.

4.3.2 Common Structural Constraints

The current way in which food is distributed and regulated is in itself often an impediment to local food procurement for many institutions. Indeed, in the current literature on farm-to-school programs, many structural barriers encountered by those interested in sourcing local foods are cited. The abovementioned study by Kloppenberg *et al.* (2008) found that many barriers faced by farm-to-school programs in Wisconsin related to the existing food supply chains, which were highly regulated and dealt in volumes too large for many smaller scale regional farmers. Kloppenberg *et al.* thus explain that this barrier is related to the larger way in which our food system is organized:

> [s]ome of these obstacles were 'structural' in the sense that they are a product of social organization operating outside of the limited domain of a particular school...or farm and

> are therefore not amenable to solution outside of larger changes in the overarching frameworks of policy or governance (Kloppenberg *et al.,* 2008, p 441).

Accordingly, schools often encounter barriers because the existing food distribution channels are not flexible enough to accommodate alternative methods of food procurement.

Institutional Scale

When discussing farm-to-school programs, and other institutional procurement programs involving local foods, interviewees reported that structural barriers often correspond to the scale of both institution and farm (IP 2, 2010; IP 7, 2010). Larger institutions have much higher volume requirements than smaller institutions. Therefore, they deal almost exclusively with large scale food distributors which transport food from processing facilities and large scale farms to the institutions themselves (IP 7, 2010). In this way, it is extremely difficult for large scale institutions to deal directly with small to medium sized farms. In this model, it is much more likely that a smaller farmer would sell produce not to the school, but to the master food distributor who would then supply the school (IP 2, 2010).

Nonetheless, there are also many barriers which face small-scale farmers in selling their food to the master distributors which supply larger institutions. A farm has to be producing on a large enough scale to make the purchase worthwhile for the distributor, as it is more cost efficient to purchase from producers dealing in large volumes. In this way, smaller scale farms are often excluded from local food procurement through food distributors and existing value supply chains. Indeed, as one interviewee explains,

> [w]hen you're talking about larger farms, and food distribution systems that can easily absorb those local products, I think that's a totally different ball game than what we've got here. Our farms are on such a small scale that the distributors are less likely to buy from them (IP 2, 2010).

Many larger schools in Nova Scotia contract the management of the cafeteria to commercial food service management companies[13]. These companies have existing regulations and standards with regards to food procurement and establishing purchasing relationships with food distributors.

One interviewee from Colchester County describes the challenges which face a large high school in the region with regards to local food procurement:

> '...we're talking about a couple of steps of removal from direct buying. You have the food service management company managing the cafeterias, and you have the food service management company contracting, or establishing a relationship with a food service distributor. And then there's the folks doing the ordering, they have to operate within those parameters. So they have to operate within the context of those relationships, so everything they do with respect to procurement has to fall within the parameters of that relationship and that food supply chain. There's less flexibility there because food service management companies have established models of doing business. (IP 7, 2010)

At the heart of this passage, the interviewee describes the "context" of existing institutional "relationships" as leading to less "flexibility" in the school food procurement model. As is evident from this passage, the existing food supply chains create a constricting framework within which to operate. As a result, those interested in buying local foods may feel discouraged by such structural barriers. Indeed, as another interviewee in Colchester County explains,

> ...you have individuals in that set up who are motivated to buy local, but who are restricted to do so by those relationships, because it's either not a priority from the food service management side of things, or it's not a priority to carry from the food distributor side of things (IP 8, 2010).

There are many challenges which face larger schools in their efforts to procure greater amounts of locally produced foods. Indeed, one of the reasons for success cited by participants in Hancock County was the high level of flexibility which results from dealing in smaller volumes directly with small scale farmers (IP 2, 2010; IP 4, 2010). Because the school cafeteria is managed independently and because the school does not rely solely upon their existing master

[13] Chartwells is one of the primary commercial food service management companies used by larger high schools in Nova Scotia, such the North Nova Education Center , the largest high school in the CCRSB.

distributor for the reasons described above, they are able to seek out produce from local suppliers to augment their existing orders. The school itself does not have high volume requirements and is thus able to turn to smaller scale producers in the region to procure seasonal items (IP 4, 2010). Kloppenberg *et al.* (2008) confirm this finding, noting that smaller schools often face fewer initial barriers than larger, more regulated schools:

> A lesson from the Wisconsin Homegrown Lunch (WHL) program is that it may be advantageous for farm-to-school programs to be initiated in smaller rather than larger schools. Discussions with a variety of smaller school district food services in our region indicate that many...have considerable flexibility in terms of labour and food preparation (Kloppenberg *et al.*, 2008, p 447).

Similarly, the structural barriers which face the school in Colchester County are quite different than those encountered by larger schools. The structural barriers which face the school in Colchester County are related to lack of food distribution for smaller suppliers and to seasonal supply.

Distribution

One of the most frequent barriers cited by interview participants was the need for a localized distribution system for small scale producers in the community (IP 12, 2010; IP 7, 2010; IP 8, 2010). The school cafeteria staff are already operating on a low budget and face existing time constraints (IP 12, 2010). The school therefore requires food to be delivered to the school. Not all producers in the area have delivery capabilities (IP 14, 2010). The local farmer who currently supplies the school with pork products has a refrigerated delivery van, one of the reasons why this is a successful procurement relationship (IP 12, 2010; IP 14, 2010). Issues of distribution and delivery are the most common challenges in developing farm-to-school programs (Kloppengerg *et al*, 2007). Accordingly, this factor must be addressed when developing opportunities for successful farm-to-school initiatives.

Seasonality

Issues of supply and seasonality also emerged from participant interviews. These themes are also extremely common in developing farm-to-school programs (Kloppenberg *et al.*, 2008; Joshi *et al*., 2008). In more northern climates which have only summer and fall growing seasons, the average school year and growing season do not overlap except for the spring and fall months. Thus far, the majority of reported start-up farm-to-school programs in New England procure local food only during these months, as greenhouses and cold storage facilities, and other infrastructure necessary to support localized food systems, are not common (Joshi *et al.*, 2008; IP 1, 2010). Therefore, the limited growing season in northern areas of North America is a major barrier to sourcing local food throughout the full school year. Although the school in Hancock County successfully sources local food during the spring and fall months only, interviewees in Colchester County expressed concern over establishing purchasing relationships with seasonal produce farmers for such a limited period of the school year (IP 12, 2010, IP 13, 2010).

4.3.3 Lack of Knowledge and Communication

Many participants in Colchester County noted that there is currently a lack of informational resources and knowledge available to interested stakeholders looking to begin farm-to-school activities in their communities (IP 7, 2010; IP 8, 2010; IP 10, 2010; IP 11, 2010; IP 14, 2010). Contrarily, school stakeholders in Hancock County were aided by a third party NGO who provided relevant information and facilitated communication between all interested parties (IP 1, 2010).

This key difference is reflective of larger patterns in Maine and Nova Scotia. Formal farm-to-school programs in Atlantic Canada are virtually nonexistent. Alternatively, in the Eastern United States, particularly within Maine, Vermont and New York, the farm-to-school

movement has taken a strong hold and has permeated many rural communities. According to the National Farm-to-School Network website[14], there are 14 schools involved in farm-to-school programs in three different school districts across Maine. The state of Vermont has a renowned farm-to-school program which was founded in 2000 called Food Education Every Day (FEED). FEED staff have worked with over 100 schools throughout the state of Vermont as liaisons between the farmers and cafeteria to help establish new purchasing relationships (Harmon, 2007). The state of New York boasts 110 estimated farm-to-school programs across 15 different school districts[15]. A report from Cornell University (2004) examined the effects which New York state farm-to-school cooking programs were having upon children's eating habits (Thonney, 2004). Evidently, farm-to-school programs in the north eastern United States have a strong social presence, attracting the attention of scholars and food activists alike. This awareness and capacity building around farm-to-school fosters communication and facilitates knowledge sharing among interested stakeholders.

Farm-to-School's Cultural Presence in Nova Scotia

In Nova Scotia, on the other hand, where farm-to-school programs have only just begun to take hold[16], there are fewer resources available for interested farm-to-school stakeholders. Additionally, the farm-to-school movement has not taken hold in Nova Scotia as part of the larger "buy local" social phenomenon which has been sweeping across North America in recent years. As such, there is not as much awareness, certainly not a "common culture", of farm-to-school programs and how they work. This is an important difference to take into account when examining the barriers faced in Colchester and Hancock County.

[14] See http://www.farmtoschool.org/state-home.php?id=25
[15] *Ibid*
[16] In Nova Scotia's Annapolis Valley Regional School Board, a "producer-supplier" committee has been established to address the barriers which prevent more locally grown food from entering the local schools (IP, 15, 2010).

The knowledge and opinions of stakeholders in Colchester County reflected this lack of cultural presence of farm-to-school programs and the consequent lack of resources available to interested stakeholders. In Colchester County, buying directly from producers within the community has only recently begun to be explored (IP 12, 2010, IP 13, 2010). Nonetheless, the catering society ensures that the school, and others in the region, get a certain percentage of locally produced food through the existing food distributor and from farm stands (IP 12, 2010).

The primary food distributor used by the school is owned and operated within the province and does attempt to carry Nova Scotia produced foods in the fall and spring (IP 12, 2010). However, most of this food comes from larger farms in Nova Scotia's Annapolis Valley, located hundreds of kilometres away. This does not allow for direct contact with farmers within the community. As was mentioned above, it is also difficult to ensure that food procured from larger scale distributors is actually locally produced, as the institution is one step removed from the local producers (USDA, 2005). For these reasons, in the current literature on farm-to-school programs, procuring local food through existing large scale distributors is often not the preferred method of bringing schools and farms together in meaningful purchasing relationships (USDA, 2005; Joshi *et al.*, 2007; Kloppenberg *et al.*, 2008).

Lack of Informational Resources

When the catering society procures goods from nearby farm stands, this is not generally considered to be time or cost effective, as the catering society staff are responsible for distributing the food to the school (IP 12, 210). When asked what additional steps could be taken to increase the amount of locally produced food in the school, it was noted that greater autonomy could be given to school staff to find local suppliers (IP 12, 2010). Because kitchen staff are already working on a tight budget and are only paid for a fixed number of hours per day, there is

not a lot of time to gain knowledge regarding existing local suppliers, their available products and their delivery capacity. Additionally, upper management staff in the school board and government do not perceive there to be existing resources or capacity for encouraging and facilitating farm-to-school programs in the school setting (IP 12, 2010, IP 10, 2010, IP 9, 2010). Regardless, participants are enthusiastic about the prospect of buying locally sourced food and open to finding a way forward. As one participant notes,

> ...how does – and I don't know the answer to this but this is what we foresee as a challenge – how does the farming community in [Colchester County] link with the catering society and create that link and provide her with what she needs, all within the required food safety standards. We need to make that work (IP 11, 2010).

To date, Colchester County does not have any formal resource guides or information sources specifically aimed at facilitating farm-to-school programs[17]. In areas where farm-to-school programs are more common place, such as the North Eastern United States, there are a multitude of guides and handbooks containing information tailored to meet the needs of interested stakeholders. For instance, the Finger Lakes Farm-to-Cafeteria (2009) program in New York State recently published an online resource guide entitled "How We Started a Farm-to-Cafeteria Program and How You Can Too" which provides information and recommendations based on the barriers and opportunities they encountered. The United States Department of Agriculture's Food and Nutrition Service in partnership with the National Food Security Coalition also recently released a farm-to-school resource guide entitled "Eat Smart Eat Fresh! A Guide to Buying and Selling Locally Grown Produce in School Meals" which includes information on various distribution models, how to work with farmers and strategies for local food preparation (USDA, 2005).

[17] Although there are no formal reference guides aimed at facilitating farm-to-school programs, the Nova Scotia Department of Agriculture's Select Nova Scotia campaign has created a database of regional farmers and their products.

Lack of Experience with Local Food Procurement

Aside from there being a lack of knowledge and resources available to interested stakeholders, there is also the perception that local food is not as "reliable" or "convenient" as conventionally sourced food from master distributors (IP 7, 2010; IP 8, 2010). Interestingly, although participants did not say directly that smaller scale local producers were "unreliable" or "inconvenient", this perception was implicit in statements regarding the existing food service model. As one participant notes,

> [f]rom a school point of view, when you're dealing with a very specific beginning and end of day, these foods need to get to the schools reliably, and food quality standards need to be met. And that's why the larger master distributors are often used, because of that perception of reliability and quality (IP 7, 2010).

The key word in this passage is "perception", as it indicates a lack of experience with farm-to-school programs. Indeed, because many schools in Colchester County do not deal directly with local farmers, there is an implicit perception that such dealings could be "inconvenient" and "unreliable". This is a key way in which the lack of cultural presence of farm-to-school programs manifests itself. Although other manifestations of the "buy local" movement have permeated Atlantic Canada, including renewed enthusiasm for farmer's markets (GPI*Atlantic*, 2008a) and "local fare" at restaurants and retail outlets (GPI*Atlantic*, 2008), farm-to-school programs have yet to become high profile.

4.3.4 School Food Policy Context

A salient issue to consider in conjunction with these barriers is the broader provincial policy context within which school stakeholders are working. While the issue of healthy eating among school aged children is a high priority at the provincial level, the procurement of local food is not. The abovementioned Health Promoting Schools (HPS) initiative does demonstrate that healthy eating and student health is a priority for Nova Scotia's school boards. However,

although the HPS initiative does receive funding from the provincial government for health related school programs, it is not a potential source of funding or support for the development of farm-to-school programs (IP 10, 2010). Assisting schools in procuring local foods falls outside the mandate of the HPS initiative.

One of the primary aims of HPS is to support the implementation of the 2009 Food and Nutrition Policy for Nova Scotia's Public Schools (FNPNSPS). This school food policy divides foods into groups of minimum, moderate and maximum nutrition. The majority of foods served in schools must be of maximum nutrition, which means that they must be under a certain percentage of fat and sodium (FNPNSPS, 2008). As of June 2009, all foods which fell under the category of "minimum nutritive value", including potato chips, candy bars and deep fried goods, began being phased out of Nova Scotia's public schools. Public schools across the province are currently facing barriers and challenges to implementing this policy; because schools are currently struggling with getting school aged children to eat healthier foods, as per the policy directives, school stakeholders appear to have little additional time and energy to focus on *where* such food is coming from. Although the barriers to farm-to-school activity cited by participants were budget constraints, structural constraints and a lack of knowledge and communication (IP 7-15, 2010), the current challenges facing the school nutrition policy implementation provide insight into why stakeholders are not placing high priority on local food procurement.

Participants from Colchester County noted that the stark changes brought about by the school nutrition policy are a very important factor in the current school food environment (IP 7, 2010; IP 8, 2010; IP 11, 2010; IP 12, 2010). One participant noted that the policy is being interpreted in different ways by different schools and different communities, which creates confusion amongst various school stakeholders (IP 9, 2010). Implementing the policy requires a

lot of communication between school administrators, parents and community members to establish what is permitted during school meals and school events and what is not. According to the school principal, this has affected the ability of volunteers from the community to work in the school during special events and fundraisers, because "...it's really tough to figure out what's appropriate and what isn't and what you're allowed to sell and cook and what you're not" (IP 13, 2010). The confusion stems from the relatively strict guidelines surrounding school food. The differing interpretations and confusion surrounding the school nutrition policy is a key challenge facing its implementation in Nova Scotia's public schools.

One participant from Colchester County noted that the new nutrition policy also clashes with some of the cultural aspects and expectations of the community. She explains that at certain extracurricular events, such as track-and-field day, people are "...just used to having...hotdogs and whatnot" (IP 12, 2010). She also explains that students and staff are used to having pizza, but that now it has to be "...cooked in a certain way" (IP 12, 2010), meaning that it must have whole wheat crust and must include healthy toppings.

The nutrition policy has also hampered certain school traditions, such as bringing children baked goods on special occasions. Indeed, one participant explains that

> schools have different cultures right? It was always the culture here that there were always cupcakes for birthdays and things like that but, not anymore! You know, Grammy comes in with cupcakes for the class on the day of her grandson's birthday and it's not allowed (IP 10, 2010).

Another participant explains how these traditionally enjoyed novelty foods, which are generally served at special events and during extracurricular activities, are now "*banned*" (IP 11, 2010). This emphatic language indicates a negative association with the nutrition policy guidelines.

Evidently, the issue of healthy eating at school is complicated, and extends far beyond the simple act of introducing healthier foods into the menu. There are many challenges facing the

implementation of the school nutrition policy, as its guidelines create confusion and sometimes clash with the traditions and expectations of a given community. The challenges surrounding policy implementation were not cited by interview participants as a barrier to local food procurement. Nonetheless, given the amount of time and energy required by the school nutrition policy implementation, the procurement of *local* food does not seem to be as high a priority at the provincial level. However, results from this study also indicate that stakeholders in Colchester County community support farmers in the region and wish to promote student health. The primary benefits of farm-to-school programs cited by participants fell under these two themes, emphasizing the potential for school food programs to foster community engagement with regional farmers (IP 2, 2010; IP 3, 2010) and the desire to change children's eating habits through positive exposure to healthy, locally sourced food (IP 1, 2010; IP 2, 2010; IP 11, 2010). This indicates that farm-to-school activity could increase as the school nutrition policy implementation becomes less demanding of time and resources.

4.4 Assets in Colchester County

Despite the barriers which were encountered by the school in Colchester County, a number of assets were found which may address them. In developing successful farm-to-school programs, it is important to gauge the interest and assets which can contribute to program development (Kloppenberg *et al.*, 2008). In discussing potential barriers, opportunities and benefits of farm-to-school with community stakeholders, important assets can be discovered, drawn out and built upon. This is commonly referred to as the Asset Based Community Development (ABCD) approach (Kretzmann *et al.*, 1993) and is based on the tenet that communities can drive the development process themselves by identifying and mobilizing existing but often unrecognized assets (Kretzmann *et al.*, 1993). ABCD draws attention to social

assets, including social relationships, informal networks and individual talents of community members (Mathie *et al.,* 2002). As discussed in much of the farm-to-school literature, serving local food in schools is as much about the dedication and passion of participating members as it is about the availability of local food (Bagdonis *et al.,* 2008; Izumi *et al*., 2010). It is important to draw attention to the social assets in areas looking to start farm-to-school programs. A thematic analysis of interview responses in Colchester County revealed four primary themes describing community characteristics which are potential assets in developing future farm-to-school initiatives: (1) openness to buying local; (2) connections between schools and communities; (3) interest in third party involvement; and (4) proximity of farms and schools.

4.4.1 Openness to Buying Local

Farming has been traditionally very prominent in many communities throughout Colchester County. Many interviewees in Colchester County were very open to the idea of buying products from farmers in the area (IP 9, 2010; IP 10, 2010; IP 11, 2010; IP 13, 2010; IP 14, 2010), connecting this to their own social ties within the county. As one participant from the school board explains,

> I have a farming background anyway, so I'm biased...I mean, how many of your friends grew up with that background? I think by having that connection [between farms and schools], it's going to give a greater sense of community... It's always great to support your local folks as opposed to sending your money elsewhere. So I think that if people saw that going into the schools, it would definitely be a positive thing (IP 9, 2010).

In this passage, it is interesting to note that the interviewee uses the term "local folks" as opposed to "producers" or "farmers", thus exemplifying a greater sense of kinship and community connection. Also, it is assumed by the interviewee that "people" would see local food in the school as a positive thing. By using such all encompassing terminology, the interviewee

indicates that not just direct stakeholders but the rural community at large would view farm-to-school programming in a positive light.

This close personal connection to the farming community, and the consequent openness to buying local, is an important asset in developing farm-to-school programs. Select literature indicates that farm-to-school programs in urban areas are based more upon ideological reasons than personal connections to the land. Indeed, in Bagdonis *et al.* (2008) comparative case study of farm-to-school programs in urban and rural areas, the authors note that in the urban setting, stakeholders wanted farm-to-school programs not because they felt a personal connection to the "local folks" producing food, but because they were concerned about the poor food environments and lack of food education in urban areas (Bagdonis *et al.*, 2008). Such reasons for seeking farm-to-school programming are important, but are perhaps not as personally motivating for stakeholders in facilitating farm-to-school programs when compared with personal and emotional connections with farming communities. The strong personal connections which stakeholders in Colchester County have within the rural community translate as openness to local food procurement. This is an important asset to draw upon when beginning farm-to-school programming.

4.4.2 Connection Between Schools and Communities

Another important social asset found in Colchester County was the close connection between schools and communities in Colchester County. Interviewees noted that the school plays an important role in the community, serving as a space to have fundraisers, concerts and other special events (IP 13, 2010, IP 12, 2010). It was also believed that rural schools hold particular importance in the community because they are responsible for the wellbeing of the future generation of the rapidly declining rural population (IP 8, 2010, IP 10, 2010). Accordingly,

interviewees from the school board noted that in recent years there have been increased levels of community interest in schools:

> ...schools and the school board are increasingly having to be more responsive to the community...People, not just parents, but people, are more interested in what's going on in the schools. So I think the community has much more of a voice than they used to have in terms of schools (IP 10, 2010).

This high level of community interest and involvement in the schools, as well as the increased responsiveness of the school board to community input, is an important asset in developing farm-to-school programs. The current farm-to-school literature shows that most successful programs involve the help of outside organizations and community volunteers (Bagdonis *et al*., 2008; Izumi *et al*., 2010). For instance, in the abovementioned case study of the Wisconsin Homegrown Lunch Program, the school partnered with a community based non-profit organization and a nearby university center to not only procure government funds but to facilitate locally sourced school meals and farm visits (Kloppenberg *et al*., 2007). The authors thus note the essential role that the outside community plays in the development of successful farm-to-school programs (Kloppenberg *et al*., 2007).

4.4.3 Interest in Third Party Involvement

The majority of interview participants in Colchester County expressed an interest in gaining the help of an outside community organization to facilitate further partnerships between the school and farmers in the surrounding area (IP 10, 2010, IP 11, 2010, IP 9, 2010, IP 7, 2010, IP 8, 2010). Third party involvement from outside organizations is thus far one of the most successful models that has worked for start-up farm-to-school programs. Indeed, third party involvement is an efficient way to overcome the lack of human resources, such as time and expertise, which face schools looking to source local food (USDA, 2005). As will be discussed

below, the farm-to-school program model used by the study school in Maine relied on an externally funded third party Farm-to-School coordinator to initiate contact between farms and schools in the area.

Interviewees in Colchester County recognize the potential benefits of third party involvement and thus expressed an interest in obtaining help from a third party individual or organization to assist in procuring local food for schools meals. Indeed, as one interviewee explained, "...in terms of having a person [to help make connections], you certainly might need to have somebody to serve as a kind of a middle person, as an intermediary, especially initially to get things going" (IP 10, 2010). This awareness of and openness to a proven viable model of farm-to-school programming is also an important asset which could potentially help with the development of future farm-school partnerships.

4.4.4 Proximity of Farms and Schools

Aside from the social assets listed above, the demographic and economic makeup of the community itself is an asset to the development of farm-to-school programs. Because the economic base of the community was traditionally centered on agricultural production, there are a number of small-scale, mixed-family farms in the area. When asked about the opportunities for direct marketing between farms and the schools in Colchester County more broadly, one interviewee explained how the rural nature of the region is an asset to farm-to-school program development:

> ...from a model point of view, that's certainly, in my opinion, an opportunity for the smaller schools. And [Colchester County] is a good example of that, where that could probably happen better in terms of being able to make the connection between the farm and the school because there are farms and schools in the area. It's more rural, there are schools within farming communities (IP 7, 2010).

The interviewee highlighted Colchester County as a particularly suitable location for the development of farm-to-school programs because it is predominantly a farming community. Indeed, within just 20 kilometres of the school, there are three organic vegetable producers and one meat producer[18].

As was discussed above, lack of a viable food distribution system for small scale farmers is often a major barrier which impedes schools from procuring local foods. Given the close proximity of the farms and schools in this community, there is less need for the development of an advanced centralized distribution network. Rather, it is more potentially feasible for farmers outside the community to cooperatively establish school deliveries (IP 13, 2010).

Evidently, Colchester County has a number of characteristics which could serve as potential assets in developing stronger farm-school partnerships. Indeed, openness to local food procurement, community connection with schools, interest in third party involvement and the close proximity of the school to local farmers in the region all represent assets which can be used to develop strategic opportunities for farm-to-school program development. In identifying such opportunities, it is also important to examine successful models in similar regions to ensure program feasibility. Accordingly, in the discussion below, the development and implementation of the successful farm-to-school program in Hancock County, Maine will be explained with reference to the potential opportunities in Colchester County, Nova Scotia. Based on the abovementioned demographic and geographic similarities between the two regions, the farm-to-school program characteristics in Maine can help identify feasible opportunities available to the school in Colchester County.

[18] See the Nova Scotia Department of Agriculture Colchester County Agricultural Profile 2006 <http://www.gov.ns.ca/agri/bde/econ/Colchesterprofile.pdf>

4.5 Farm-to-School Program Characteristics in Hancock County, Maine

Three primary themes were identified as relevant to the development and success of the Hancock County farm-to-school program: facilitation, willingness to change, and creativity. These themes are discussed below, with an analysis of their particular role in the success of program implementation and development. By examining various strategies which led to the success of the Hancock County farm-to-school program, insight can be gained into how stakeholders in Colchester County can address the abovementioned barriers and best utilize the identified community assets.

4.5.1 Facilitation

The Hancock County farm-to-school program officially began in 2005 with a farm-to-school workshop facilitated by Healthy Acadia, an NGO based out of Bar Harbour, Maine. At the time, staff members from Healthy Acadia had been aware of interest in farm-to-school programs, as they had been involved in a number of school garden projects in the area. This first workshop was hosted in partnership with the Community Food Security Coalition (CFSC), a national body which was looking to help facilitate pilot farm-to-school workshops in three parts of the country. The CFSC contacted Healthy Acadia with the idea to pilot the workshop, and based on the positive attitudes in the community towards farm-to-school activity, the Healthy Acadia staff were confident that the workshop would be successful (IP 4, 2010). The workshop brought together a broad range of approximately 75 interested farm-to-school stakeholders, including school administrators, farmers, school health officials, educators and government.

Information Gathering and Education

Healthy Acadia introduced the concept of farm-to-school to the potential stakeholders, which a staff member described during an interview as a "...very nascent emerging national

movement" even by 2005 (IP 2, 2010). To help identify opportunities in Hancock County, representatives from out of state farm-to-school programs were brought in to discuss existing successful strategies. Based on these successful strategies, one Healthy Acadia staff member explained that ideas were then put forth for how farm-to-school programs could work in the Hancock County region, with its relatively short growing season and small scale farms (IP 2, 2010).

By identifying the assets possessed by that particular community, as well as potential opportunities based on successful farm-to-school models in neighbouring states, the potential stakeholders were able to have a meaningful and realistic discussion around potential strategies for success (IP 1, 2010; IP 2, 2010; IP 4, 2010). Indeed, an interviewee explained the process as such:

> There was a combination of listening to schools that had started programs, you know, we tried to focus on local schools and we also brought in Farm-to-School people from other areas. We brought folks in from Vermont who are way ahead of what's happening in Maine and have been doing things for years...We also spent a lot of time in smaller groups brainstorming and thinking through issues and opportunities in Hancock County (IP 1, 2010).

Implicit in this description of the farm-to-school workshop is a belief in the importance of combining local, place specific knowledge with successful strategies from nearby locations.

This gathering of school board staff, government, farmers and interested community members at the initial farm-to-school workshop was identified by interview participants as a critical step in the development of what would become the very successful Hancock County farm-to-school program (IP 1, 2010; IP 2, 2010; IP 3, 2010; IP 4, 2010). Indeed, the exercise of having people sit down together and speak to each other on a common theme helps strengthen the social capital and foster the relationships necessary for farm-to-school program success.

Gauging Interest of Potential Stakeholders

In the year following the initial farm-to-school workshop, two schools - one of them being the Hancock County school used in this comparative case study - were identified by Healthy Acadia staff as candidates to develop farm-to-school programs involving the procurement of locally produced food directly from small scale farmers in the community. The schools were selected based on the level of interest and participation in the workshop topics and subsequent private consultations. An interviewee describes the enthusiasm of the school cafeteria staff in Hancock County: "I had talked to [the food service staff in Hancock County] about how she was interested in getting more local greens in the school and, well, why couldn't this happen? She was ready to work with the farmers" (IP 2, 2010).

Gauging stakeholder interest is essential for the success of a start-up farm-to-school program. As was mentioned above, the duties associated with farm-to-school programs, such as administrative responsibilities and increased cooking time, fall to school staff and therefore rely upon their dedication and commitment. The success or failure of a program is thus largely determined by the interest level of primary stakeholders, making the process of interest gauging an essential component of any start-up farm-to-school program.

The creation of the farm-to-school coordinator position took place through Healthy Acadia. A staff member recognized the need for such a position, and applied for grants from a number of funding bodies. The primary grant procured by Healthy Acadia for the farm-to-school coordinator position came from the federal government through Northeast Sustainable Agriculture Research and Education (SARE). SARE is a national program with four locations throughout the US. Northeast SARE is run through the University of Vermont, and is part of the USDA's National Institute for Food and Agriculture. This government funding program aims to

fund community projects aimed at increasing the economic viability of agriculture (USDA, 2008). Government funding programs can be a reliable source of funding for start-up farm-to-school programs in the US (Izumi *et al*., 2007).

The second primary source of funding for the farm-to-school coordinator position came from private donors and privately funded community foundations in Hancock County. Located on the easternmost point of Maine, Hancock County, including Bar Harbour and the Acadian National Park Region, also known as "Down East Maine", has a high level of private wealth. It is a particularly well developed area for tourists and wealthy inland cottagers during the summer. For instance, Nelson Aldrich Rockefeller, 41st vice president of the United States and grandson of the famous industrialist John D Rockefeller, was born in Bar Harbour, Maine. His father, John D. Rockefeller Jr., donated about 1/3 of the land in Bar Harbour for what is now Acadia National Park. The famous Rockefeller family has historically had summer homes in Hancock County, and is a regular contributor to the Maine Community Foundation (IP 4, 2010). Martha Stewart and JP Morgan also have extravagant homes outside Bar Harbour.

Interestingly, although family income levels are almost equivalent in Colchester County, Nova Scotia and Hancock County, Maine, the latter has a much higher level of private wealth in the form of well-to-do community members and private investors. Accordingly, for the creation of a farm-to-school coordinator position, Healthy Acadia had resources available in the form of private grants from the Maine Community Foundation, which is a private foundation with multiple donors (IP 2, 2010). As will be discussed below, this is a key difference between the two areas in terms of community assets and available resources.

The Role of the Farm-to-School Coordinator

Once the coordinator position had been established by Healthy Acadia staff through the procurement of public and private grants, the farm-to-school coordinator worked very closely with interested schools to help establish purchasing relationships with local farmers. School staff in Hancock County worked very closely with the Healthy Acadia farm-to-school coordinator to establish the initial contact with nearby farmers. In the beginning, the farm-to-school coordinator was responsible for establishing the purchasing relationships between farms in the area and the school in Hancock County. This included negotiating available products, prices, delivery schedules and availability (IP 3, 2010). Indeed, as explained by the farm-to-school coordinator,

> [a]ll I really needed to do was say 'school, here's the farm that wants to grow this food for you. Farm, here's this school that wants to buy from you, and let's all talk about what this means'...It was really that initial conversation that got people to the place where they could connect with each other. We also talked about, like 'what's the best time to call? What's the best time to deliver? How do deliveries work? Are you delivering after school hours?' (IP 2, 2010)

As is evident from this passage, establishing these initial contacts proved to be essential in the development of the farm-to-school program at the Maine school. As was discussed above, a major barrier in Colchester County is the lack of time and expertise on the part of school staff when it comes to establishing and sorting out the logistics of purchasing from local farmers in the area (IP 12, 2010; IP 13, 2010). The school in Hancock County faced similar human resource barriers, with school staff having little available time to go outside of their daily duties to establish purchasing relationships with local farmers (IP 3, 2010). The initial contact with nearby farmers provided by the farm-to-school coordinator overcame these barriers, thus successfully facilitating the purchasing relationships between the school and local producers.

The primary role of the farm-to-school coordinator is to facilitate dialogue between stakeholders and foster community connections that may otherwise not exist. Farm-to-school

programs are primarily about the social connections that exist between members of a given community (Joshi *et al*., 2007). Unlike the conventional food service models which rely upon autonomous business deals between an institution and large scale food service distributors, farm-to-school programs based on direct marketing between farms and schools rely upon connections between people in a particular geographical location. Accordingly, the most important role of the farm-to-school coordinator is to foster dialogue between community members so that each understands the others' needs. An interviewee in Hancock County eloquently explains this phenomenon, noting that to begin a successful farm-to-school program,

> ...it's all about identifying who the ready players are. That can happen without a mediator, but it generally doesn't....You need someone who knows the players and who understands about what both parties need to make a successful buying relationship – what the constraints are on schools and what the constraints are on farms (IP 1, 2010).

This third party involvement in the form of a farm-to-school coordinator to provide resources and foster communication between relevant stakeholders was considered critical for the success of the Hancock County farm-to-school program. Interestingly, after the initial contacts had been established between the school in Hancock County and nearby farms, direct involvement by the farm-to-school coordinator became less and less necessary (IP 1, 2010; IP 2, 2010; IP 4, 2010). Indeed, after the product availability and the delivery schedules were established, the school's staff was able to maintain regular contact with the local producers (IP 4, 2010). This indicates that more human resource requirements and subsequent funding for additional staffing requirements are greatest at the beginning of a farm-to-school program. Indeed, interviewees noted that establishing new contacts, routines and patterns of business is more labour intensive than maintaining them (IP 4, 2010; IP 3, 2010; IP 2, 2010). After the staff in Hancock County began to depend less upon the outside help of Healthy Acadia and the farm-

to-school coordinator, many changes took place within the school which fostered the continuing success of the farm-to-school program.

4.5.2 Willingness to Change

The primary theme which emerged from interview data in relation to the success of the farm-to-school program was a willingness on the part of school staff and other stakeholders to change their established patterns of behaviour and their daily routines. This involved a significant amount of dedication on the part of school staff (IP 3, 2010; IP 1, 2010). Just as importantly, it required the support of the school administrators, namely the school principal (IP 1, 2010). Indeed, as Healthy Acadia staff member noted, "...the real key in the small rural schools for us was finding that...sympathetic school administrator who would be supportive of doing things a little differently" (IP 1, 2010).

Once the head school administrator supported the farm-to-school project, it was crucial to have food service staff who were dedicated enough to go above and beyond the established daily routine (IP 1, 2010). Indeed, as one participant notes, "...it's only going to happen in the lunch room if the food service director makes it happen. You could try to force someone to make the changes, but it wouldn't be the same as having that enthusiasm behind it. You really need to have somebody that's motivated" (IP 3, 2010). In other words, school administrators need to give the "go ahead" for alternative food purchasing to occur, and food service directors need to be passionate enough to follow through on making such purchases happen. Stakeholders need to be willing to change and to feel as though they have enough support to do so. In this case school staff felt supported through the farm-to-school coordinator (IP 4, 2010).

4.5.3 Creativity

In order to make the farm-to-school program work initially, stakeholders had to look for creative ways to purchase, procure and prepare school meals (IP 1, 2010; IP 3, 2010). In terms of food distribution, many creative approaches were taken by school staff. For instance, during field trips to the farm which supplied the school vegetables, staff elicited student help in transporting food from the farm back to the school (IP 3, 2010).

Re-Thinking the Cost of Food

In terms of food preparation, stakeholders used creative methods of addressing the barriers related to food cost and human resource requirements (IP 4, 2010). A major barrier found in Colchester County was budgetary constraints because local food tends to be more expensive (IP 12, 2010). This was also an initial barrier in Hancock County (IP 2, 2010; IP 4, 2010). However, according to interviewees, creative usage of food and purchasing practices can help overcome such financial restrictions. Indeed, as one participant notes "...helping the consumer see pricing through different lenses has been part of the work and part of the challenge that helps them buy local" (IP 1, 2010). The participant is describing the hidden ways in which local foods can be cost effective. For instance, one school in the area found that using local carrots in school meals reduced food waste because the children preferred the flavour to conventionally sourced, highly processed 'mini carrots' (IP 12, 2010). Indeed, as one participant explains with regards to the prewashed and peeled 'mini carrots', "....there was a tremendous amount of food waste. The kids weren't really eating them. When they were buying local carrots, we found that they were consuming more because the kids liked the flavour of the carrots" (IP 1, 2010). This reduction in food waste translated into a reduction in overall product cost, thus making the local carrots comparable in price to the conventionally sourced carrots (IP 12, 2010).

According to the farm-to-school facilitators in Hancock County, helping school staff to think differently about the cost of food, and not just in terms of cost per pound, is the 'different lens' described above.

Student Involvement in Food Preparation

Aside from using creative procurement and pricing methods, the Hancock County farm-to-school program also found innovative ways to overcome the lack of sufficient human resources in preparing school meals. Especially in the fall, when the school receives the highest volumes of local food, the kitchen staff encourage parent volunteers from the community to help prepare school meals (IP 4, 2010). The use of community volunteers means that the school does not have to hire substitute staff, which is a "...big expense" (IP 4, 2010). Aside from outside volunteers, the school also began a cooking club, comprised of student volunteers from within the school itself. Students help the food service director with the preparation of school meals, and with duties such as writing the "daily specials" on a dry erase board in the cafeteria. It was noted that involvement in the cooking club creates an atmosphere of inclusiveness, cooperation and engagement which the students enjoy (IP 1, 2010; IP 3, 2010; IP 4, 2010). During the field visit to the school in the summer of 2009, it was observed that each student in the club had their own apron, which they personalized with markers.

Student Empowerment

Students were allowed to select the kitchen music during meal preparation. Allowing students such simple acts of autonomy makes them feel engaged and enthusiastic about meal preparation. As one participant notes, "...there's a lot of music and dancing and fooling around, but they also get their work done" (IP 4, 2010). The cooking club helps to overcome the lack of

human resource requirements by assisting with meal preparation. As one participant notes, the cooking club "...supports the production and labour end of the school food" (IP 1, 2010).

The cooking club has many additional benefits, including increased food education and hands on learning (IP 1, 2010; IP 3, 2010). As one participant explains, "...they get involved and they learn about food preparation and food safety. It's educational, it's fun" (IP 1, 2010). The cooking club also encourages more students to support the school cafeteria (IP 3, 2010; IP 4, 2010). As was discussed above, a budgetary constraint in Colchester County is that school food funds are dependent upon the sale of school meals. School staff are hesitant to make too many changes to the menu because they need the financial support of the students (IP 12, 2010). Interestingly, in Hancock County, although the food served is often 'unconventional' and includes fresh, whole foods (IP 3, 2010), the students are more supportive of the cafeteria because of the personal and social connections they have through the cooking club (IP 4, 2010). Indeed, as explained by a participant, "...the school children are getting more involved with making the food and learning about the food. It also means that their friends are more likely to try it. So it's a win-win situation" (IP 1, 2010).

Evidently, there are many components and characteristics of the Hancock County farm-to-school program. These fall under three primary themes - facilitation, willingness to change and creativity - which are associated with the farm-to-school program success. As was discussed above, based on the demographic and geographic similarities between the two case study sites in Maine and Nova Scotia, the key lessons drawn from the relevant farm-to-school program characteristics in Hancock County, Maine can help address the current barriers facing the Nova Scotian school in its effort to procure greater amounts of locally produced food. The abovementioned community based assets in Colchester County also provide insight into how the

current farm-to-school barriers can be addressed. In the discussion below, the lessons from the Hancock County farm-to-school program, as well as the community based assets in Nova Scotia, will be synthesized and discussed with reference to the relevant opportunities for building stronger connections between farms and schools in Colchester County, Nova Scotia.

4.6 Opportunities for Colchester County, Nova Scotia

When identifying viable opportunities, it is important that they relate to and address the barriers which currently impede success. The key barriers which currently face the school in Colchester County are 1) budget constraints, 2) structural barriers, and 3) lack of knowledge and communication between relevant stakeholders. While the first two barriers are commonly cited in the farm-to-school literature (Bagdonis *et al.*, 2008; Kloppenberg *et al.*, 2008), the third is not. This is likely because farm-to-school activity is culturally entrenched in the US where these other studies have been centered, whereas it is not a common element of the 'buy local' movement in Atlantic Canada, and is thus not yet culturally entrenched. As was discussed above, empirical farm-to-school case study research has not yet been conducted in Atlantic Canada, nor are farm-to-school programs commonplace. Therefore, the opportunities identified below will be applicable especially in areas which do not yet have high levels of farm-to-school activity or access to farm-to-school information resources.

4.6.1 Addressing Budget Constraints

The primary budget constraints are that local food is generally more expensive, school food funds are dependent upon student support and there is a lack of human resources to prepare fresh whole foods. In addressing the higher cost of local food, the most feasible approach is to start small and to think differently about pricing. A common misconception is that the goal of farm-to-school activity is to replace conventionally sourced food with local food (IP 2, 2010).

Especially when starting out, farm-to-school stakeholders in the Maine location noted the importance of beginning with just a few locally sourced products, as this is more cost effective and it allows all stakeholders to become familiar with the process and to have opportunity to negotiate (IP 1, 2010). As one interviewee from the Hancock County farm-to-school program explains,

> One of our biggest pieces of advice to schools is to start small, and to start with one or two products. Carrots and apples, for instance, seem to be very easy to store and very easy to work with. They're easy to grow in this climate, and they have a bit of a shelf life. So those tend to be products that we can work well with between local farms and local schools, and then branching out from those products. Those have been products that we've also been able to have the parties negotiate prices that are acceptable to each (IP 1, 2010).

School stakeholders also need to think about food costs more broadly than simply the price per pound (IP 1, 2010; IP 3, 2010). Local food can have the benefit of improved freshness and better taste, potentially making it more appealing to students and thus reducing costly food waste (IP 12, 2010). The other primary budgetary constraints — that school food funds are dependent upon student support and there is a lack of human resources to prepare fresh whole foods — are addressed in the following sections.

The Role of Students in Supporting the School Cafeteria

The primary source of school food procurement funds at the Colchester County school comes from the sale of school lunches to the students (IP 12, 2010). As such, the school food program is heavily reliant upon the financial support of its students. This is a very common predicament in Canadian public schools, which do not have federal government subsidies for school food service[19]. In the Hancock County school, student involvement in the lunch program, by way of the cooking club, increased the sale of food in the cafeteria (IP 3, 2010; IP 4, 2010).

[19] In the US, the abovementioned National School Lunch Program subsidizes school lunches for students whose family income is below a certain level. This additional source of funding reduces the pressure on school food service programs to make financial ends meet with sales from school lunches (IP 4, 2010).

Indeed, students felt connected and engaged in the school food process through the acts of cooking and writing the daily specials on the cafeteria's menu board (IP 4, 2010). Having increased student involvement in the preparation of school food could be a viable option for schools whose food service is financially reliant upon student buy-in. As long as students are not being paid for preparing meals, and as long as they are supervised by staff with food safety training, then there are no apparent regulatory barriers preventing the participation of students in 'cooking club' type activities (IP 1, 2010; IP 3, 2010; IP 4, 2010). Aside from encouraging students to support the school cafeteria, student volunteers are also a way to help address the lack of human resources in preparing fresh, local foods. As was mentioned above, preparation time was cited as a major barrier preventing the use of fresh whole foods in the school cafeteria on a regular basis (IP 12, 2010).

The Role of Government

In terms of additional sources of funding for supporting local food purchasing, stakeholders in Colchester County had varying opinions of where such funds could come from. Although many participants cited government funding sources (IP 12, 2010; IP 13, 2010; IP 14, 2010), it was noted that subsidizing local food procurement does not fall within mandates of the current government revenue sources for provincial public schools. Indeed, it was noted that the provincially funded Health Promoting Schools (HPS) program is responsible for funding initiatives aimed at supporting the implementation of the new Food and Nutrition Policy for Nova Scotia's Public Schools (FNPNSPS). Such initiatives focus primarily upon promoting healthy fresh food in schools. HPS receives funding from the Department of Education (DOE) and the Department of Health Promotion and Protection (HPP). The Chignecto Central Regional School Board (CCRSB), which encompasses Colchester County, currently receives roughly

$100,000 CA in annual funding from the provincial government to support HPS activities and programs (IP 11, 2010).

However, as interviewees report, providing funds to help support the purchase of local foods is beyond the scope of HPS funding for school food initiatives (IP 11, 2010). As one interviewee explains,

> ...the focus [of HPS] from a food piece is not about providing schools with money to augment their cafeterias. It's around healthy snacks, taste testing, supporting the implementation of the [FNPNSPS], etc. It's not around food security issues...we're not funded for that. We do provide schools with, um, there is a school for example that has a fruit of the month or a vegetable of the month, and they get fruit or veggie trays from us. But that's their HPS plan, and it's all interconnected to the physical activity piece. It's not just a standalone piece about feeding kids (IP 11, 2010).

Evidently, government funding for health promotion in schools is focused solely around the food items served in the schools, and does not concern itself with *where* such food items come from[20]. Other interviewees noted that it is unlikely that the provincial governments would fund school food procurement from local sources, as many funding programs are chronically underfunded (IP 7, 2010; IP 8, 2010). Accordingly, many public school programs are facing cutbacks as opposed to increased funding and development (IP 8, 2010).

HPS funding is unlikely to be a viable source for farm-to-school programming. However, it was noted that the county Health Authority may be a viable source for farm-to-school development grants (IP 9, 2010). The Health Authority is funded through the provincial Department of Health and offers community health development grants through Community Health Boards in each Health Authority. Projects funded through the Health Authorities must

[20] Although HPS funding is not available to assist schools in the purchase of local foods, this source of funds could potentially provide indirect support if pitched in creative ways through other health promotion objectives, such as a healthy food cooking club.

address one or more determinants of health and be focussed upon health promotion (CEHHA, 2010).

The income levels in Hancock and Colchester County are relatively comparable[21]. However, the farm-to-school program in Hancock County, Maine was largely funded through private community organizations (IP 2, 2010). Hancock County has higher levels of private wealth by virtue of wealthy community patrons and a community trust fund. Because Colchester County, Nova Scotia does not have access to the same kind of financial resources, public money through government grants are likely to be the primary resource in developing farm-to-school programs.

4.6.2 Government Facilitation

Aside from potential funding grants through the Health Authorities, the provincial government can play an important role as facilitator for interested stakeholders (IP 7, 2010; IP 8, 2010). Although it was noted that the impetus for farm-to-school programs must come from the individual schools themselves (IP 8, 2010), the provincial Department of Agriculture can play an important role as an information resource for school stakeholders interested in purchasing local foods. An interviewee in Nova Scotia explains the potential role of government in facilitating potential farm-to-school activity in this way:

> ...the interesting part...is whether the government, be it the Department of Agriculture of education, could play a role [in developing farm-to-school programs]. Now I think that absolutely they can play a role in making the connections. And in fact, one of the purposes of [a recent research report] was to make sure that [the Department of Agriculture] could collect a data base of the people who buy so that throughout the rest of the supply chain there could be a connection made...[The Department of Agriculture] has an understanding, at least from those [they've] interviewed, of who is doing the buying. So even if [the department] doesn't have a specific name, [it] knows where to go to get that. And that's one area that the government can facilitate if there's an interest. [It] know how those contacts can be made (IP 7, 2010).

[21] As noted above, the median family income in Hancock County is approximately $59,428 US (US Census Bureau, 2008). The median family income in Colchester County is $55,449 CA (Statistics Canada, 2006).

Gathering and sharing key information is a very important aspect of successful farm-to-school programs (IP 1, 2010; IP 2, 2010). The NGO which facilitates the Hancock County farm-to-school program created a resource guide for farm-to-school stakeholders which includes the contact information of local farmers interested in supplying schools, a full list of the food products they provide and the seasonal availability of such products (Albert-Knopp, 2007). Such resource guides can be key elements in helping interested farm-to-school stakeholders make the critical connections.

As was discussed above, there is openness on the part of the community in Colchester County to purchase local food, as many potential farm-to-school stakeholders come from rural farming backgrounds themselves and thus feel culturally connected to agriculture in the region (IP 9-13, 2010). Also, supporting and promoting regional Nova Scotia farmers is a key priority for the provincial Department of Agriculture (IP 7, 2010: IP 8, 2010). The abovementioned Select Nova Scotia campaign, which features a database of provincial producers, seasonal recipes and agricultural products, is a key way in which the Department of Agriculture has been raising awareness and promoting agriculture within the province.

There is a great opportunity to both develop farm-to-school resource guides, including information about interested local suppliers and product lists, and to have the guides be effectively used by interested potential farm-to-school stakeholders. The creation of farm-to-school resource guides would also address the lack of current knowledge and communication between relevant stakeholders, a major barrier uncovered during the course of this research. When asked about the current state of knowledge surrounding local purchasing within the school context, a participant in Colchester County notes that "...I wouldn't even know where to start. This is a certain area of expertise. You have to have those relationships with producers and have

somebody monitor it" (IP 11, 2010). The area of 'expertise' to which the interviewee refers is indeed the knowledge surrounding which local producers would be able and willing to deal with the school and what kinds of products they supply. This is an important factor for any community looking to develop stronger connections between potential farm-to-school stakeholders in a given community.

4.6.3 Third Party Involvement

As was discussed above, the school in Colchester County, Nova Scotia has a number of community assets which make the creation of a successful farm-to-school program a possibility. Similar to the study site in Hancock County, Maine, the community is quite rural and thus there are many farms within close proximity to the elementary school[22]. There was also an interest from relevant stakeholders for third party involvement to help build the on-the-ground connections between the individual school and neighbouring farms. Interviewees recognized the need for extra help in facilitating farm-to-school activity. As one interviewee explains, "[i]n terms of having a person, you certainly might need to have somebody to serve as a kind of a middle person, as an intermediary, especially initially to get things going" (IP 10, 2010).

Another opportunity in the Colchester County location is to work with a local community organization, such as the local 4H branch or the community centre, and apply for a federal or provincial government grant to create a farm-to-school coordinator position[23] (IP 9, 2010; IP 10, 2010). This would further address the lack of time and human resources on the part of school staff and provide the critical information and community connections needed to establish

[22] Within a 20 kilometre meter radius of the school, there are three produce farmers alone specializing in seasonal vegetables. The majority of farms in Colchester County are relatively small. According to the 2006 Colchester County Agricultural Profile, 151 of the county's 442 farms have gross farm receipts of under $10,000. 89 of the 442 farms fall under the second lowest classification by gross farm receipts, which is between $10,000 - $24,999 annually.

[23] Although a grant would not be financially sustainable, start-up costs of farm-to-school programs are likely to be much higher than long term costs (IP 2, 2010).

stronger relationships between the school and nearby farms. External third party involvement is a viable option for schools which face similar human resource and communication barriers.

A Shift in Thinking About School Food

Participants in Colchester County described how a greater commitment to using local foods would involve a much different way of relating to and thinking about school food service. As one participant noted, in many food service models there is little concern for what is available locally when creating menus (IP 10, 2010). Because the conventional food service distributors are able to provide a wide assortment of imported goods, a menu is created and then orders are placed with the distributor according to those menu decisions. However, when taking seasonality and local availability into account, this mentality must be reversed. As one participant explains,

> ...so I can see, if we'd be using farm type things, you know, what we'd be doing is the flip of what we're doing now. We would be saying 'what's available, and how much of it?', and now, based on this list of what we can provide, 'what are we going to put on our menu?' So that's an opposite way of looking at things (IP 13, 2010).

In this passage, the interviewee is describing the larger shift in thinking which must occur if efforts to increase farm-to-school activity are to be truly successful. Using regionally sourced food requires a much different purchasing approach than conventionally sourced foods which are available in wide varieties all year round.

As is evident from these findings, despite the current barriers which face the school in Colchester County from purchasing greater amounts of locally produced food, there are also a multitude of opportunities to address these barriers. These opportunities were identified by taking stock of community assets which could contribute to farm-to-school program success and by examining the successful strategies used by a school in Hancock County, Maine. In developing viable opportunities for farm-to-school program development, it is important to find

solutions which are both place specific and adapted to the needs of a particular community and which have been used and proven successful in comparable climates and locations.

Chapter 5: Discussion

Results from this study have potential implications for the development of stronger farm-school partnerships in Colchester County, Nova Scotia. In the following discussion, recommendations will be put forward based on the results of this comparative case study. The results of this study also have implications for the wider body of scholarly farm-to-school research. Accordingly, results will also be discussed with reference to the aforementioned literature and policy surrounding farm-to-school programs in North America.

5.1 Study Recommendations

There are a number of strategies available to school stakeholders in Colchester County, Nova Scotia for developing stronger farm-school partnerships. In the discussion above, these were grouped into three primary areas of opportunity: (a) addressing budget constraints both from within the school and from government resources, (b) increased government facilitation and knowledge sharing, and (c) third party involvement in program facilitation. The following recommendations are based on these areas of opportunity, taking into account the identified barriers and the successful strategies employed by stakeholders in the Hancock County farm-to-school program. It is hoped that these recommendations will be helpful not only for stakeholders in Colchester County, but for those public schools facing similar barriers elsewhere.

- Interested third party facilitators – such as local non-governmental organizations, not-for-profit organizations or government bodies – should identify possible sources of public funding for a grant to cover the start-up costs of developing a farm-to-school program. As noted by interviewees in Hancock County, the associated costs of farm-to-school programs are often greater during the initial phases of program implementation.

- Interested facilitators should fund an initial public meeting for potential interested parties. This will help gauge stakeholder interest and develop strategies which suit the needs of the community. As demonstrated by the Hancock County farm-to-school program, bringing together key farm-to-school stakeholders helps to foster communication and subsequent opportunities for developing site-specific programs.
- When beginning to purchase from local suppliers, start with a limited number and variety of products. As interviewees in Hancock County noted, this will be less cost intensive and will familiarize both parties with the process of direct marketing.
- Encourage student involvement in cafeteria activities to help increase the sale of school meals. As demonstrated in the Hancock County farm-to-school case study, allowing students to assist in the preparation of schools meals – including the design of the school menu board and a choice of kitchen music – can give children a sense of empowerment and involvement with respect to healthy school meals. Increased sale in school meals is a particularly important issue for schools whose food budget is dependent upon student support.
- Develop farm-to-school resource guides which include information about interested local suppliers, their product lists and delivery capabilities. Guides should also include information about school volume requirements as well as relevant school food regulations. The creation of farm-to-school resource guides would also address the lack of current knowledge and communication between relevant stakeholders, a major barrier uncovered in Colchester County where farm-to-institution purchasing is not common place.

5.2 Contributions to the Literature

As was discussed above, farm-to-school programs are proliferating in parts of the eastern United States. In the nearby region of Atlantic Canada where there are no formal farm-to-school programs, much can be learned by way of comparison to these successful initiatives. In farm-to-school research, it is commonplace to compare, contrast and learn from existing successful farm-to-school programs, as they can be used as lenses through which to examine the common challenges associated with the institutional procurement of local food (Bagdonis *et al.,* 2008). Similarly, it is important to learn from communities where these programs have not been successfully implemented.

This study revealed similar barriers to those described in the current literature, including price restrictions, seasonality, structural constraints and lack of human resources (Kalb *et al.*, 2004; Kloppenberg *et al.*, 2008). Kloppenberg *et al.* also found that structural constraints facing farm-to-school programs were related to the size of the participating schools and the farms. In the analysis of the Hancock County farm-to-school program, it was found that the school cafeteria staff played a crucial role in both initiating and sustaining farm-to-school activity. This result is consistent with Bagdonis *et al's* (2008) findings regarding the role of internal "champions" in facilitating farm-to-school programs.

Although the results from this study are consistent with much of the existing farm-to-school literature, unique findings were also revealed. In Nova Scotia, where there are few resources available for start-up farm-to-school programs, one of the primary and most common barriers cited by interview participants was a lack of knowledge and communication (IP 11, 2010; IP 12, 2010; IP 13, 2010). The existing farm-to-school research originates almost exclusively from the US (Strohbehn and Gregoire, 2001; Morris, 2002; Kalb, 2004; Vallainatos,

2004; Keeley, 2005; Allen, 2006; Joshi, 2006; Izumi, 2010; Kloppenberg *et al.*, 2008; Bagdonis *et al.*, 2008). By contrast, the findings from this study are more particular to Atlantic Canada where farm-to-school programs are not a common element of the buy local or healthy eating movements. These findings could be relevant in other parts of Canada where the absence of a National Farm to School Network and other forms of support commonly found in the United States leave stakeholders with few resources.

In Nova Scotia, there has been very little research which examines province-wide obstacles and opportunities for farm-school partnerships. To date, Murton's abovementioned 2004 report entitled "Food and Nutrition in Nova Scotia Schools" is one of the few available studies which examine the barriers to serving fresh locally produced food in Nova Scotia's public schools. Most of the current research surrounding farm-to-school programs in Nova Scotia has originated from the Annapolis Valley, where the Annapolis Valley Health Promoting Schools program has partnered with the Producer-Supplier Committee to examine the barriers and opportunities for supplying greater amounts of locally produced foods in local schools[24]. Further, there has been no research which examines the opportunities for farm-to-school in Colchester County.

Similarly, there is very little research which examines the potential for direct marketing from small scale local farms to public schools in Nova Scotia. One of the few recent studies which have explored the opportunities for the direct marketing of local foods in public schools was prepared in 2008 by the Atlantic Canadian Organic Regional Network (ACORN). The goal of that report is to identify the most effective way to move forward through specific actions to create and secure local organic markets within public institutions. Recommendations from the

[24] The farm-to-school research conducted in the Annapolis Valley is not available publically.

study included increased promotional and marketing material within public institutions and further research into alternative distribution networks (Richards, 2008).

Preliminary research in Nova Scotia points to public institutions as primary candidates for procuring local foods. In their abovementioned 2008 report, GPI*Atlantic* conducted a number of key informant interviews with small to medium sized farmers in Nova Scotia and P.E.I. Based on these interviews, a number of recommendations were made for how to improve farm economic viability. Included among these recommendations was the implementation of local food procurement in public institutions: "[We need] local procurement policies in businesses, retail stores, universities, schools, hospitals, and government agencies. This solution may be aided by escalating gas prices, as transportation becomes more expensive and local food thus more competitive" (GPI*Atlantic,* 2008a, pg iv).

Although it has been acknowledged that local food procurement policies in public institutions could be beneficial in the Nova Scotian context (MacLeod and Scott, 2007), little research has been conducted which examines the barriers and opportunities. In a recent article by Nova Scotian authors Carllson and Williams, this lack of research is acknowledged: "[f]or Farm-to-School programs, more research is needed to determine the specific benefits to students, schools and farmers, and...how to overcome obstacles" (Carllson and Williams, 2008). Given this significant gap in the current research, this study provides new knowledge regarding the obstacles and opportunities for farm-school partnerships in Nova Scotia.

Aside from providing specific knowledge about the Nova Scotian context, this research also provides new knowledge about farm-to-school programs in North America more generally. Based on the results of the comparative case study, it was determined that third party facilitation, through the creation of a farm-to-school coordinator, can help schools to overcome the human

resource and communication barriers which prevent farm-school partnerships. This study also found that increased student involvement in the preparation of school meals can make students more likely to purchase school meals, as they feel more included and empowered by being part of the process.

This information will be useful for interested community stakeholders working to improve the quality of student health and community wellbeing. As will be discussed below, because this study focuses specifically on institutional perspectives and mainly addresses obstacles and benefits to schools, further research is needed to address benefits and obstacles specific to students, parents, farmers and other community stakeholders.

Chapter 6: Conclusion

6.1 Summary of Research

This thesis began with three broad research questions:

- What are the barriers which face the Colchester County elementary school in its efforts to procure greater amounts of locally produced food?
- What resources (financial, infrastructure, human, knowledge based) are required for the success of the Hancock County Farm-to-School program successful? What is the role of the key stakeholders in facilitating the program?
- Does the Hancock County Farm-to-School program provide valuable insight for how to overcome the challenges faced in the Colchester County school? If so, how?

A summary of the primary results indicates how these research questions have been addressed in the thesis. The barriers which face the Colchester County school in its efforts to procure greater amounts of locally produced food were characterized by research participants during semi-structured interviews and were contextualized in a review of relevant policy and "grey literature" in Nova Scotia. The opportunities were also identified by research participants during semi-structured interviews. An analysis of the relevant community assets in Colchester County and the successful strategies utilized by stakeholders in the Hancock County farm-to-school program also helped to reveal the relevant opportunities for how to overcome the challenges faced by the Colchester County school in its efforts to procure greater amounts of locally produced food.

The barriers included budget constraints, structural constraints and a lack of knowledge and communication. The budget constraints included the perception that local food is more expensive to procure, school food funding is dependent upon student support in the cafeteria and a lack of funding to increase the human resources required to procure and prepare local foods.

The structural constraints included the lack of necessary distribution systems and issues of seasonality and supply. Finally, the lack of knowledge and communication was related to a lack of farm-to-school's cultural presence in Nova Scotia, a lack of informational resources and a lack of experience with local food procurement. An overview of the community assets in Colchester County revealed a wealth of resources to address these barriers, including openness to buying local, a feeling of connection between the school and the community, interest in third party involvement and the close proximity of farms and schools.

The resources required for the successful Hancock County farm-to-school program and the roles of the key stakeholders were analysed to draw out useful lessons and were identified primarily through semi-structured interviews with research participants. The three successful strategies employed by the key stakeholders include facilitation, willingness to change and creativity.

Facilitation proved to be of the most importance in the beginning stages of the farm-to-school program, with the creation of the farm-to-school coordinator position through a non-governmental organization. The farm-to-school coordinator engaged in preliminary information gathering and education, gauged the interest of potential stakeholders and acted as a liaison between farms and schools, bridging the communication gaps.

The second strategy employed by farm-to-school stakeholders in Hancock County was the willingness to change on the part of upper administrative staff to allow for alternate models of food procurement. According to cafeteria staff, the support of the school principal was needed for participation in the farm-to-school program.

Finally, a great deal of creativity was needed on the part of school staff and students to successfully implement the program. The most significant strategy in this regard was the

involvement of students in the preparation of school meals. This addressed the barrier of increased cooking time and energy required to prepare fresh, whole foods. Additionally, the students gained a sense of importance and empowerment from being involved with school meals.

These lessons from the Hancock County farm-to-school program, combined with the community based assets in Colchester County and the literature and policy review, provided insight for how to overcome the challenges faced in the Colchester County school. In terms of budget constraints, it was suggested that having increased student involvement in the preparation of school food could be a viable option for schools whose food service is financially reliant upon student buy-in. The school food funds from the Colchester County schools' catering society are generated 100% from the sale of student lunches. The Hancock County farm-to-school program proved that students felt more involved and empowered by their involvement in school meal preparation, and thus more likely to patronize the cafeteria. It was also suggested that local food procurement start small, beginning with one or two products so that all parties become acquainted with the process.

It was also recommended that the provincial government play a greater role in the knowledge dissemination and communication between interested stakeholders, including the creation of farm-to-school resource guides. Government grants through the Nova Scotia Department of Agriculture to fund a pilot project involving the creation of a farm-to-school coordinator position was also recommended. This would further address the lack of time and human resources on the part of school staff by providing the critical information and community connections needed to establish stronger relationships between the school and nearby farms. Relevant knowledge and insight regarding the role of third party facilitation was gained from the Hancock County farm-to-school program.

6.2 Study Limitations

Although this study did put forth a number of recommendations for how the Colchester County school can address the barriers facing local food procurement, it is important to recognize the limitations which exist in relation to the interpretations of study results. Case studies are necessarily limited to a particular setting during a certain period of time (Yin, 1994). The opinions of participants in Colchester County are not statistically representative of the opinions of Nova Scotians in other locations. Likewise, the opinions of participants in Hancock County are not representative of the general population in Maine. Rather, the opinions expressed by participants in each location helped to gain insight into the common challenges and opportunities which face school stakeholders in procuring local food, and thus to build on the wider body of farm-to-school knowledge.

The barriers, opportunities and recommendations put forth in this study do not represent the full scope or complexity of the economic factors facing either school, such as specific price points of conventionally versus locally sourced food or the exact budgets for school food procurement. Such information is difficult to attain, and in the case of wholesale producers, often confidential.

The aim of this study was to gain factual knowledge and opinions from the farm-to-school stakeholders involved in decision making and food purchasing. These included school staff, government employees, nongovernmental organization staff, school board staff and a farmer. In all, 14 interviews were conducted, with nine in Colchester County and five in Hancock County. Because this study aimed to uncover the barriers and opportunities facing the Colchester County elementary school, interviews in each location targeted school staff, school board staff and third party facilitation staff. This study excluded food distributors, school

children, parents and outside community groups. Interpretation of study results should therefore take into account that data collection was limited to the opinions and information gathered from direct school and facilitation stakeholders.

6.3 Future Research Needs

This comparative case study of farm-to-school programs offers insight into the barriers and opportunities faced by schools in the procurement of local food. However, this study was limited in scope to direct farm-to-school stakeholders. There are many gaps which exist in the knowledge surrounding the social and economic impacts of farm-to-school programs and the effects of farm-to-school programs on families and communities. This is largely due to the nascent stage of research and evaluation in this field. As was mentioned above, most of the current farm-to-school research has thus far originated from the United States. Also, there are relatively few published academic studies examining farm-to-school programs; the majority of farm-to-school research exists in the "grey" literature.

Research participants in Hancock County provided anecdotal evidence that students participating in the farm-to-school programs would often tell their parents about farm visits and school meals. Future research could target the families of children participating in farm-to-school programs to quantify and evaluate the changes brought about by farm-to-school programs. As Joshi and Azuma (2009) point out in their review of farm-to-school feasibility studies, few current studies document farm to school impacts from the parent perspective. Indeed, they explain that "...increasingly, parent education is becoming a key component of farm to school, and its impacts need to be studied further to understand the positive ripple effects of farm to school on families and communities" (Joshi and Azuma, 2009, p 55).

The economic impact of farm-to-school programs on farmers is also an area that needs further research and evaluation. A report released through the University of Minnesota (Haynes, 2009) found that there is little reliable research examining such economic impacts, and those which do provide mixed results. Joshi and Azuma (2009) also found that exact and reliable data on the exact economic impact of farm-to-school programs on participating farmers is limited. Izumi (2008) also notes that few studies have examined the potential of school food service to provide a viable market opportunity for farmers. Future farm-to-school research in Nova Scotia could target the few farmers involved in farm-to-school activity to gauge the economic impacts. In addition to the economic impacts on farmers, the perspectives and input from farmers is also a pertinent research opportunity. Thus far, the only academic study which examines the perspectives of farmers was conducted by Izumi *et al*. (2010) entitled "Market diversification and social benefits: Motivations of farmers participating in farm to school programs". This study examines only American farmers, and could thus be built upon from a Canadian perspective.

Finally, this study excluded the opinions and input from students involved in farm-to-school programs. The factors responsible for maintaining high participation numbers in the Hancock County farm-to-school program from a student perspective are left un-investigated. In the wider body of farm-to-school research and literature, this is also an area which requires further investigation. Joshi *et al.* (2009) explain that studies highlighting the various kinds of interventions on children's food choices are needed to understand the components of farm-to-school. They argue further that more data are needed about what dietary changes can be facilitated and sustained in home settings and whether or not there is a causal relationship with the establishment of a farm-to-school program (Joshi *et al.*, 2009, p 241).

There are a broad range of possible research opportunities that could build upon this comparative case study to develop a more concrete picture of farm-to-school activity in North America. This relatively new and emergent social phenomenon requires further investigation and inquiry to better understand the potential impacts of farm-to-school related activity on children, farmers and wider communities.

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Appendix A: Email/Telephone Recruitment Script (Hancock County)

Dear [name of potential participant],

My name is Chloe Kennedy and I am a graduate student at Dalhousie University. As part of my Master's of Environmental Studies degree, I am undertaking a study on the feasibility of implementing a Farm-to-School program in Nova Scotia, Canada. I am hoping to find out how to overcome the current obstacles which prevent greater amounts of locally produced food from being served in Nova Scotia's public schools. This research is being supervised by Dr. Karen Beazley.

For this project, I am planning to conduct in-depth, semi-structured interviews with those who are directly involved in the Hancock County Farm-to-School program. As an active participant in the Hancock County Farm-to-School program, I would greatly appreciate an opportunity to talk with you about the successes and challenges which you perceive with regards to the program. The interview will take place at a time and place of your convenience and should take about an hour to an hour and a half of your time. The interview will be audio-taped with your permission. Would you be available for an interview between (dates_____)? If so, please let me know a convenient time and place for us to conduct an interview.

I would be happy to answer any questions that you might have about this study.

Sincerely,

Chloe Kennedy
Master of Environmental Studies Student
School for Resource and Environmental Studies
Dalhousie University, Halifax, NS
Email: chloe.kennedy@dal.ca
Phone: 902-429-7102

Appendix B: Email/Telephone Recruitment Script (Chignecto Central School Board Staff)

Dear [name of potential participant],

My name is Chloe Kennedy and I am a graduate student at Dalhousie University. As part of my Master's of Environmental Studies degree, I am undertaking a study on the feasibility of implementing a Farm-to-School program in Nova Scotia, Canada. I am hoping to find out how to overcome the current obstacles which prevent greater amounts of locally produced food from being served in Nova Scotia's public schools. This research is being supervised by Dr. Karen Beazley.

For this project, I am planning to conduct in-depth, semi-structured interviews with various key informants in Nova Scotia from the provincial government, school boards and local farms. I will also be conducting interviews with those who are directly involved in the Hancock County Farm-to-School program, located in Hancock County, Maine.

As a member of the Chignecto School Board staff, I would greatly appreciate an opportunity to talk with you. The interview will take place at a time and place of your convenience and should take about an hour to an hour and a half of your time. The interview will be audio-taped with your permission. Would you be available for an interview between (dates_____)? If so, please let me know a convenient time and place for us to conduct an interview.

I would be happy to answer any questions that you might have about this study.

Sincerely,

Chloe Kennedy
Master of Environmental Studies Student
School for Resource and Environmental Studies
Dalhousie University, Halifax, NS
Email: chloe.kennedy@dal.ca
Phone: 902-429-7102

Appendix C: Email/Telephone Recruitment Script (Nova Scotia Farmers)

Dear [name of potential participant],

My name is Chloe Kennedy and I am a graduate student at Dalhousie University. As part of my Master's of Environmental Studies degree, I am undertaking a study on the feasibility of implementing a Farm-to-School program in Nova Scotia, Canada. I am hoping to find out how to overcome the current obstacles which prevent greater amounts of locally produced food from being served in Nova Scotia's public schools. This research is being supervised by Dr. Karen Beazley.

For this project, I am planning to conduct in-depth, semi-structured interviews with various key informants in Nova Scotia from the provincial government, school boards and local farms. I will also be conducting interviews with those who are directly involved in the Hancock County Farm-to-School program, located in Hancock County, Maine.

As a food producer in Nova Scotia, I would greatly appreciate an opportunity to talk with you. The interview will take place at a time and place of your convenience and should take about an hour to an hour and a half of your time. The interview will be audio-taped with your permission. Would you be available for an interview between (dates _____)? If so, please let me know a convenient time and place for us to meet.

I would be happy to answer any questions that you might have about this study.

Sincerely,

Chloe Kennedy
Master of Environmental Studies Student
School for Resource and Environmental Studies
Dalhousie University, Halifax, NS
Email: chloe.kennedy@dal.ca
Phone: 902-429-7102

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Appendix D: Email/Telephone Recruitment Script (Nova Scotia Department of Agriculture)

Dear [name of potential participant],

My name is Chloe Kennedy and I am a graduate student at Dalhousie University. As part of my Master's of Environmental Studies degree, I am undertaking a study on the feasibility of implementing a Farm-to-School program in Nova Scotia, Canada. I am hoping to find out how to overcome the current obstacles which prevent greater amounts of locally produced food from being served in Nova Scotia's public schools. This research is being supervised by Dr. Karen Beazley.

For this project, I am planning to conduct in-depth, semi-structured interviews with various key informants in Nova Scotia from the provincial government, school boards and local farms. I will also be conducting interviews with those who are directly involved in the Hancock County Farm-to-School program, located in Hancock County, Maine.

As a member of the Nova Scotia Department of Agriculture, I would greatly appreciate an opportunity to talk with you. The interview will take place at a time and place of your convenience and should take about an hour to an hour and a half of your time. The interview will be audio-taped with your permission. Would you be available for an interview between (dates _____)? If so, please let me know a convenient time and place for us to meet.

I would be happy to answer any questions that you might have about this study.

Sincerely,

Chloe Kennedy
Master of Environmental Studies Student
School for Resource and Environmental Studies
Dalhousie University, Halifax, NS
Email: chloe.kennedy@dal.ca
Phone: 902-429-7102

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Appendix E: Consent Form for Obtaining Oral Consent Prior To Telephone Interviews

(To be read to study participants prior to telephone interviews. NOTE: parts of this script will apply differently to different participants. Therefore, only parts which apply to the interviewee in question will be read)

(To be read by the Principal Investigator)

Your participation in this study is voluntary and you may withdraw from the study at any time. I will read you a short description of the study which tells you about any risks, inconvenience, or discomfort which you might experience. Participating in the study might not benefit you, but we might learn things that will benefit others. You should discuss any questions you have about this study with me, as I am the Principal Investigator for this project. I will conduct the interviews, transcribe the audio files, and analyze the transcripts. No other researcher will have access to the audio files or transcripts.

The purpose of this study is to gather information about the obstacles which currently prevent greater amounts of locally produced food from being served in Nova Scotia's public schools. This study aims to build upon the existing body of knowledge regarding the feasibility of farm-to-institution marketing in Nova Scotia.

This research will involve a comparative case study with a successful Farm-to-School program in Hancock County, Maine. At least five interviews will take place with key informants from the Hancock County Farm-to-School program, including members of community action groups and participating nearby farms. In Nova Scotia, at least twenty-five key informant interviews will take place with participants from school boards, government and small scale organic farms. With permission from the study participants, interviews will be digitally recorded and transcribed. The transcripts of these interviews will be analyzed by Chloe Kennedy to find common themes among the responses. Results will be presented in an academic thesis, and may be communicated in academic articles and at academic conferences. A short summary of study results may also be sent by email to study participants upon request.

You may participate in this study if you are either a) directly involved in the Hancock County Farm-to-School program, b) a member of the Nova Scotia provincial government, a member of a school board in Nova Scotia, or an organic farmer in Nova Scotia or c) have a proven knowledge of the barriers which prevent greater quantities of local organic produce from being served in Nova Scotia's public schools.

If you are involved in the Hancock County Farm-to-School Program, you will be asked to participate in one (1) semi-structured telephone interview with me, the Principal Investigator. This interview is expected to take between an hour and an hour and a half to complete.

If you are a participant from the Nova Scotia government, school board or local farm, you will be asked to participate in one (1) semi-structured telephone interview with me, the Principal Investigator. The interview is expected to take between an hour and an hour and a half to complete.

This study is expected to involve minimal risk. However, if you feel discomfort at any time, you may decline to answer questions and you may withdraw from the study at any time. The information you give during your interview will not be used by any party or organization other than the Principal Investigator.

No direct benefits are anticipated for this study. However, you will likely gain further knowledge about the farm-to-School program. The knowledge gained during the process and outcome of this study could help you to understand how to either initiate or improve existing Farm-to-School programs.

As the Principal Investigator, I will make sure that the anonymity of all interviewees is protected throughout their participation in this study. With your permission, anonymous direct quotations will be included in the presentation of final results. Direct quotations included in the final results will not contain information that may indirectly identify you as the speaker.

Only I, the Principal Investigator, will hear the recordings of the interviews. Audio files will be destroyed once they are transcribed. Only I will have access to electronic files containing

transcribed interviews and focus groups. Your name will not be associated with the audio files or transcripts of the interviews.

The written transcripts of the interviews from this study will be kept in a locked filing cabinet at the School for Resource and Environmental Studies at Dalhousie University for at least five years before being destroyed as required by the Dalhousie University Policy on Research Integrity.

If you have any questions about this study, please contact me, Chloe Kennedy, by phone at 902-429-7102 or by email at chloe.kennedy@dal.ca.

If you have any difficulties with, or wish to voice concern about, any aspect of your participation in this study, you may contact Patricia Lindley, Director of Dalhousie University's Office of Human Research Ethics Administration, for assistance at (902) 494-1462, patricia.lindley@dal.ca.

ORAL CONSENT PAGE 1 OF 2

Consent to participate in the study

Please consider the following statement: "I understood the explanation of this study. I have been given the opportunity to discuss it and my questions have been answered to my satisfaction. I hereby consent to take part in this study. However I realize that my participation is voluntary and that I am free to withdraw from the study at any time". If you agree with this statement, please let me know by saying YES
[ACTION: ***Interviewer***] Circle: YES or NO

If you agree to be in this study, please let me know by saying YES.
[ACTION: ***Interviewer***] Circle: YES or NO

[If YES] Thank you for agreeing to participate in this study. Next, I would like to obtain your agreement to digitally-record my questions and your responses.

If you agree to having your responses **digitally-recorded** , please let me know by saying YES.
[ACTION: ***Interviewer***] Circle: YES or NO

Participant's Name (Written by the Investigator), Signature of Investigator

_____, _____

Date and Time (Written by Investigator):

_____

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Consent for use of direct quotations

If you agree to allow the researcher to use direct quotations from this interview in writing and in presenting study results, please let me know by saying YES.
[ACTION: ***Interviewer***] Please circle: YES or NO

[If YES] Thank you for agreeing to allow the researcher to use direct quotations from this interview

Participant's Name (Written by the Investigator), Signature of Investigator

_____, _____

Date and Time (Written by Investigator):

_____

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Appendix F: Consent Form for Obtaining Written Consent Prior To In-Person Interviews

Title of the study
A Feasibility Study for Implementing Farm-to-School Programs in Nova Scotia, Canada.

Principal investigator
Chloe Kennedy
Master's of Environmental Studies Candidate
School for Resource and Environmental Studies
Dalhousie University
Email: chloe.kennedy@dal.ca
Phone: 902-429-7102

Academic Supervisor
Dr. Karen Beazley, Dalhousie University

Introduction

We invite you to take part in a research study being conducted by Chloe Kennedy, who is a graduate student at Dalhousie University, as part of her Master's of Environmental Studies degree. Your participation in this study is voluntary and you may withdraw from the study at any time. The study is described below. This description tells you about any risks, inconvenience, or discomfort which you might experience. Participating in the study might not benefit you, but we might learn things that will benefit others. You should discuss any questions you have about this study with Chloe Kennedy.

Purpose of the study

The purpose of this study is to gather information about the obstacles which currently prevent greater amounts of locally produced food from being served in Nova Scotia's public schools. This study aims to build upon the existing body of knowledge regarding the feasibility of farm-to-institution marketing in Nova Scotia.

Study design

This research will involve a comparative case study with a successful Farm-to-School program in Hancock County, Maine. At least five interviews will take place with key informants

from the Hancock County Farm-to-School program, including members of community action groups, the Mount Desert School Department and participating organic farms. In Nova Scotia, at least twenty-five key informant interviews will take place with participants from school boards, government and small scale organic farms. With permission from the study participants, interviews will be digitally recorded and transcribed. The transcripts of these interviews will be analyzed by Chloe Kennedy to find common themes among the responses. Results will be presented in an academic thesis, and may be communicated in academic articles and at academic conferences. A short summary of study results may also be sent by email to study participants upon request.

Who can participate in the study

You may participate in this study if you are either a) directly involved in the Hancock County Farm-to-School program, b) a member of the Nova Scotia provincial government, a member of a school board in Nova Scotia, or an organic farmer in Nova Scotia or c) have a proven knowledge of the barriers which prevent greater quantities of local organic produce from being served in Nova Scotia's public schools.

Who will be conducting the research

Chloe Kennedy is the Principal Investigator for this project. She will conduct the interviews, transcribe the audio files, and analyze the transcripts. No other researcher will have access to the audio files or transcripts.

What you will be asked to do

If you are involved in the Hancock County Farm-to-School Program, you will be asked to participate in one (1) in-person semi-structured interview with the Primary Investigator. This interview will be conducted at a time and place agreed upon between you and the Principal Investigator. The interview is expected to take between an hour and an hour and a half to complete.

If you are a participant from the Nova Scotia government, school board or local farm, you will be asked to participate in one (1) semi-structured telephone OR in-person interview—depending on your location within the province—with the Principal Investigator. The interview is expected to take between an hour and an hour and a half to complete.

Possible risks and discomforts

This study is expected to involve minimal risk. However, if you feel discomfort at any

time, you may decline to answer questions and you may withdraw from the study at any time. The information you give during your interview will not be used by any party or organization other than the Principal Investigator.

Possible benefits

No direct benefits are anticipated for this study. However, you will likely gain further knowledge about the farm-to-School program. The knowledge gained during the process and outcome of this study could help you to understand how to either initiate or improve existing Farm-to-School programs.

Confidentiality and anonymity

The Principal Investigator will make sure that the anonymity of all interviewees is protected throughout their participation in this study. With your permission, anonymous direct quotations will be included in the presentation of final results. Direct quotations included in the final results will not contain information that may indirectly identify you as the speaker.

Only the Principal Investigator will hear the recordings of the interviews. Audio files will be destroyed once they are transcribed. Only the Principal Investigator will have access to electronic files containing transcribed interviews and focus groups. Your name will not be associated with the audio files or transcripts of the interviews.

The written transcripts of the interviews from this study will be kept in a locked filing cabinet at the School for Resource and Environmental Studies at Dalhousie University for at least five years before being destroyed as required by the Dalhousie University Policy on Research Integrity.

Questions

If you have any questions about this study, please contact Chloe Kennedy by phone at 902-429-7102 or by email at chloe.kennedy@dal.ca.

Problems or concerns

If you have any difficulties with, or wish to voice concern about, any aspect of your participation in this study, you may contact Patricia Lindley, Director of Dalhousie University's Office of Human Research Ethics Administration, for assistance at (902) 494-1462, patricia.lindley@dal.ca.

SIGNATURE PAGE 1 OF 2

Title of the study
Could Nova Scotia's Public Schools be Serving More Locally Produced Food? A Feasibility Study for Implementing Farm-to-School Programs in Nova Scotia, Canada.

Consent to participate in the study
I have read the explanation about this study. I have been given the opportunity to discuss it and my questions have been answered to my satisfaction. I hereby consent to take part in this study. However I realize that my participation is voluntary and that I am free to withdraw from the study at any time.

_____ _____
Signature of research participant Date

_____ _____
Signature of researcher obtaining consent Date

Consent For Audio Recording
I hereby consent to allow this interview to be audio recorded.

_____ _____
Signature of research participant Date

_____ _____
Signature of researcher obtaining consent Date

SIGNATURE PAGE 2 OF 2

Consent for use of direct quotations

I hereby consent to allow the researcher to use direct quotations from this interview in writing and presenting study results. I understand that these quotations refer to my location (urban or rural) but will not refer to my name.

_____ _____

Signature of research participant Date

_____ _____

Signature of researcher obtaining consent Date

Appendix G: Node Trees

Figure G.1: Perceived Benefits Node Tree

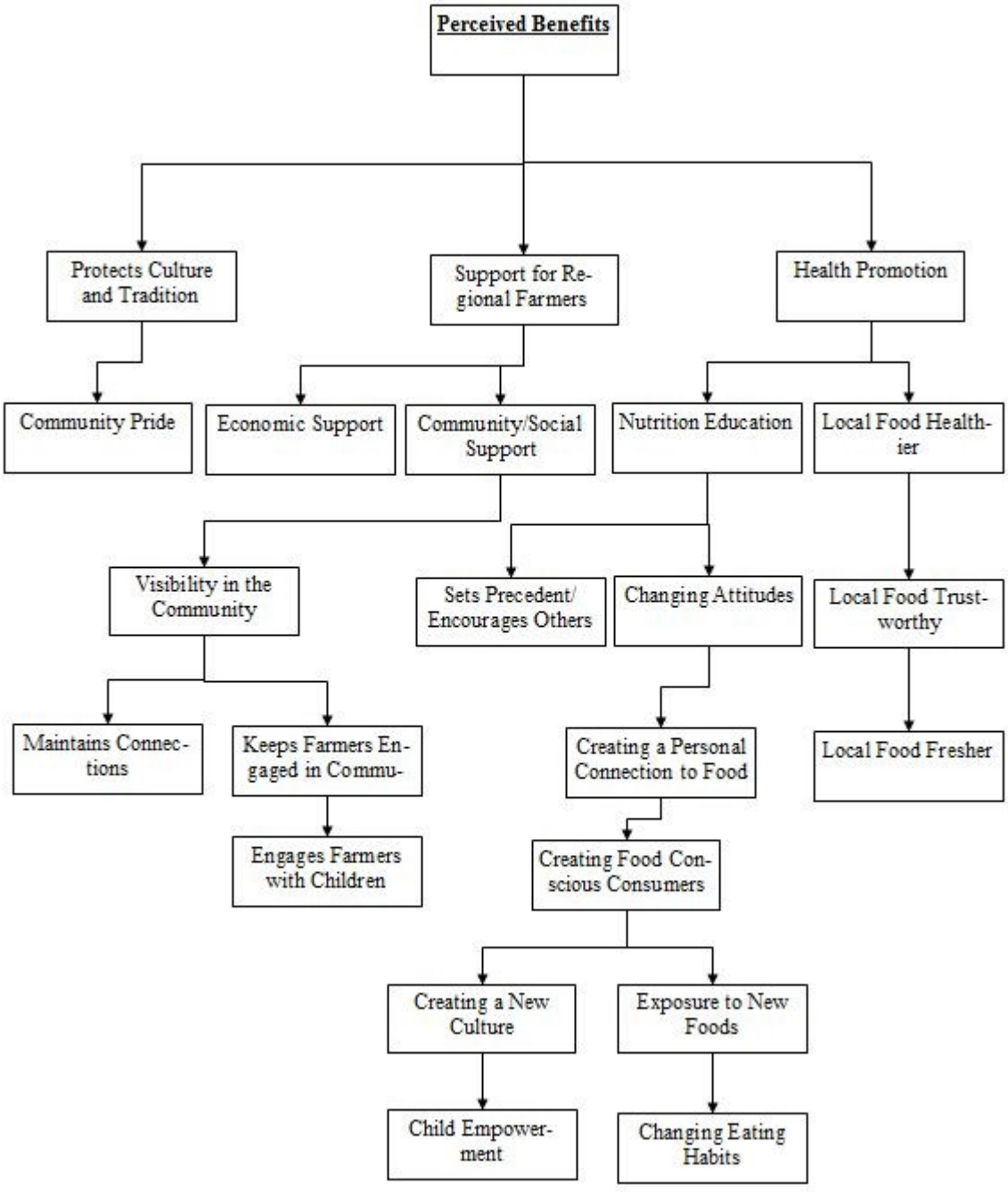

Figure G.2: Barriers Node Tree

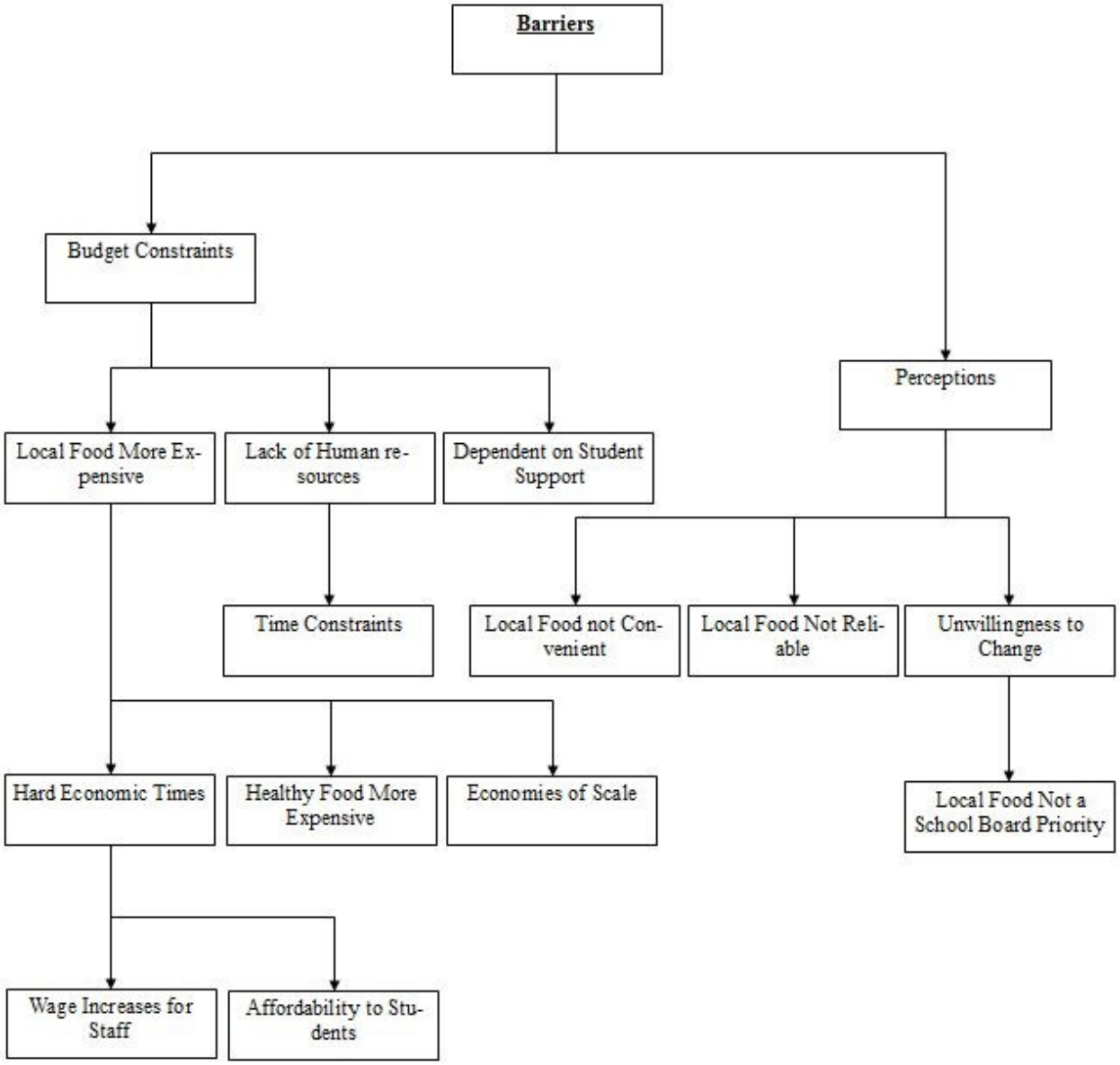

Figure G.2: Barriers Node Tree (Continued)

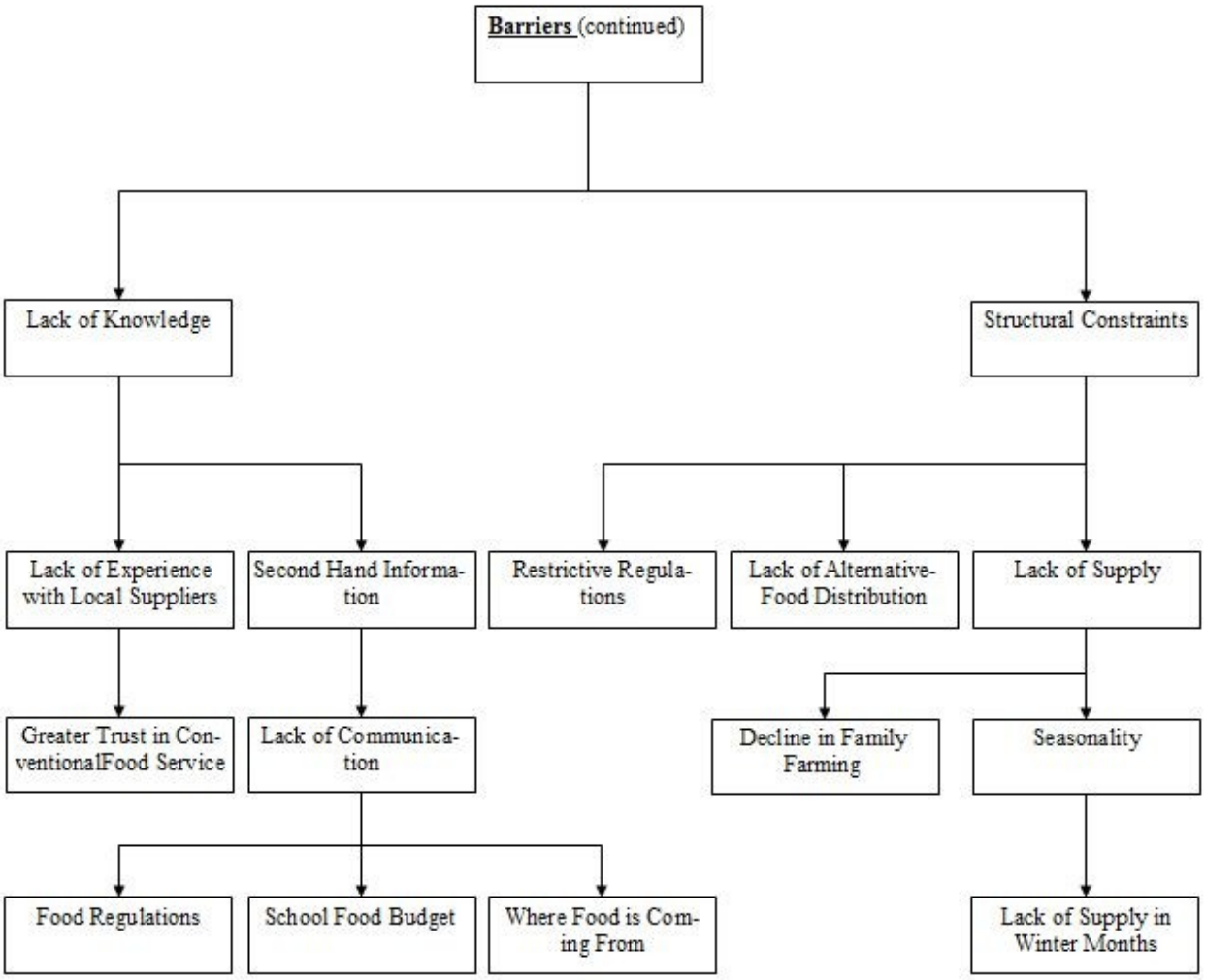

Figure G.3: Program Characteristics Node Tree

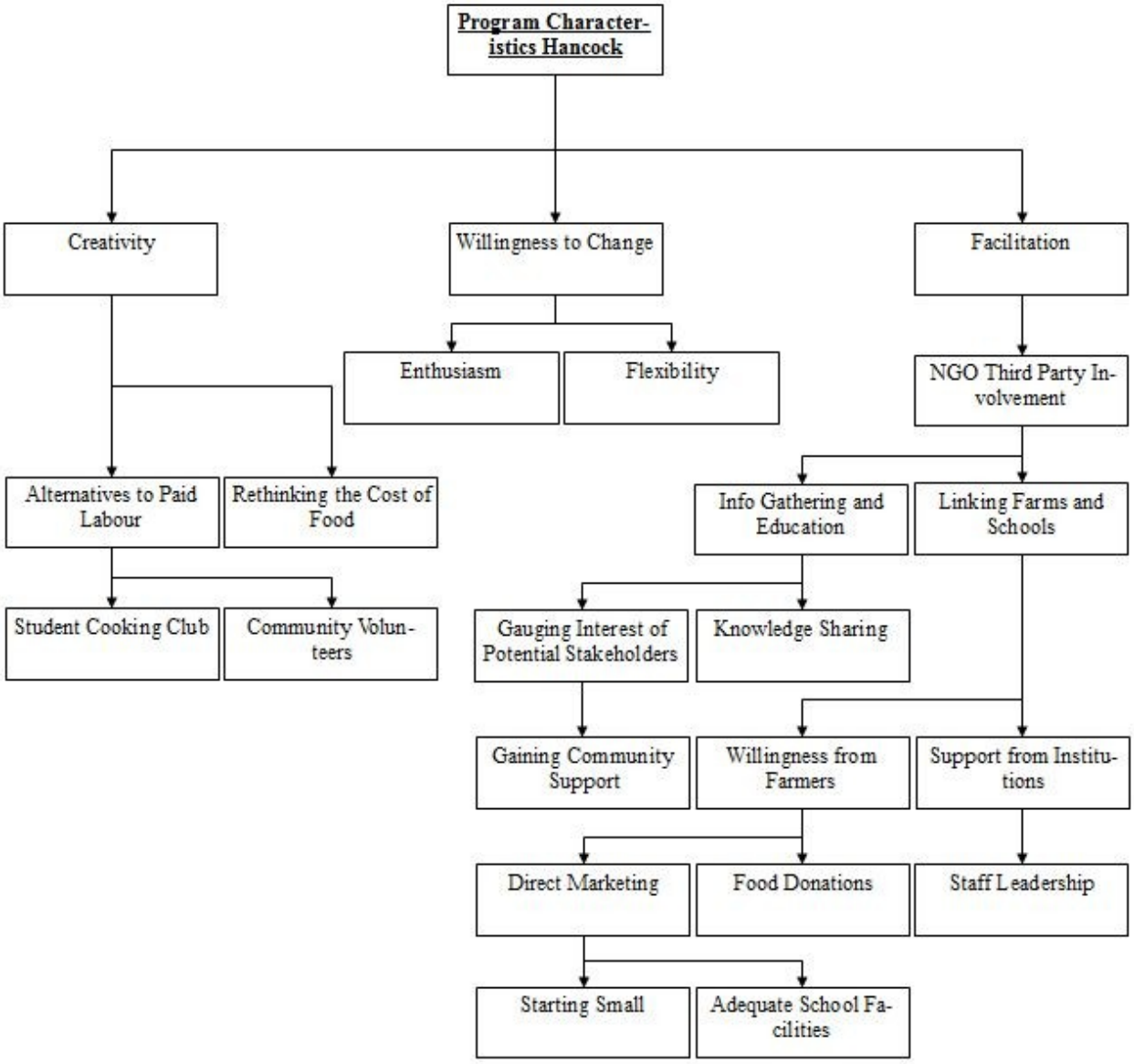

Figure G.4: Opportunities Node Tree