

Mount Saint Vincent University  
Department of Applied Human Nutrition

**Buying Local at Grocery Stores in Nova Scotia:  
Implications for Food Security and Healthy Eating**

by  
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## ABSTRACT

**Background:** Food security and fruit and vegetable consumption are two priority action areas of *Healthy Eating Nova Scotia*. Through many collaborative efforts this strategic plan aims to increase the availability of nutritious, locally produced foods in the province and, in particular, to make fruits and vegetables more accessible and affordable for low-income households. In 2010 the Nova Scotia (NS) Food Security Network and Mount Saint Vincent University partnered with the NS Department of Health and Wellness and community organizations throughout the province to conduct a food costing survey in order to determine the cost of a basic nutritious diet.

**Purpose:** This two-phase, mixed methods study used secondary data analysis and qualitative methods to: 1) determine the availability and relative cost of nutritious locally produced foods in grocery stores throughout NS; and 2) to examine, from the perspectives of key stakeholder groups, the implications of local food availability and relative cost for food security and healthy eating in NS.

**Methods:** In Phase I data collected as part of the 2010 NS Participatory Food Costing Project were entered into Microsoft® Office Excel® (Microsoft Corporation) spreadsheets and statistically analyzed to determine the availability and relative cost of locally produced foods from a stratified random sample of 46 grocery stores. In Phase II these findings were presented to members of agricultural awareness, health and nutrition organizations who participated in either focus group or individual interviews to reflect upon and interpret the research results in light of their mandates. A semi-structured



interview protocol developed to guide the discussion provided a framework for qualitative data analysis. Audio recordings of the interviews were transcribed verbatim and content analysis was conducted with the assistance of the qualitative research software, NVivo (QSR International).

**Results:** Analysis of the food costing results revealed that 20.7% of the National Nutritious Food Basket (NNFB) items in grocery stores were locally produced in the Maritime Provinces. Locally produced NNFB items were lowest in price in 75.4% of the grocery stores with local availability. When presented with these findings, focus group participants identified limited access to local foods and the perception that local is expensive as possible barriers to food security and healthy eating, and the lower relative cost of local foods and the perception that local foods are nutritious as enablers. Participants suggested that supporting direct delivery of local foods to grocery stores and investing in rural infrastructure would serve to strengthen local food availability.

**Conclusions and Implications:** Consumers do not have access to a wide variety of nutritious, locally produced foods in grocery stores in Nova Scotia in June. Moreover, some local food items lack sufficient local identifying information. In contrast to perceptions that local foods cost more, in grocery stores in Nova Scotia NNFB items with the lowest relative price are usually locally produced. The findings highlight the need to increase the availability of nutritious, locally produced foods, especially fruits and vegetables, in grocery stores in order to promote food security and healthy eating. Implications of these findings are discussed and recommendations provided.

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## GLOSSARY

**Buy local:** Buying food and goods produced close to home; initiative which promotes this practice (2, 3).

**Canada's Food Guide:** A resource published by Health Canada to describe and promote healthy eating among Canadians (4).

**Community food security (CFS):** "A situation in which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance and social justice" (5, p. 37).

**Community supported agriculture (CSA):** Marketing arrangement in which members support a farm operation by purchasing shares and, in return throughout the growing season, receive a share of the crop (6, 7).

**Food coster:** A term used by the Nova Scotia Participatory Food Costing Project (8-11) to describe an individual who is trained to monitor the cost of a nutritious food basket (12). As in previous years, individuals who were affiliated with Family Resource Centres/Projects or other community-based programs, and who had experience with the issue of food insecurity, participated as food costers during the 2010 food costing project.

**Food miles:** The distance traveled by a food product from the place of production to the location where it is sold for final consumption (6).

**Food security:** According to the Food and Agriculture Organization of the United Nations "food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life" (13).

**Local food:** For the purpose of this study local food was defined as those foods grown or produced in the Maritimes, which consist of three provinces: New Brunswick, Nova Scotia and Prince Edward Island.

**National Nutritious Food Basket (NNFB):** A list, currently comprised of 67 food items, which serves as a survey tool to monitor the cost and affordability of a nutritious diet for Canadians in various age and gender groups (12). The contents of the 2008 NNFB were selected according to Canada's Food Guide recommendations and the Canadian Community Health Survey food intake data. The food costing protocol is used primarily by health and social services agencies at regional and provincial levels.

**Participatory Action Research (PAR):** “...systematic inquiry with the collaboration of those affected by the issue being studied, for purposes of education and taking action or effecting social change” (14, p. 4).

**Participatory food costing:** Food costing is a protocol to monitor the cost and affordability of a nutritious diet within a jurisdiction (12). Participatory food costing includes the participation of those affected by income-related food insecurity (15), as well as those able to impact the issue (16).

**Population health:** A health promotion approach which focuses on the entire population and strives to reduce health inequities among groups (17).

# CHAPTER 1: INTRODUCTION

## 1.1 Problem Statement

A nutritious diet is essential to good health (18). The healthy eating pattern recommended in Canada's Food Guide is designed to assist Canadians in obtaining required nutrients and achieving overall health, thereby reducing the risk of chronic disease and obesity (4). Following these recommendations, however, can sometimes be challenging. For example, findings from the 2004 Canadian Community Health Survey (CCHS) indicate that the majority of Canadians (63%) are not consuming the recommended intake of fruits and vegetables (19). Moreover, the results further revealed that significantly more Nova Scotians, 67% of residents aged 12 years and older, failed to meet the recommended minimum of five daily servings for fruit and vegetable consumption (19).

Food insecurity is an additional concern highlighted by findings of the CCHS (20). In 2007-2008 7.7% of Canadian households surveyed, including 9.3% of those in Nova Scotia, experienced food purchase constraints imposed by a low income (20). The prevalence of food insecurity in Nova Scotia was even higher among households with particular socio-demographic characteristics, such as lone-parent households (22.9%) and households where social assistance was the main source of income (55.5%) (21). Previous research has indicated that households with lower incomes tend to spend less on nutrient-rich foods such as vegetables and fruit (22). Consequently, individuals living in low-income households may have less than optimum nutritional status (23) and may therefore be at increased risk for nutrition-related health issues (24). It has been reported that chronic diseases account for 80% of all deaths in Nova Scotia (25). Yet, the

incidence of chronic conditions such as cardiovascular disease may be reduced with lifestyle changes such as increased fruit and vegetable consumption (26).

The province of Nova Scotia utilizes a population health approach to maintain and improve the quality of life for all Nova Scotians (27). In adopting such an approach, there is recognition that many factors in our economic, political, social and physical environments can influence our health. Consequently, the Province is employing a coordinated effort to address health issues (18). Healthy Eating Nova Scotia (HENS), the strategic plan focused on nutrition-related issues, including food security and fruit and vegetable consumption, reflects the population health approach (18). According to the recommendations outlined in this plan, health and nutrition-related organizations, as well as social justice and food production organizations, are working to reduce the incidence of chronic conditions through good nutrition (18). Thus, increasing the availability of nutritious locally produced foods and making fruits and vegetables more accessible and affordable for low-income households are important objectives of their province-wide mandate (18).

Building on these objectives, various strategies, including those focussed on building community capacity through food security and healthy eating initiatives, are being employed throughout the province (18). For example, one of the key issues being addressed by the Nova Scotia Agricultural Awareness Committee is environmental sustainability in the agri-food sector (28). To this end this group is developing strategies to encourage consumers to adopt the philosophy “Buy Local: Nova Scotia agriculture produces food for Nova Scotian families” (28, para 3). Buy local is also the theme of *Select Nova Scotia*, a marketing campaign supported by the Nova Scotia Department of



Agriculture and the Department of Fisheries and Aquaculture in order to increase awareness and consumption of local foods (2).

In 2005 primary grocery shoppers in Nova Scotia reported that they shop an average of 5.5 times per month at grocery stores (29), revealing that the grocery store is an important retail food outlet. Yet, grocery stores may source foods locally and/or from more distant origins, and prices may differ according to product origin, thereby making attempts to buy local challenging for consumers. Approximately a third (34%) of Nova Scotians surveyed said that price was one of the factors considered during the purchase of vegetables (29). Seventeen percent of Nova Scotia shoppers surveyed cited the lower cost of imported foods among their reasons for not buying local at grocery stores (29). Moreover, shoppers' most common response (27%) was the lack of availability of local foods (29). Consequently, availability and cost may be important factors, not only for local food purchase decisions, but also for the health of Nova Scotians.

In order to address provincial nutrition-related priorities and objectives, as outlined in HENS, the former Nova Scotia Department of Health Promotion and Protection (now part of the Nova Scotia Department of Health and Wellness merger) provided support to Mount Saint Vincent University (MSVU) and the Nova Scotia Food Security Network in 2006 for continuation of participatory food costing (9-11), which was first conducted in grocery stores in the province in 2002 (8). In conjunction with participatory food costing, partners of the Nova Scotia Participatory Food Security Project conducted a local foods pilot project in 2004-2005 (9), followed by local food costing in 2007 and 2008 in order to determine the availability and relative price of local foods in grocery stores in Nova Scotia (10, 11, 30).

Analysis of the results of local food costing in both 2007 and 2008 revealed that locally produced foods were available, on average, in 23% of stores and were priced lowest in 75% of stores with a local option (30). Although local food costing was repeated in 2010, the data had not yet been analyzed. Therefore, it was not known whether local foods continued to be comparably priced, yet not widely available in stores. The availability and cost of locally produced foods in grocery stores in 2010 may have changed as a result of a combination of various factors such as a decline in the economy and growth in the local food movement. Therefore, as part of the local food monitoring process, there was a need to analyze the data collected in 2010. Moreover, there was a need to ascertain the implications of the availability and affordability of nutritious locally produced foods for Nova Scotians. Agricultural awareness, health and nutrition organizations could then apply the findings in determining the next steps towards healthy eating and food security.

## **1.2 Research Questions**

This research investigated the following questions pertaining to the availability and cost of nutritious locally produced foods in Nova Scotia: 1) Are foods produced in the Maritime Provinces available in grocery stores throughout Nova Scotia? 2) Are local foods more available in smaller versus larger stores, or in grocery stores located in rural versus urban areas? 3) Is the local food item also lowest in price? 4) What are the implications of local food availability for food security and healthy eating? 5) What are the implications of the relative cost of local foods for food security and healthy eating? and 6) How might these findings be applied?

### 1.3 Research Objectives

The specific objectives of this study were:

- 1) To determine the availability and relative cost of nutritious, locally produced foods in grocery stores in Nova Scotia
  - a. To ascertain the extent to which foods produced in the Maritime Provinces are available in grocery stores throughout Nova Scotia
  - b. To determine whether local foods are more available in smaller versus larger grocery stores, or in rural versus urban areas of Nova Scotia
  - c. To establish the percentage of times the lowest food price is that of a locally produced item
- 2) To explore views on the implications and application of the findings in promoting and supporting food security and healthy eating in Nova Scotia
  - a. To present the findings to members of agricultural awareness, health and nutrition committees/organizations who will assist in the interpretation of the results and discuss:
    - i. their reactions to local food availability and cost
    - ii. the implications in terms of their respective mandates
    - iii. the next steps in applying the findings – appropriate policies and programs
    - iv. the process of local food costing and recommendations for the future

## **1.4 Significance of the Research**

Nova Scotia is the first province to use a participatory research approach to food costing (8), and also the first to incorporate a local foods component (9). This study was built on the foundation created by partners of the Nova Scotia Participatory Food Security Projects which conducted food costing of locally produced NNFB (1998) items in grocery stores throughout the province in 2007 and 2008 (10, 11, 30), and more recently in 2010 (16).

The food costing survey form used to collect data for these previous local food costing investigations was revised for use in 2010 (31). The revisions included changes based on the most recent version of the NNFB (12) to reflect current dietary guidelines (4). Data collected during 2010 also reflected current Canadian food labelling regulations which, at the end of 2008, were amended with respect to Product of Canada claims on packaging (32) in order to more clearly denote those foods grown or produced in Canada. The revised form also included space for food costers to enter data pertaining to product brand and local food promotion, such as food label and grocery store signage information. This additional information provided details about how food costers were/were not able to ascertain whether a food item was locally produced. Therefore, it provided insight into some of the consumer point of purchase experiences in buying local at grocery stores in Nova Scotia.

Another unique contribution of this study was the analysis of individual and focus group interviews with members of agriculture, health and nutrition organizations who reflected upon and informed interpretations of the implications of the local component of the food costing research results. These organizations are participants in the coordinated

effort to address nutrition-related health issues in Nova Scotia (18). This investigation thereby provided not only a description of the current local food environment in grocery stores in Nova Scotia, but also insight into how the findings may be used to inform policy pertaining to food security and healthy eating initiatives in Nova Scotia.

## **CHAPTER 2: LITERATURE REVIEW**

### **2.1 Introduction**

The following literature review focuses on research pertaining to buying local at grocery stores. The intent is to develop an understanding of this aspect of the local food system particularly with regard to the availability and relative cost of nutritious locally produced foods in grocery stores. This review begins with an examination of consumer interest in local foods and a discussion of related issues, including how *local* is defined. Evidence of the nutritional and health benefits of local food consumption, as well as the relationship between the local food environment and healthy eating are then discussed. This is followed by a discussion of the role of farmers' markets in local food systems to enable comparison with that of grocery stores. Next, various factors pertaining to local food availability at the grocery store, including procurement and barriers to local sourcing, are examined. The effects of point of purchase factors such as price and labelling are also explored. This is followed by a critical examination of the process of moving towards a food system where local foods are more widely available. Finally, general considerations for developing local food policies are presented.

### **2.2 Consumer Interest in Local Foods**

Consumers in Canada and other Western countries are showing an increased interest in local foods (33-40). Consumers associate locally produced foods with quality (37, 41-43), freshness (7, 37, 40, 41, 43-45) and flavour/taste (40, 42, 43, 45), particularly with regard to fruit (41, 44, 45). Good nutritional value (45) and personal health benefits (42, 44) are also among the attributes that consumers associate with local foods,

especially fresh produce (45, 46). Thus, consumers assign a wide variety of positive attributes to local (47, 48).

Interest in local food consumption may be partially attributed to consumer discontent with large-scale farming and food distributions systems as well as their perceived impact on the environment and food security (42, 49, 50). In 2007 U.S. consumers reported that they are concerned about ethical consumption, and therefore choose to buy local (51). Other research suggests that consumers may buy local in order to support local farmers (2, 7, 40, 43) and the local economy (2, 40, 43), to reduce *food miles* (2), and/or to obtain social benefits by participating in community events (2).

Certain groups of consumers in particular, namely females (52, 53), and those living in rural areas (35), are more likely to purchase local food products. Rural consumers, especially, show a higher interest in supporting the local economy (37). Yet, Zepeda and Li (44) concluded that simply the presence of another adult in the household significantly increases the probability of buying local. The researchers suggest that this might be reflective of social factors such as having the opportunity to share the enjoyment of a meal. Moreover, results of this U.S. consumer survey also revealed that consumers' reported enjoyment of cooking, but not frequency of cooking, may be the dominant factor in buying local, increasing the probability of purchasing locally produced foods by 50% (44). Zepeda and Leviten-Reid (54), whose findings revealed only positive attitudes towards local foods among focus group participants, concluded, therefore, as did Thilmany and Bond (47), that demographics alone cannot predict whether consumers will buy local.

## **2.3 Defining *Local***

Although there is no single, widely-accepted definition of *local* (37, 41, 44), commonly used definitions generally incorporate notions of a political boundary (30, 54, 55), such as a county, or employ a distance factor (37, 41, 56), such as the distance from home. For example, focus group participants in the U.S. incorporated various boundaries into their definitions of *local*, such as within a county or state (43, 54), or within neighbouring counties or states (54), or even within the entire country (54). Consumer focus group members in the U.K. perceived local foods as those produced and sold within a 20 to 50-mile radius from home (41). Zepeda and Leviten-Reid (54) determined from a U.S. national survey that most consumers' definition of *local* was based on the time required to drive to the nearest local food venue.

Several studies (49, 57) revealed that retailers reported using less commonly used definitions of local, and could possibly be passing them on to consumers who shop in their stores (57). For example, a retailer in upstate New York differentiated between non-perishable local products according to whether their distribution range was national or local (49). In contrast, however, some retailers in the U.K. defined *local* in very broad terms as any food sourced from local suppliers (57).

## **2.4 Evidence of Local Food Benefits**

### **2.4.1 Nutritional and Health Benefits**

Canadians are encouraged to eat well with Canada's Food Guide to maintain overall health and reduce the risk of chronic disease (4). For example, a high fruit and vegetable intake (from any source), as recommended by the guide, is associated with a



modest reduction in cardiovascular disease (26). According to the results of a survey conducted in 2009, 96 % of Canadians believe that locally produced foods are healthy (58). Moreover, 59% of respondents believe that local foods are more nutritious than those that are imported.

Many harvest and postharvest factors, including handling, temperature changes and storage conditions, can affect the nutritional quality of fruits and vegetables (59). For example, the vitamin C content of produce can be diminished by bruising or high temperatures (59). On the other hand, the soluble antioxidant activity of tomatoes increases (24%-27%) and the lycopene content doubles during 10 days of storage at room temperature (60). Following their review of studies investigating the nutritional quality of fresh produce, Edwards-Jones et al. (61) also concluded that in addition to storage time, other factors such as handling practices, can affect nutritional quality. Therefore, at the grocery store similar produce items of local and non-local origins may not necessarily differ in nutritional quality. Moreover, Lee and Kader (59) conclude that although factors such as growing conditions and handling affect the nutritional quality of fruits and vegetables, cultivar selection, or genotype, has the greatest influence on vitamin C content at harvest time. It is challenging, therefore, to measure the nutritional quality of local foods such as fruits and vegetables and then compare the overall quality to that of non-local produce (61).

#### **2.4.2 The Local Food Environment and Healthy Eating**

Increased access to fresh fruits and vegetables is associated with improved dietary changes (7). Geographic supermarket availability is also positively associated with healthy dietary patterns (62). Changes in the local food environment, including

home delivery of produce to seniors (63) and eating home grown produce at family mealtimes (64), are associated with increased fruit and vegetable consumption. More than half of the consumers (58%) who joined the Mid-Atlantic community supported agriculture (CSA) groups in the U.S. reported that they had increased their intake of fruits and vegetables, and 74% reported that they also consumed a wider variety of produce (7).

## **2.5 Direct Marketing**

### **2.5.1 Farmer/Producer Participation**

Through direct marketing methods, such as roadside stands, U-picks, and farmers' markets, producers can eliminate the need for distributors, thereby reducing their costs (65). The number of farmers' markets in Canada was estimated to be approximately 500 in 2008 (66). Although there were only 15 farmers' markets in Nova Scotia in 2003, the number of markets had increased to 55 in 2010 (67). Vendors at Canadian farmers' markets reported that approximately one third of their income comes from direct sales to consumers (68).

The number of farmers' markets in the U.S. is growing steadily, and in 2009 there was an increase of 13% over the previous year (69). Moreover, the National Farmers' Market Directory indicates that the total number of farmers' markets in the U.S. more than tripled from 1996 to 2010 when more than 6,000 markets were listed (70). Although Thilmany and Watson (71) predicted in 2004 that farmers' markets would continue to expand within the U.S., they also concluded that some producers appear to have difficulty managing both production and marketing, and may therefore refrain from joining farmers' markets (71).

### **2.5.2 Buying Local**

Proponents of direct marketing say that consumers benefit from this by obtaining fresh, high-quality products at prices comparable to those at supermarkets (65). Consumers report that quality and value are the most important factors to consider when purchasing produce (53, 72). Consumers who were asked to compare produce on price and quality characteristics perceived farmers' market produce to be more highly desirable than supermarket produce (53, 72).

Surveys have been conducted in both the U.K. (40) and the U.S. (39, 46) to investigate whether consumers purchase locally produced foods. Nearly three quarters (73%) of consumer survey respondents in rural areas of England and Wales said that they purchase foods grown on local farms, with 41% of respondents indicating that they made such purchases at least once per week (40). In 2007 nearly two-thirds (65%) of consumers in the U.S. reported in a nationwide survey that they make the effort to buy local foods (39). Nearly a third (30%) prefers to purchase fresh produce directly from farmers, but approximately three-quarters (76%) of consumers make their primary food purchases, including fresh produce, at supermarkets (46).

In Canada 27% of consumers reported in 2009 that they buy from farmers' markets (58). Nova Scotia consumers in all household income brackets (29, 33) are buying local, particularly fresh produce (29, 33) from farmers' markets (29, 33, 34), and to a lesser extent, roadside stands and U-picks (29). According to a survey conducted among 420 visitors to farmers' markets in Nova Scotia in 2003-2004, the largest category of visitors, representing approximately 20% of respondents, consisted of those in the lowest household income bracket (33). In the province of Nova Scotia the economic

impact of farmers' markets was estimated to be more than \$68 million in 2005 (33). In a 2009 national study the economic impact of farmers' markets throughout Canada is estimated to be \$3.09 billion (68).

## **2.6 At the Grocery Store**

### **2.6.1 Consumers' Perceptions**

Produce shoppers interviewed at grocery stores in California rated price and quality characteristics of fruits and vegetables sold at farmers' market significantly higher relative to produce sold at supermarkets (72). While 42% of these shoppers had purchased produce at a farmers' market in the past month, they had also purchased fruits and vegetables from a supermarket within the past month (94%) and year (96%). The main reason given by these consumers for not shopping at farmers' markets was that the markets are *held at inconvenient times* (29%) and that *parking is a problem* (22%). Findings from other studies also reveal that consumers associate grocery stores with certain convenience factors (35, 41, 53). For example, California shoppers perceived advantages of purchasing produce from supermarkets versus farmers' markets to be availability, easy accessibility, the ability to make cashless transactions and the availability of pre-cut and packaged produce (53). During focus group interviews consumers in the U.K. cited limited time and a wide product selection as primary reasons for preferring to shop at supermarkets (41). Moreover, consumer survey respondents in the U.K. selected supermarkets as their preferred choice among local food outlets, although significantly more rural than urban respondents selected farmers' markets and other forms of direct marketing (35).

In a consumer market study 58% of more than 3100 Canadian respondents indicated in 2010 that they always (16%) or often (42%) look for local products while shopping for groceries or dining out (73). Convenience is important for half of Canadian consumers who responded that they always (10%) or often (40%) consider convenient food items when grocery shopping or dining out. In 2005 in Nova Scotia a survey of 400 consumers, who were the primary grocery shoppers for their individual households, revealed that more than 70% of respondents look for local products when shopping for produce and fresh fish (29). In order to identify local products 61% of respondents mentioned that they read the package or label, while 39% said that they read the signage. Approximately a third (34%) of the Nova Scotian respondents stated, however, that they rarely know whether the products they have purchased from grocery stores are local in origin, and 6% said that they never know if their food purchases include local items (29). Among Canadian consumers who indicated that they rarely or never look for locally produced foods at the grocery store, the most frequently stated reasons were that local products were either more expensive (22%), not discernible from other food items (22%) or not available 18% (73).

### **2.6.2 Local Food Procurement**

Grocery store retailers in the U.K. (40, 57) and the U.S. (49, 74) indicate that there is a niche market for local products, particularly those that are organic (74). Retailers in both regions expressed an interest in local foods (40, 49, 57) and a commitment to improving local sourcing (57). A 2005 study indicated that supermarkets in the U.K. were introducing local food initiatives in response to reported consumer demand (57). Retailers in the U.K. reported sourcing local products outside their central

distribution system, usually from local food wholesalers and not directly from producers (57).

In North America farmers' market producers may sell high volumes, at low margins, to retail and wholesale markets (71). In 2000 nearly 72% of the farmers at U.S. markets also relied on other marketing channels (65). Moreover, in addition to retail sales, 7% of the markets also operated a wholesale business, selling to restaurants, wholesalers and grocery stores (65). Wisconsin retailers reported purchasing 56% of their local food products directly from farmers (74). In 2009 Oregon retailers also reported buying directly from producers, and estimated that 26%-50% of produce and 51%-75% of dairy and meat items in their grocery stores were locally produced (75). Details from a case study of grocery stores in rural upstate New York revealed that, while all but one of the stores obtained most of their products from company-owned distribution centres, they also obtained local produce through various channels and had direct-store-delivery of certain products, such as bread (49). In Canada the Co-op Atlantic grocery store chain partners with farmers throughout the Atlantic Provinces to market their products, thereby eliminating the need for intermediate brokers and reducing transaction costs (66).

### **2.6.3 Barriers to Local Food Sourcing**

Many grocery store chains throughout North America, the U.K. and Australia have efficient distribution systems that source foods worldwide (57). In contrast, however, surveys of grocery retailers identify numerous barriers to local food sourcing (49, 57, 74). Retailers have reported concerns with various factors related to producers' lack of marketing and distribution skills (49, 57, 74). Local producers sometimes cannot provide the packaging and/or bar coding required by retailers (49, 75). Quality is a

concern for some retailers (49, 57, 75). In the U.K. food retailers expressed discontent with the low quality of available local products (57), whereas grocery store retailers in upstate New York cited inconsistent quality as a problem (49). Inconsistent supply of local products also poses problems for some retailers (49, 57, 74, 75). Lack of a central supplier or local food distributor was identified as a concern by retailers in both the U.K. (57), and the U.S. (49, 74). Seasonality problems in sourcing local within upstate New York (49) were echoed by retailers in Wisconsin who indicated that inconsistent availability of locally grown produce was the greatest obstacle to local sourcing in their state (74). Comparable Canadian data are not available.

## **2.7 Point of Purchase Factors**

### **2.7.1 Intrinsic and Extrinsic Factors**

Various factors influence people's food choice decisions, some of which are made at the point of purchase (29, 35, 51, 76-78). Consumer surveys have revealed that the intrinsic characteristics of fruits and vegetables are the most important criteria taken into account at the point of purchase (29, 35, 72, 76). In addition, extrinsic product factors, including price (29, 35, 72, 77, 78) and labelling information (77, 78), can play a role in purchase decisions.

Sometimes consumers' food evaluation involves not only observation, but also reflection, in which consideration is given to broad issues, such as health and food system awareness (76). Weatherall and colleagues (35) concluded that 58% of their study participants were *concerned consumers* whose heightened awareness of socio-economic and environmental concerns increased their interest in buying local foods. Pirog (43) found, however, that, compared with food attributes such as freshness and taste,

consumer perceptions of local food benefits, such as supporting local farmers and the local economy, are secondary influences on purchase decisions. Moreover, Zepeda and Li (44) maintain that consumer interest and/or attitudes do not always display a direct connection with their actual buying behaviour. Based on the results of a 2003 national survey of U.S. consumers, Zepeda and Li (44) concluded that, despite shoppers' receptive attitudes towards the environment, nutrition, and support for farmers, local food promotion touting these benefits would not significantly change consumer buying habits (44). Pirog (43) is somewhat more optimistic, and concluded that local food promotional campaigns and consumer education may gradually achieve success.

### **2.7.2 Price**

By marketing directly to retail outlets, producers may be able to substantially reduce their costs, and as a result, the final price to consumers (49). Lawless and colleagues warn, however, that retailers may not necessarily pass these savings on to consumers (74). Local foods were perceived by most U.K. consumer focus group members as more expensive than national or imported foods (41). Although both rural (74%) and urban (82%) consumers in the U.K. showed high levels of purchase intent with regard to locally produced foods, when asked whether they would pay more for local food items 18% of rural and 25% of urban consumers gave a negative response (35). Moreover, in another study in the U.K., participants in consumer focus groups, differentiated according to income level, indicated that price was the deciding factor in their food purchase decisions (41).

Studies elsewhere indicate, however, that price may have only a moderate effect (76) or may not even significantly affect the likelihood of purchasing locally grown



produce (29, 52, 78). Results of a national U.S. consumer survey conducted in 2003 revealed that neither household income nor food expenditures has a significant effect on the probability of buying locally produced foods (44). Zepeda and Li (44) concluded that local food purchases comprise such a small proportion of consumers' income and expenditures that the pricing is not a concern. The researchers noted, however, that respondents in the lowest income quintile were not well-presented in this survey.

The results of this U.S. survey also revealed that while consumer income does not appear to impact local buying behaviour, consumer concern about the cost of food significantly decreases the probability of purchasing local foods (44). As among consumers in the U.K. (41), the concern about price was displayed by consumers from all income brackets in the U.S. (44). Pirog (43) concluded that value may be one of the key attributes in consumers' food purchase decisions.

In Nova Scotia 22% of consumer survey respondents reported in 2005 that they rarely purchase a local food product if it is more expensive than a comparable non-local item, while 6% reported that they never make such purchases (29). Similarly, in a 2010 Canada-wide survey, among consumers who said they rarely or never buy local foods, one of the most frequent responses was that locally produced foods are more expensive (22%) (73). Yet, in 2005 nearly half (49%) of Nova Scotian consumers surveyed said that they usually purchase a local food item even if it is more expensive than a similar item from elsewhere, and 15% of consumers said that they always purchase the local option (29). However, findings from both surveys indicate that willingness to pay a premium for local foods increases with income and age (29, 73).

### 2.7.3 Quality and Purchase Intent

The safety and quality of Canadian food products is regulated through legislation such as the Canada Agricultural Products Act (79) and the Meat Inspection Act (80), and monitored by the Canadian Food and Inspection Agency (81). Quality appears to have considerable influence in the purchase of produce, in particular (29, 78). In Nova Scotia the majority (63%) of randomly selected consumer survey respondents mentioned quality/freshness as an important factor in the purchase of vegetables, whereas only 8% indicated that locally grown is the an important consideration (29). Middle and upper-income consumers were more likely to mention quality as a response. The majority of Norwegian consumers also rated availability of high quality foods (63%) rather than locally produced foods (8%) as the most important factor in deciding where to shop (76). An analysis of an Indiana survey revealed that perception of the quality of locally grown produce is positively related to purchase intent (52).

Although people can focus on different aspects of a food product in their understanding of good quality (50, 76), most consumers, including *concerned consumers*, tend to focus on the intrinsic properties of fruits and vegetables (76). According to their survey responses most consumers place high importance on the observable sensory attributes of taste (76), appearance (76) and freshness (35, 45, 52, 76, 82) during the food selection process. Taste is not usually evaluated at the point of purchase (77). Yet, taste may be the most important attribute (83, 84), together with quality (43), during repeat purchases. Pirog (43) concluded from consumer survey results that freshness, quality, price and taste form the core product characteristics which influence consumers' local food purchase decisions.

#### **2.7.4 Canadian Food Label Information**

For consumer protection all prepackaged food products sold in Canada must be labelled according to the Canadian Food Inspection Agency (CFIA) guidelines which comply with the Consumer Packaging and Labelling Act and Regulations (85). The few exceptions include clerk-served foods and fresh fruits or vegetables packaged in a narrow wrapper or band. Food labels must include specific information which includes a list of ingredients and the name and address of the dealer, a company which either manufactured or distributed the food product (85). If the packaged product has been wholly or partially manufactured outside of Canada, but the label contains the address of a Canadian dealer, either the geographic origin or the terms *imported by* or *imported for* must be placed adjacent to the address. The country of origin must be shown on packages, as well as shipping and master containers, of fresh fruit and vegetables (86). In 2010 41% of Canadian consumers indicated that they always (12%) or often (29%) look for country of origin information when grocery shopping or dining out (73).

The CFIA (85) also encourages Canadian food companies to use the voluntary *Product of Canada* and qualified *Made in Canada* claims on food packaging labels to in order to provide consumers with clear information about the foods they purchase. In 2010 more than half (59%) of respondents in a cross-Canada consumer survey indicated that they always (16%) or often (43%) look for product of Canada information when grocery shopping or dining out (73). The Product of Canada claim on a food product indicates that "...all or virtually all major ingredients, processing, and labour used to make the food product are Canadian" (85, sec 4.19.1). The use of qualifying claims such as *Processed in Canada* is encouraged to ensure clarity for consumers (85). The Made in

Canada claim may only be used with an appropriate qualifying statement as in the following example from: “Made in Canada from domestic and imported ingredients” (85, sec 4.19.2).

The CFIA states on its Consumer Protection Site that with regard to fresh produce advertising, the term *local*, or a similar term such as *locally grown*, either means “...originated within 50 km of the place where they are sold...” or “meets the requirements of section B.01.012 of the *Food and Drug Regulations*, whichever condition is least restrictive” (56, para 3). In section B.01.012 *local food* is defined as one “that is manufactured, processed, produced or packaged in a local government unit and sold only in” that government unit and/or one or more adjacent units (55). According to this definition of *local*, fresh fruits and vegetables carrying a *Product of Nova Scotia* label would not meet the criteria for *local* in all areas throughout the province because *local government unit* is defined in the regulations as a local government area such as a municipality (56). Carter-Whitney (87) maintains, however, that this definition is too restrictive since most Canadians would consider fresh produce grown within their home province to be locally grown.

### **2.7.5 Impact of Place of Origin Information**

Consumer research has investigated the importance of providing food product origin information to grocery shoppers (39, 58). In 2007 a survey of consumers in the United States (U.S.) revealed that 85% of respondents believe that knowing where their food comes from is important and that nearly two-thirds (65%) of respondents said they make the effort to buy local foods (39). Most Canadian consumers (78%) also agree that it is important to know where their food is grown (58). Moreover, studies indicate that

place of origin information provided with food products may impact consumers' perceptions of these products (36, 78). Maine consumers indicated that place of origin, as well as skin quality, are the most important factors which influence their preference for potato varieties (36). Place of origin information on the labels of packaged spelt affected consumers' hedonic ratings and willingness to purchase the grain product (78). Consumers use place of origin information as a cue to quality of a food product, and tend to place a higher value on food products from a more precisely defined geographical area (78).

In 2009 retailers throughout the U.S. were required to enforce the final implementation phase of country of origin labelling (COOL) by providing consumers with this information for certain foods, including fresh produce, meat, peanuts and seafood (88). According to Saha and Mitura (89), however, COOL regulations may be imposing additional costs on U.S. food industry processors and, as a result, may be limiting the purchase of Canadian hogs and cattle by U.S. packers. As evidence, they note that following the introduction of these regulations during the first half of 2009 Canadian exports of hogs to the U.S. fell by 34.6% and that of cattle declined by 31.7% (89).

Although the purpose of COOL implementation may be to ensure food safety, COOL may promote consumer ethnocentrism (41, 52) and, consequently, producers may benefit from increased sales to consumers loyal to national products (52). In a similar manner U.S. state *buy local* promotional campaigns may protect producers from inter-state competition (52). Consumer ethnocentrism was demonstrated by U.K. focus group

members who were supportive of local and national foods, but preferred not to purchase foods from certain countries solely for political or cultural reasons (41).

## **2.7.6 Local Food Promotion**

**2.7.6.1. Local Branding.** Branding is the “process of using symbols to communicate the qualities of a particular product made by a particular producer” (90, p. 337). Brands, or logos, and brand names may be used by producers to help consumers identify with the product and develop *brand loyalty* (90). Zepeda and Li (44) concluded that a food label provided with the term *local* would be appropriate for common usage. Roininen and colleagues (37) maintain, however, that a lack of clarity in defining local creates problems for those interested in local food promotion. Weatherall et al. (35) agree that the term *local* is not clearly defined and suggest that branding should be employed as a marketing technique in order to create a strong image of local foods in grocery stores. Even though consumers in Indiana expressed a strong desire to purchase local products, researchers there also concluded that promotional campaigns touting the state brand of agricultural products would positively influence sales (52).

The promotion of locally produced foods through branding has been adopted by departments of agriculture throughout North America (2, 28, 52). The effect of local food branding logos was conducted in Ohio by Batte and colleagues (91) who concluded that a branding logo, such as *Ohio Proud*, placed on the label of blackberry jam increased the likelihood (about five percentage points) that consumers in the state would purchase the product. Yet, Brooker and colleagues (92), who examined consumer retail behaviour, caution that the branding of local produce with region-of-origin labelling cannot compensate for a poor quality product. Moreover, Batte and colleagues (91) determined

that price was the single most influential factor affecting consumer point-of-purchase selection of jam.

**2.7.6.2 Grocery Store Strategies.** Lawless and colleagues (74) observed that grocery stores in Wisconsin employed similar local food promotional strategies, including place of origin and price signage displayed near produce items. Other examples of local food signage included names of farms, branding, such as *Wisconsin-grown*, and, occasionally, photographs of local farmers (74). Local produce, and to a lesser extent, dairy products, were also featured in promotions in upstate New York (49). Grocery stores there posted local signage and utilized other forms of in-store promotions, including end of aisle or point-of-purchase displays, product samples and printed advertising, such as flyers (49).

Low-income grocery shoppers in upstate New York reported through interviews that they often referred to printed advertising, including flyers, before deciding where to shop and what to purchase (93). Some of these consumers revealed that fruits and vegetables were priority items, particularly with regard to their children's health. Yet, they also noted that while they usually took advantage of the advertised sale items by shopping at more than one grocery store, the stores rarely promoted fresh produce (93). Webber and colleagues (93) therefore recommend that grocery stores take advantage of family health as a motivational factor in the promotion of fresh produce.

Some local products, however, especially non-perishables, may have difficulty competing with well-recognized brands supported by strong advertising campaigns (49). Zepeda and Li (44) concluded, after conducting a national survey in the U.S. among adults who shopped and cooked, that local food promotion based on nutrition or fair

prices would not significantly affect consumer behaviour. The findings of their research imply, however, that local food marketing strategies would be more efficient if they focussed on the pleasures associated with cooking and eating local food (44). Therefore, examples of effective local food promotions in grocery stores would include offers of recipes and samples, as well as cooking demonstrations (44).

## **2.8 Food System Localization**

### **2.8.1 The Local Trap**

Food system analysts (94, 95) caution that it is important to avoid the local trap. They argue that it is misguided to assume that a local food system is inherently better, such as more nutritious, just or sustainable, than a food system of larger scale (94, 95). Problems can exist in any food system, regardless of its size (95). Winter (40), who detected problems within existing local food systems, agrees that consumers should not make false assumptions about local food purchases. Upon completion of case studies in rural farming areas in the U.K., Winter (40) noted that some of the local farms had environmental issues, such as evidence of soil erosion and high nitrate use.

Dunne and colleagues (75), who interviewed food retailers in Oregon, suggest that large-scale retailers and distributors could serve to strengthen the local food system by increasing the availability, accessibility and promotion of locally produced foods. Bloom and Hinrichs (96) found, however, that reliance on conventional distribution systems has its challenges. Their case study analysis of wholesale produce distributors in Pennsylvania revealed problems, including inconsistency of supplies and issues with price-setting, during the transition towards a more localized food system. Hinrichs (94), who studied food system localization efforts in Iowa, concluded that the localization



process may not only be complex, but also contradictory, as challenges are made concerning the definition of local foods and the nutritional value of traditional foods. Winter (40) also recognizes the need to more fully understand the sociological and economic complexities of not only a local food system, but food systems in general.

### **2.8.2 Local Versus Global**

Local foods appear to be gaining importance within the global food system (40). For example, consumer survey respondents in the U.K. expressed concern for the local economy and showed high support (76%) of buying local products (40). Yet, most of these consumers were conventional shoppers who also made non-local food purchases (40). Hinrichs (94) points out, however, that localization and globalization are related concepts. Viewing them as opposing systems may obscure the focus on the desired outcomes of localization (94).

Robertson (97), followed by other researchers (98, 99), employed a Japanese concept in using the term, *glocalization*, to capture the essence of the relationship between local and global. Ilbery and Maye (57) imply that no distinction exists between local and global food systems, however, and that a hybrid food chain appears to be the reality. While Fresco (100) agrees that these systems are connected in many ways, she argues that there should be an integrated approach to food system research which is “...nationally and regionally based but internationally inspired” (p.384).

Hamm (101) uses the term *locally integrated* to describe one characteristic of a *healthy food system* in which, depending on the needs of the community, foods are first sourced locally, and then regionally, followed by national and global sourcing as required. If a community were to source only local foods, a lack of local availability

could limit food choice and thus impact the quality (102) and cultural appropriateness of community members' diets (101). Restrictions imposed by local-only sourcing could heighten the impact of threats to the local food supply (101), including contamination, whether naturally occurring or the result of improper processing, storage and/or handling, (103) and natural and man-made disasters, such as floods and explosions (101, 103). Non-local food supplies (101), in addition to a well-prepared plan of action (103), may be required in order to cope with food-related community emergencies.

The Food and Agriculture Organization of the United Nations (FAO) (104) has expressed concern, however, that although globalization has increased the quantity of food available, food quality has diminished. Following their review of the literature, Hawkes and colleagues (105) concluded that for low-income individuals the processes of globalization may limit access to foods or promote reliance on nutrient-poor foods. Kennedy and colleagues (106) agree that although supermarkets provide convenient access to food at competitive prices, "...the lower socio-economic population groups drift towards poor quality, energy-dense but cheap and affordable foods" (p. 1). Poor diet quality can contribute to the development of obesity and chronic diseases (4, 18, 104). Therefore, the FAO (104) proposes that local food systems, with their emphasis on biodiversity and sustainability, are critical for nutrition and health.

## **2.9 Local Food Policy Considerations**

### **2.9.1 General Considerations**

Successful local food initiatives require supportive policies (6, 57, 107) and programs (3, 108) which will not only connect producers with local markets (107), but

will also improve access to safe and nutritious foods (103). Barriers to local food production, distribution and procurement will need to be identified and addressed, although policies and regulations developed to strengthen one area, such as food safety, should not create additional barriers for producers or consumers (6, 103). Public policy makers are advised to create clear and consistent local food policies (107), but before doing so they should examine the effects of any relevant food policies that currently exist (103). Although Fresco encourages policy makers to draw on previous experiences and tested solutions, she emphasizes that modification and innovation may be required (100). Sternman (109) also recognizes the importance of feedback and modification in policy implementation.

### **2.9.2 Cooperation**

Food system localization requires cooperation and collaboration among all stakeholders engaged in the development of local food strategies (18, 49, 74, 94). Lawless (74), who identified cooperation among Wisconsin farmers as an enabling factor in the promotion and marketing of local products, concluded that both formal and informal methods of cooperation are needed to strengthen local sustainability. In addition to local producers, Guptill and Wilkins (49) urge local governments, educational institutions and non-governmental organizations to cooperate and assume more active roles in shaping local food systems. Consumer participation is also recognized as an important component of food system localization (49, 94). Moreover, Webber and colleagues (93) maintain that a desired consumer change, such as increased consumption of fruits and vegetables, requires a holistic approach.

### **2.9.3 Food Distribution to Retailers**

Lawless (74) suggests that local producers could meet the high volume requirements of large supermarkets by arranging a coordinated supply of local products. Following an examination of transaction costs associated with marketing locally grown produce to institutions, Hardesty (108) also concluded that local producers should create a coordinated supply, but indicated that this structural change would also require collaboration with distributors and policy makers.

Researchers (3, 6, 57, 74) have identified knowledge gaps pertaining to local foods and the retail environment. For example, more research is needed to further our understanding of the role of retailers in the local food system (3, 57), particularly with regard to local food procurement (57). Quantitative research pertaining to local foods in the retail marketplace is also lacking (74). In particular, Martinez and colleagues (6) have identified the need for assessing future growth in local food systems by examining various factors such as costs and returns. Moreover, the authors say there is a need to understand the impact of food system localization on food security and public health (6).

### **2.9.4 Pricing**

Individuals living in low-income households may not be able to afford nutritious locally produced foods (110), including milk (111, 112) and fresh produce (22). Temple and colleagues (113), who found that low income was a barrier to a healthy diet in rural South Africa, concluded that taxes and subsidies should be implemented to make nutritious foods more affordable. French agrees (114) that price subsidies might be a feasible strategy for lowering prices and increasing fruit and vegetable consumption. French (114) concluded, however, following a review of price reduction interventions,

that more research is needed to ascertain the effectiveness of the strategy at the population level. In a randomized controlled trial Ni Mihurchu et al. (115) investigated the effects of offering price discounts to promote healthier food purchases at supermarkets in New Zealand. There was a significant increase in the purchase of healthier foods (10%-11%) with a 12.5% price discount. French (114) cautions, however, that if policies to lower the prices of nutritious foods were implemented, the volume of sales would need to increase in order to compensate for lost revenues.

### **2.9.5 Local Food Awareness**

Wider markets are important for supporting local businesses and local rural development (94). Based on a series of focus groups with consumers in the U.K., Chambers and colleagues concluded that participants were unaware of local food availability in supermarkets (41). These researchers (41) call for more effective marketing of local foods through the cooperative effort of local producers, government and supermarket chains. Pirog (43) suggests that marketing campaigns may also assist consumers in linking secondary product characteristics, such as nutritional, environmental and economic benefits, with core local food characteristics such as freshness. Yet, the author concluded that taste and quality would be the determining factors for repeat purchases of local products (43).

### **2.9.6 Food Labelling**

Labelling information on food products can inform consumers as they make their purchase decisions (32). The National Sustainable Agriculture Coalition (NSAC) in the U.S. recognizes the importance of clear and consistent food labelling and has identified the need for improved labelling of meats, in particular (107). Batte and colleagues (91)

concur with the NSAC that the combined effect of various types of product labelling information, including branding, product origin and health claims, may cause comprehension issues for consumers. Low-income grocery shoppers in upstate New York reported that they would like to see both product and nutrition information signage that is easier to read (93). Fresco (100) recognizes that there is a need for clear and adequate information on food labels, and proposes that food labelling and certification processes be simplified. Moreover, Fresco argues that consumers need transparent food production and distribution systems with full documentation to guarantee quality and safety (100).

## **2.10 Conclusion**

The concept of local is more complex than it first appears. Consumers have embraced the concept of local and prefer local produce, in particular, because of intrinsic qualities such as freshness and taste. Additional factors, such as socio-economic and health-related benefits, appear to heighten consumer interest in a more localized food system, buying local and buying directly from producers. The impetus to actually purchase locally produced foods, however, may be more related to food and shopping behaviours, as well as access to local foods. Primarily for convenience reasons, most consumers continue to shop at retail food stores where various point of purchase factors, especially price, value for money, and food quality characteristics, may influence their food choice decisions. Consumer research findings indicate that grocery shoppers from low-income households may be less willing to pay a premium for local foods, while older shoppers may be more willing to do so. Although few studies have investigated the availability of local foods in grocery stores, findings indicate that supplies of local food items to retailers may be inconsistent. Moreover, findings indicate that consumers may be

unaware of local foods that are available in retail stores. The purpose of this study was to investigate the availability and relative cost of nutritious locally produced foods in grocery stores throughout Nova Scotia and explore the implications of the findings for food security and healthy eating initiatives.

## CHAPTER 3: THEORETICAL FRAMEWORK

### 3.1 Community Food Security

In order to examine local food availability and relative cost in grocery stores in Nova Scotia this research employed a theoretical framework of community food security (CFS). Canada's Action Plan for Food Security supports "...initiatives geared toward enhanced involvement of citizens in achieving community food security" (103). Dietitians of Canada also recognizes the importance of such initiatives, and encourages its members to engage in policy and program development to help build CFS (116). As a desired outcome, CFS is "a situation in which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance and social justice" (5, p. 37).

Community food security aims to address the underlying causes of food insecurity by utilizing community collaboration and a long-term planning process (117). While CFS may be seen as a goal, it may also be viewed as a process (116), a movement (5, 118), an analytical tool and a methodology for program and policy implementation (117). Although the interpretation of CFS, as well as the definition of community, may vary, according to Hamm and Bellows (5), the process of CFS research should involve a food systems approach.

#### 3.1.1 Conceptual Model of a Local Food System

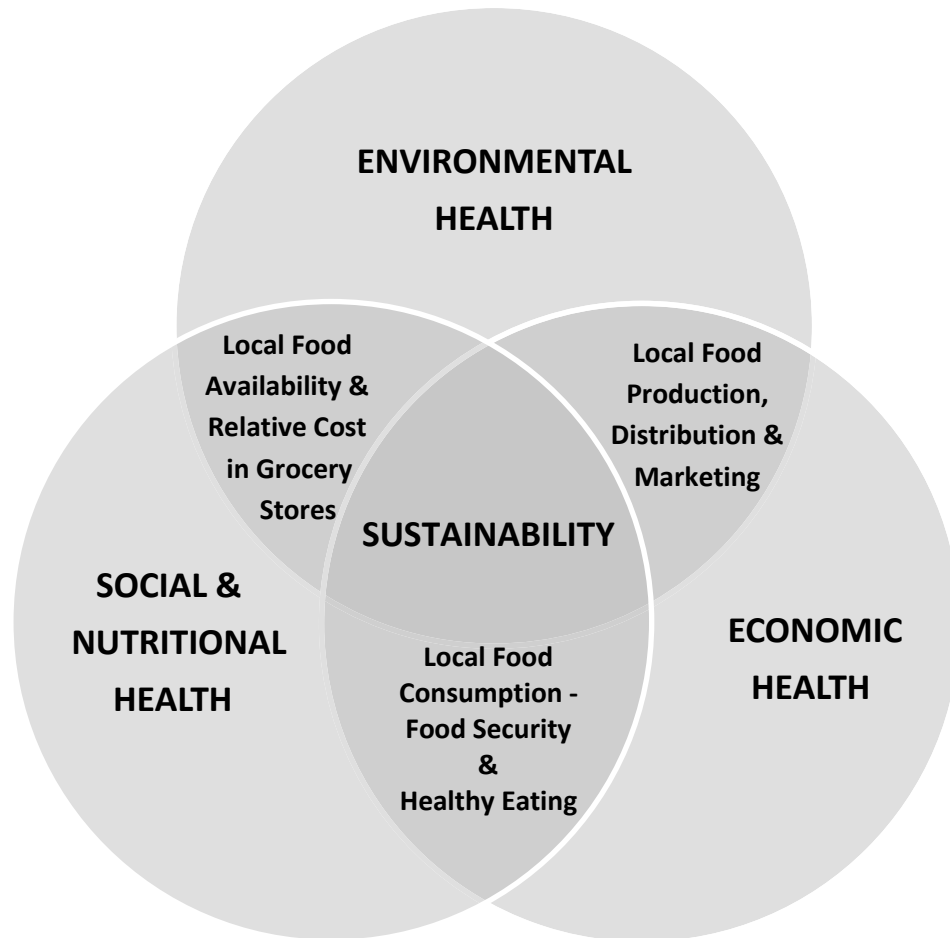
Food systems consist of many components along the *food to health pathway* (119). These components may be influenced by various underlying community socio-economic and institutional factors (119-122). Therefore, a conceptual model can assist in



highlighting the central elements of such a complex system, and can also graphically depict relationships between these elements and other related factors. Hancock (123) presents a conceptual model of a community ecosystem which integrates health and sustainability. In the conceptual model developed by Garrett and Feenstra (122), the authors emphasize that the long-term goal of a community-based food system is sustainability, which serves to improve environmental, economic, social and nutritional health conditions.

Within the conceptual model of a community food system strengthening the relationships between food system components contributes to overall community health (122). Winne and colleagues (117) maintain that a systems approach to CFS not only assists in the identification of underlying problems along the food chain from producer to consumer, but also focuses on solutions to these problems. The conceptual models developed by Hancock (123) and Garrett and Feenstra (122) were adapted for this study in order to portray how local food system components, including availability, cost, production, distribution and consumption, are integrated, and may therefore promote healthy eating and build food security (122) (Figure 1).

The first objective of this study was to determine the availability and relative cost of nutritious, locally produced foods in grocery stores in Nova Scotia. Local food systems have the potential to provide greater access to fresh, nutritious foods, thereby increasing CFS (42, 50). Thus, food system components, such as the quantity and quality of available locally produced foods, as well as the affordability of local foods, are among the many factors considered to be indicators of CFS (124-126).



**Figure 1.** Conceptual model of a local food system\*

\*Adapted from Hancock (123) and Garrett and Feenstra (122)

The active participation of community members and stakeholders is important for the development of a local food system (122). Winne and colleagues (117) maintain that all community members may participate in decisions pertaining to community food-related factors such as availability, cost, and quality. This study analyzed secondary data collected in June 2010 during the Nova Scotia Participatory Food Costing Project of MSVU and the Nova Scotia Food Security Network (16). The data were collected using a

participatory research approach to food costing which involved community members in all stages of the research process in order to build community capacity and food security throughout Nova Scotia (8-11).

Policy is a critical component for building CFS (116, 117). Garrett and Feenstra (122) advise stakeholders to conduct an assessment of the strengths of their community food system in order to inform policy and guide future development. Collaboration among stakeholders can empower participating groups to make stronger contributions to community policy (127). The second purpose of this study was to explore the implications of local food availability and cost for food security and healthy eating in Nova Scotia. The findings of the 2010 local food costing study were presented to key stakeholder groups who assisted in the interpretation of the results, discussed the implications, and recommended appropriate policies and programs to support access to nutritious locally produced foods in communities throughout Nova Scotia.

This holistic problem-solving approach to food security research can be challenging (5, 122). Community food security assessments typically measure various indicators within the food system such as quality and price inequities (128) and food availability and affordability (124-126). More than a decade ago Anderson and Cook (125) pointed out that it would be advantageous to determine which factors are most predictive of CFS. The authors argued that clarification of the determinants of CFS would assist in the development of an appropriate system of assessment and monitoring in order to guide decision making (125). Nevertheless, information about the food retail sector, in addition to other important food-related elements, can provide a “comprehensive picture

of the way a particular community grows, processes, distributes and consumes its food” (122, p. 8).

Although the issues pertaining to CFS are complex, CFS research can begin with a single entry point (5). Thus, within the framework of CFS this research examined the availability and relative cost of locally produced foods in grocery stores in Nova Scotia. In taking a food systems approach, this project also explored the implications of local food availability and relative cost for food security and healthy eating in the province. The overall goal was to inform policy makers and guide local food system development in Nova Scotia.

## CHAPTER 4: METHODOLOGY, DESIGN & METHODS

### 4.1 Introduction

This study was conducted in two phases. Phase I of this study analyzed secondary data collected through the 2010 Nova Scotia Participatory Food Costing Project (16) which utilized a participatory action research (PAR) methodology (129, 130). Participatory action research is largely built on Freire's (131) work with the oppressed in Brazil more than four decades ago. It is focussed on achieving positive change through a cycle of data collection, reflection and action, with each phase building upon the previous one (129, 130, 132). In addition to this reflective cycle, PAR may be distinguished from conventional (129), or expert-lead (132, 133), research by its collaborative approach. Green et al. (14) define PAR as "...systematic inquiry with the collaboration of those affected by the issue being studied, for purposes of education and taking action or effecting change" (p.2).

In PAR members of the organization being researched not only become actively involved in the research process (129, 132, 133) but also share in decision making with the researchers (129, 132, 133), thus forming a *co-inquiry team* (132). Although, participation varies widely in practice, it typically includes involvement in the research design as well as data collection and evaluation (133). Participatory action research has been widely used to effect health-related actions since the 1990s (129). In a community-based PAR project designed to address health and social issues, Bailey (129, 132, 133) and community participants employed the following five steps: entry discussions of the

issues, data gathering, data analysis and feedback, action planning and implementation, as well as formative and summative evaluation.

Whyte (133) views PAR as *client-centred* research. Moreover, Whyte argues that in order for PAR to be successful it must focus on a problem of importance to organization members and utilize methods that the members deem credible. Participatory action research is thus a collaborative research process (130, 133) which may employ various methodologies (129, 134). As the findings are discussed, however, PAR may also necessitate collaboration with policy makers (129) in order to achieve linkages between the research process and action (133), thereby facilitating empowerment of the community (132).

Participatory action research was employed by Travers (15) to address nutritional inequities in Nova Scotia in 1997. Travers reported how community organization through PAR empowered a group of low-income women in an urban neighbourhood to achieve a decrease in grocery store pricing inequities. Since 2002 the Family Resource Centres/Projects and the Nova Scotia Nutrition Council, initially with the Atlantic Health Promotion Research Centre, and then since 2006 with MSVU and the Nova Scotia Food Security Network, have worked with community partners to conduct participatory food costing in grocery stores throughout the province in order to gather evidence to inform food security-related policy and program change (8-11). These food costing studies have involved community members, many of whom have experienced food insecurity, in collecting the prices of specified food items, representing a nutritious diet. Food costing was conducted with the assistance of a standardized tool (31) developed by Health

Canada, the 1998 version of the National Nutritious Food Basket (NNFB), and revised in 2008 (12).

Food costing findings show that the cost of a basic nutritious food basket in Nova Scotia increased nearly 35% between 2002, when food costing began, and 2010 (16). This rate of increase was greater than the overall rate of increase in the Consumer Price Index (18.2%) in the province during the same time period (135). The report on the 2010 findings examined the affordability of a basic nutritious diet among households relying on Income Assistance, and concluded that many households could not afford to purchase a nutritious diet (16). This report also revealed that households relying on minimum wages are at risk of food insecurity. Thus, the food costing findings provide evidence to build capacity for policy and program change in Nova Scotia (16).

In order to examine the availability and relative cost of locally produced foods, the Food Costing Working Group conducted a local foods pilot project as part of the 2004-2005 food costing survey (9). In 2007 a Local Foods Sub-Committee was formed to examine the methods and findings of the pilot project and develop a revised local food costing protocol. As a result, a local food component was included in the food costing conducted in grocery stores throughout the province in 2007 and 2008 (10, 11, 30).

This research analyzed the local food costing data, pertaining to the availability and relative cost of locally produced foods, collected during the June 2010 participatory food costing in grocery stores throughout Nova Scotia using the newly revised (2008) version of the NNFB (16). In the second phase of this study the quantitative findings from Phase I were presented to members of health and nutrition committees/organizations who participated in focus group/individual interviews to reflect on the issues in terms of their

respective organizational/network mandates related to food security and healthy eating in Nova Scotia. The objectives of this study were to determine the availability and relative cost of local food products and to explore the implications of the results for food security and healthy eating initiatives in Nova Scotia.

## **4.2 Research Design**

This study used secondary data analysis to investigate local food availability and relative cost in grocery stores in Nova Scotia. Moreover, this research aimed to contribute to our understanding of the implications pertaining to the availability and relative cost of nutritious locally produced foods. Thus, it was the intent of this study to contribute to recommendations for future local food monitoring in grocery stores, and, ultimately, to inform policy pertaining to food security and healthy eating initiatives in Nova Scotia.

This study employed mixed methods “...in which the investigator collects and analyzes data, integrates the findings, and draws inferences using both qualitative and quantitative approaches or methods in a single study...” (136, p. 1). Partners of the Nova Scotia Participatory Food Security Project conducted participatory food costing in grocery stores in Nova Scotia during June 2010 (16). Secondary data from this survey of locally produced foods were statistically analyzed in Phase 1 of this study. Then these findings were presented to members of agricultural awareness, health and nutrition organizations/committees who participated in focus group/individual interviews to reflect upon and interpret the research results. The interview data were synthesized and analyzed using qualitative data analysis techniques. According to Creswell and Plano Clark, “the use of both quantitative and qualitative approaches in combination provides a better understanding of research problems than either approach alone” (137, p. 5).



#### **4.2.1 Data Collection – Phase I**

**4.2.1.1 Grocery Store Selection.** A stratified random sample of 46 stores was selected for participation from a list comprised of grocery stores located in Nova Scotia by the Nova Scotia Participatory Food Costing Project (16). The stores were stratified according to size and location: Grocery stores less than 15,000 sq. ft. were classified as small, whereas those equal to or greater than 15,000 sq. ft. were designated as large grocery stores. The location was identified as one of nine geographical regions under the areas assigned to District Health Authorities (DHAs) in the province (Appendix A). The grocery stores were also classified as either rural or urban, based on the population of the community in which each store is located (16). Thus, a rural designation was assigned to grocery stores in communities with a population less than 10,000, while those located in centres with 10,000 people or more were classified as urban grocery stores. As part of the Nova Scotia Food Costing Project store managers were sent a letter of invitation, and were then contacted by telephone in order to confirm their participation in the project (Appendix B).

**4.2.1.2 Survey Tool.** The National Nutritious Food Basket (NNFB), a food costing survey tool created by Health Canada (12), was modified by the Nova Scotia Food Security Projects and used to examine the availability and cost of 67 food items (16, 31) (Appendix C). The survey tool provided columns containing the name of each food item to be surveyed as well as the required purchase size. In addition, there were eight other columns to record information including the price and whether the item was on sale. This research analyzed data entered into the columns which pertained to local

food information including whether a local option was available and whether the lowest price was local.

As in previous years, 2007 and 2008 (10, 11, 30), the form included space to record whether the lowest price for each item was local, and if not, whether a local option was available. Furthermore, if the lowest price was not of local origin, food costers were asked to record whether a local option was available. There were three response choices on the form for food costers to circle: 1) yes, 2) no, and 3) unsure. For each item surveyed space was also provided to record place of origin and dealer address information.

Revisions to the form in 2010 included an updated food list from the most recent (2008) NNFB (12), as well as space to record product brand names. Furthermore, in an additional local food information column, food costers were asked to place a checkmark next to each method used to verify that the food item was local: 1) label, 2) signage, 3) asked staff, and 4) other. Anecdotal findings from food costers in previous studies indicated that the information on food labels and in-store signage sometimes lacked the information they required to complete the survey form (8, 30). Sometimes a food label may contain the address of a distributor, rather than that of the producer. Food costers were instructed to ask the store staff for additional information when necessary, particularly when trying to ascertain the origin of fresh produce and store-packaged items such as meat products. For the purpose of the 2010 food costing survey, *local* was defined as grown or produced in the Maritime Provinces, consisting of New Brunswick, Nova Scotia and Prince Edward Island (31).

**4.2.1.3 Food Coster Training.** In May and June 2010 throughout Nova Scotia standardized training workshops were conducted with the participatory food costers,

individuals who were affiliated with Family Resource Centres/Projects or other community-based programs and who had experience with the issue of food security (11). The training workshops were based on a *train-the-trainer* approach (12, 138), previously used in Nova Scotia food costing research (9, 12) and provided an introduction to food costing and food security, as well as an overview of previous food costing results. The workshops also included a field trip to a local grocery store in order for participants to become familiar with using the food costing survey form. This researcher participated in all of the activities in the first training workshop and presented the 2007 and 2008 local food results (10, 11, 30) to the participants.

**4.2.1.4 Food Costing.** The food costers worked in pairs to conduct food costing surveys pertaining to locally produced foods in a sample of grocery stores (n=46) throughout Nova Scotia. For each of the 67 items on the adapted NNFB the food costers were responsible for first comparing the prices of the specified size and then recording the lowest available price in addition to other relevant information indicated on the form. In order to minimize the effects of price fluctuations on the data collected, food costing took place within a specified time period, June 11 to 24, 2010. Previous research conducted in Montreal found that grocery prices are lowest during the weeks that social welfare cheques are received (139). A two-week period was selected for the 2010 food costing in Nova Scotia in order to determine whether there is a significant difference in food pricing during the week that the Canada Child Tax Benefit payment is made to eligible families. The completed food costing survey forms were mailed to the provincial food costing coordinator. Each food coster received an honorarium for participation, as

well as support for travel and childcare through the Nova Scotia Participatory Food Costing Project.

#### **4.2.2 Data Analysis – Phase I**

Prior to data entry, each pair of completed survey forms was compared to determine if there were any inconsistencies in the data provided. A record was made of any issue that was detected and, if necessary, how the issue was resolved before data entry began. For example, one form may have been missing information that was entered on the other form completed at the same grocery store. If so, a correction was made and noted. In addition, if food costers' included any anecdotal comments on the survey forms, the comments were recorded for future reference.

The food costing survey data were entered into Microsoft® Office Excel® (Microsoft Corporation, Redmond WA, 2007) spreadsheet, the *Thought About Food? Food Costing Survey Workbook* (140), adapted from food costing forms designed by the Ontario Ministry of Health and Long-Term Care (138). First, either the figure one or zero was entered into selected spreadsheet cells to indicate whether or not a local NNFB option was available for each of the 67 NNFB items at each of the 46 grocery stores, and whether or not the local NNFB option was lowest in price relative to non-local NNFB items. If, however, the origin of the NNFB item could not be determined, the letter U was entered into the appropriate cell on the spreadsheet.

For each grocery store the total number of NNFB items with a local option, and with a local option at the lowest price, was computed. Next, the totals for each store were divided by 67 to obtain the percentage of food items for which a local NNFB option was available, as well as the percentage of food items for which the local NNFB item was

lowest in price relative to similar non-local NNFB options. These percentages were then averaged across all the grocery stores in each category (rural/urban, smaller/larger, and by DHA location). Independent t-tests and one-way analysis of variance (ANOVA) were conducted to determine whether the extent of local availability, or the extent of local availability at the lowest price, varied significantly between the categories. The results were then summarized in tables and graphs.

#### **4.2.3 Data Collection – Phase II**

**4.2.3.1 Focus Group Recruitment.** Through purposive sampling (141), members of agricultural awareness, health and nutrition committees/organizations in Nova Scotia were invited to participate in a focus group interview with other members of their committee/organization. Multiple focus groups were convened in order to strengthen the credibility of the findings (142, 143). Potential participating groups were identified from a list of members of the Nova Scotia Participatory Food Costing Project research team and their partner organizations (11), as well as from a list of groups identified by the Department of Agriculture as supporters of the buy local campaign (2, 28). Students and staff working at the Participatory Action Research and Training Centre on Food Security at Mount Saint Vincent University volunteered to participate in the pilot focus group. Members of the following stakeholder groups were then invited to participate in the focus group interviews to be conducted for this study: the Coordinating Committee and the Participatory Food Costing Working Group of the Nova Scotia Food Security Network, the Food Action Committee of the Ecology Action Centre, the Nova Scotia Agricultural Awareness Committee, the Nova Scotia Food Policy Council, the Nova Scotia Nutrition

Council and the Department of Applied Human Nutrition at Mount Saint Vincent University.

The composition of focus groups can enhance the trustworthiness of research findings (143). The committees/organizations selected for focus group recruitment in this study have mandates related to the topic of this research. Consequently, their members have expertise in one or more related areas, such as nutrition, health and local food systems. The mandates of these committees/organizations differ, however, and their members also have different roles, so participating members may have been able to provide different perspectives of the issues under discussion.

Invitations were sent by mail/e-mail to each of these committees/organizations via the chair/gatekeeper. Each chair/gatekeeper was contacted again within a specified time to determine whether the committee/organization was interested in participating, and if so, to identify the names and contact information of members who wished to participate. A convenient time and date for each focus group was then arranged. The invitations included an abstract of the proposed study as well as a copy of the interview questions (Appendix D). Ideally, focus groups consist of four to eight participants (144). If, however, participation in a focus group interview was not feasible for an organization, the option of an individual interview was provided. Each participant was asked to read and sign a free and informed consent form, as well as an audiotape consent form, before participating in the focus group or individual interview (Appendices E & F). In addition, focus group members were requested to read and sign a confidentiality form before participating (Appendix G).

**4.2.3.2 Focus Group/Individual Interviews.** A series of seven focus group interviews, including the pilot, and one individual interview took place at a convenient time and place for participants. The scheduled duration of each interview was approximately 60 to 90 minutes. A semi-structured interview guide was used to stimulate and facilitate discussion (145) pertaining to the implications of local food availability and relative cost for food security and healthy eating (Appendix H). The interview guide consisted of questions compiled by the investigator and members of the thesis committee who have expertise in pertinent areas, including participatory food costing, food security, local food systems, nutrition and statistics. The interview began with broad questions (145) pertaining to local foods, and then become more focussed (145) with questions pertaining to the 2010 local food costing results. Thus, within the conceptual framework of CFS, the interview focussed on the relationships between local food system components, including the availability and cost of locally produced foods, and the overall health of the community (122). A digital audio recording of each interview was created. Field notes documenting the researcher's preliminary interpretations of the data were taken during and/or immediately following each session. In order to ascertain whether any changes were warranted the guide was pilot tested (145) with a group of volunteers (n=7). The guide used during the pilot focus group interview remained unchanged for the seven other interviews.

#### **4.2.4 Data Analysis – Phase II**

Digital audio recordings of the focus group interviews were transcribed verbatim, but without any information that could identify individual participants. The first step in data analysis was one of familiarization, which consisted of listening to the recordings

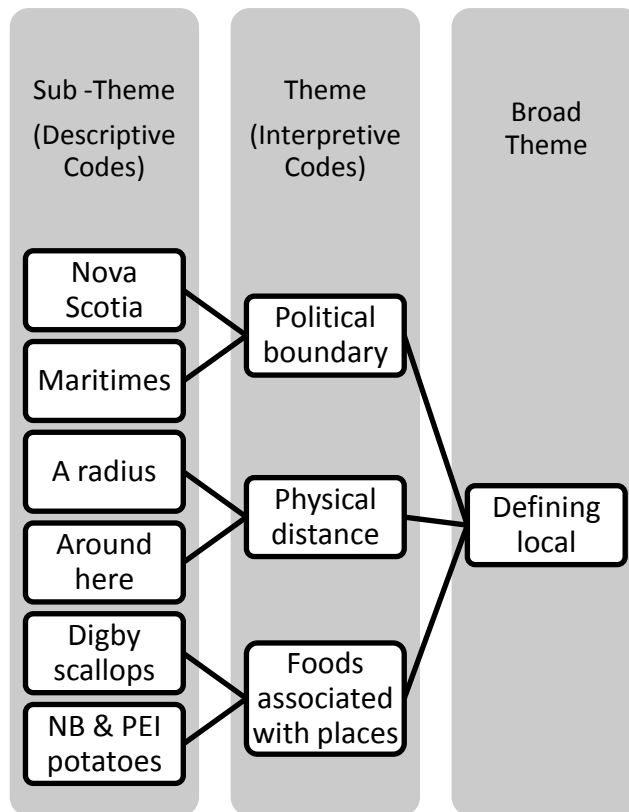
and reading the transcripts (146). Summaries of the focus group interviews were written and sent to participants for feedback by a specified date. This served as a form of member checking whereby the participants were able to confirm the credibility of the interpretation of the transcripts (142). In response to minor changes suggested by participants, revisions were made and the revised summaries were returned to the participants for approval.

The interview transcripts were entered into the qualitative research software program, NVivo (QSR International Pty Ltd., Version 9, 2010). The interview guide and research objectives were used as a framework to assist with organizing, interpreting and describing participants’ responses to the interview questions (145). Conventional qualitative content analysis (147) was then employed to explore participants’ views on the implications of the qualitative findings in promoting and supporting food security and healthy eating in Nova Scotia. Descriptive codes were applied to selected areas of text relevant to the purpose of this study (1) (Table 1). Then the descriptive codes were clustered according to similarity in meaning, interpreted in relation to the research objectives, and categorized into broad themes (1) (Figure 2).

**Table 1:** Example from Current Study Depicting Stages of the Coding Process in Thematic Analysis as Described by King and Horrocks (1)

<b>Participants’ Comments</b>	<b>Stage 1: Descriptive Coding</b>	<b>Stage 2: Interpretive Coding</b>	<b>Stage 3: Broad Thematic Coding</b>
<i>Local is starting as close as I can find it and moving on out.</i>	A radius	Physical distance	Defining local





**Figure 2.** Hierarchical grouping of a sample of codes selected from the theme, defining local

The audio recordings, as well as the researcher’s field notes taken during and/or immediately following each session, were used to assist with interpretation (145, 148). Consistency in coding was strengthened by having the same researcher code all of the transcripts (143). Validity was enhanced with a peer review (142) conducted by members of the thesis committee who reviewed the qualitative data analysis (143), provided feedback (143, 149) and assisted with the clarification of interpretations (149).

### **4.3 Limitations**

Limitations of local food costing in grocery stores in Nova Scotia have been previously identified (9, 30). Food labels and grocery store signage may not contain sufficient product information in order for food costers to determine the origin of food products (9, 30). In addition, human error in data recording and analysis may occur (30). In order to minimize the effects of these limitations food costers participated in a food costing training session and the food costing data were checked twice for accuracy by different individuals. The food costing survey was conducted during the month of June in order to neutralize the effects of seasonality on the availability and price of locally produced foods. Some locally grown vegetables, however, such as fresh carrots and broccoli, may have limited availability in June (9, 30).

Limitations of focus groups interviews in research have also been identified in the literature (143, 150). During the group interview moderator bias may influence group interaction (150) and the group discussion may be dominated by certain participants (150). Moreover, the data gathered during the interview may be complex and difficult to analyze (143). Attempts were made to reduce the effects of such limitations by creating an interview guide, conducting a pilot focus group, and analyzing the pilot focus group transcript in order to assess whether any changes in the interview procedures were warranted. Moreover, as previously described, a transcript summary was sent to participants for feedback and a peer review of the transcripts was conducted.

### **4.4 Ethical Considerations**

Ethics approval was received from the MSVU Research Ethics Board prior to the start of this study. The secondary data analyzed in this study were collected as part of the

2010 Nova Scotia Provincial Participatory Food Costing Project (16). These data did not contain any personal information. In order to ensure confidentiality none of the participating grocery stores were identified, and the relative price of food items in individual stores was not reported.

All participants recruited for this study were asked to read and sign a general consent form, as well as an audio recording consent form, before participating (Appendices D & E). The participants were informed that their participation in this study was voluntary and that they could withdraw at any time. Focus group interview participants were also asked to sign a focus group confidentiality form (Appendix F). The only incentive offered during each focus group interview was the provision of locally-sourced refreshments (food and beverages). Although it is was not possible to guarantee that participants would not share opinions expressed in the focus groups, no personal information was shared, so the potential risks appeared to be minimal. Pseudonyms were used in the transcriptions, and neither the participants' names nor any possible identifiers will be used in any resulting documents. All electronic files of survey data, audio recordings and transcripts were password protected. Audio recording files were erased following transcription and analysis. The electronic files containing the survey data and transcripts will be securely stored at MSVU for five years after completion of this study before being erased. After the study was completed, focus group participants interested in obtaining the results were sent a summary by mail or e-mail.

## **CHAPTER 5: RESULTS – PHASE I**

### **5.1 Introduction**

This local foods study was conducted in two phases. The objective of the first phase of this research was to determine the availability and relative cost of nutritious, locally produced foods in grocery stores throughout Nova Scotia in 2010. The second phase of this study then examined, from the perspectives of key stakeholder groups, the implications of local food availability and relative cost for food security and healthy eating in Nova Scotia. For these purposes *local* was defined as the Maritimes, consisting of New Brunswick, Nova Scotia and PEI. This chapter provides the results of the quantitative analysis of the local food data collected during participatory food costing in grocery stores throughout Nova Scotia in June 2010 (16).

### **5.2 Availability of Local NNFB Items**

#### **5.2.1 At Any Price**

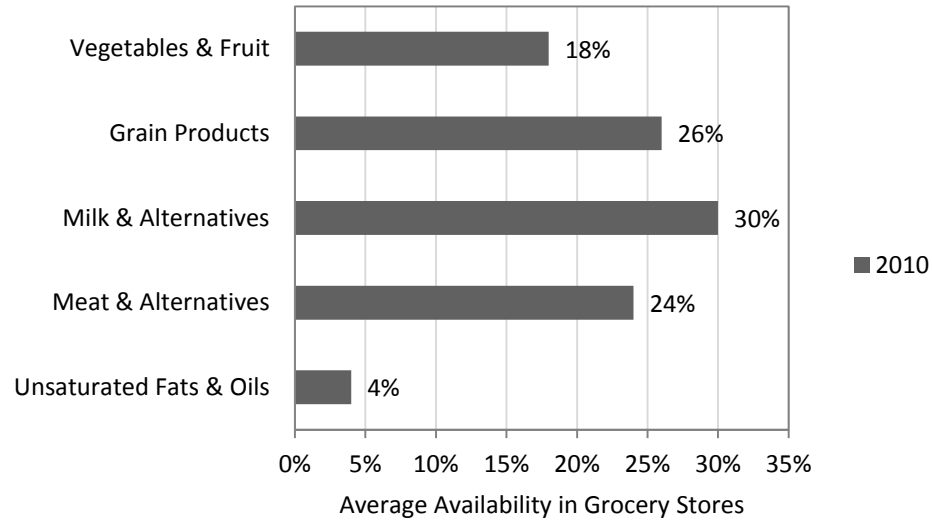
Analysis of the June 2010 participatory food costing survey revealed that the availability of locally produced NNFB items in grocery stores in Nova Scotia ranged from 0%, which applied to 15 food items, to 100% availability for one item only, namely white potatoes (Table 2). On average, 20.7% of the NNFB items in grocery stores were locally produced in the Maritime Provinces (Appendix I). Further analysis revealed that 16.1% of the NNFB items surveyed were products of Nova Scotia.

**Table 2.** Availability of Locally Produced National Nutritious Food Basket (NNFB) Items in a Random Selection (n=46) of Grocery Stores in Nova Scotia, June 2010

Food Item	Stores with Local Option (%)
Potatoes, white, raw	100
Milk, partly skimmed, 2% M.F.	96
Bread, whole wheat, sliced; Bread, white, sliced	93
Eggs, grade A large	78
Onions, raw	74
Rolls, hamburger	70
Apple juice, canned or bottled, added vitamin C	61
Apples, raw	59
Peanut butter, smooth type, fat, sugar and salt added	41
Turnip (rutabaga), raw; Bread, pita, whole-wheat	39
Pork, loin, centre chop, bone-in	37
Beef, ground, lean	33
Ham, sliced, regular (approximately 11% fat)	30
Chicken, legs; Tomatoes, red, raw	28
Cheese, cheddar; Orange juice, frozen concentrate; Beef, hip, inside (top) round steak; Fish (sole, haddock, pollock, halibut), frozen; Mushrooms, raw	26
Beef, hip, inside (top) round roast; Cucumbers, raw; Cabbage, raw	22
Vegetables, mixed, frozen	20
Cereal, oats, quick cooking	17
Cheese, mozzarella, partially skim (52% water, 16.5% M.F.); Yogurt, fruit bottom, 1% to 2% M.F.; Peas, green, frozen; Flour, whole wheat	13
Flour, white, enriched, all purpose	11
Strawberries, frozen, unsweetened; Lettuce, cos or romaine; Corn, canned vacuum packed; Margarine, tub, non-hydrogenated	9
Broccoli, raw; Lettuce, iceberg; Beans, baked, canned in tomato sauce	7
Lentils, dry; Sweet potatoes, raw; Peppers, sweet, green, raw; Salad dressing, mayonnaise type	4
Cheese, processed food, cheddar, slices; Beans, snap, frozen; Salmon, pink, canned; Carrots, raw; Celery, raw; Tomatoes, canned, whole; Pasta, spaghetti, enriched; Vegetable oil, canola; Salad dressing, italian, regular	2
Peanuts, dry roasted; Tuna, light, canned in water; Oranges, all commercial varieties, raw; Melon, cantaloupe, raw; Bananas, raw; Pears, raw; Grapes, red or green, raw; Vegetable juice cocktail; Peaches, canned halves or slices, juice pack; Raisins, seedless (sultana); Cereal, bran flakes with raisins; Cereal, toasted oats Os; Cookies, plain (arrowroot, social tea); Crackers, saltine, unsalted top; Rice, white, long grain, parboiled	0

**Table 3.** Availability of Locally Produced National Nutritious Food Basket (NNFB) Items by Food Group in a Random Selection (n=46) of Grocery Stores in Nova Scotia, June 2010

<b>Predominantly Available (70%-100%)</b>	<b>Frequently Available (40%-69%)</b>	<b>Sometimes Available (10%-39%)</b>	<b>Rarely or Not Available (&lt;10%)</b>
<b>Vegetables &amp; Fruit</b>			
Potatoes, white, raw Onions, raw	Apple juice, can/bottle Apples, raw	Turnip (rutabaga), raw Tomatoes, red, raw Orange juice, froz. con. Mushrooms, raw Cucumbers, raw Cabbage, raw Vegetables, mix., froz. Peas, green, frozen	Strawberries, frozen Lettuce, cos or romaine Corn, canned Broccoli, raw Lettuce, iceberg Sweet potatoes, raw Peppers, sweet, green Beans, snap, frozen Carrots, raw Celery, raw Tomatoes, can, whole Oranges, raw Melon, cantaloupe, raw Bananas, raw Pear, raw Grapes, red or green Vegetable juice Peaches, canned halves Raisins, seedless
<b>Grain Products</b>			
Bread, wh. wheat, sl. Bread, white, sliced Roll, hamburger		Bread, pita, wh. wheat Cereal, oats, quick Flour, whole wheat Flour, white, a.p.	Pasta, spaghetti Cereal, bran, raisins Cereal, toasted oats Os Cookies, arrowroot Crackers, unsalted Rice, white
<b>Milk &amp; Alternatives</b>			
Milk, part skim, 2%		Cheese, cheddar Cheese, mozzarella Yogurt, fruit bottom	Cheese, process, slices
<b>Meat &amp; Alternatives</b>			
Eggs, Grade A large	Peanut butter, smooth	Pork, loin, centre chop Beef, ground, lean Ham, sliced, regular Chicken, legs Beef, hip, steak Fish (e.g. sole), frozen Beef, hip, roast	Beans, baked, canned Lentils, dry Salmon, pink, canned Peanuts, dry roasted Tuna, light, canned
<b>Unsaturated Fats &amp; Oils</b>			
			Margarine, tub Salad dressing, mayo. Vegetable oil, canola Salad dressing, Italian



**Figure 3.** Average availability of locally produced National Nutritious Food Basket (NNFB) items by food group in a random selection (n=46) of grocery stores in Nova Scotia, June 2010.

The National Nutritious Food Basket (NNFB) is comprised of 67 items from five groups of foods: vegetables and fruit, grain products, milk and alternatives, meat and alternatives, and unsaturated fats and oils (151). Locally produced items in the milk and alternatives group had the highest average availability (30%) in grocery stores (Figure 3). Each item in the milk and alternatives group is presented in Table 4 in one of the four categories which indicate the level of local availability: *predominantly available* (70%-100%), *frequently available* (40%-69%), *sometimes available* (10%-39%), and *rarely or not available* (<10%). As shown in Table 4, local fresh milk (96%) was predominantly available, while cheddar cheese (26%), mozzarella cheese (13%) and yogurt (13%) were sometimes available as local options. This food group also included locally processed cheese slices (2%) which were rarely available in grocery stores.

Approximately one fourth of the grocery stores had local items in the grain products group (26%) (Figure 3). Whole wheat (93%) and white (93%) sliced bread, as well as hamburger rolls (70%), were predominantly available in grocery stores (Table 4). Four other local grain products, namely pita bread, quick cooking oats, whole wheat flour and white flour, were sometimes available in stores. The six remaining items in the grain products food group were either rarely available or not available as local options in grocery stores.

Local items in the meat and alternatives group (24%) were also available in nearly one fourth of the grocery stores surveyed (Figure 3). Only locally produced eggs (78%) were predominantly available (Table 3). Another item, locally processed peanut butter (41%), was frequently available. Seven items, namely pork chops, ground beef, sliced ham, chicken legs, round steak, frozen fish and round roast, were sometimes available as local options in grocery stores. Five other local items in the meat and alternatives group were either rarely available or not available in stores.

Locally produced vegetables and fruit were available in 18% of grocery stores (Figure 3). Predominantly available local NNFB items in this food group included white potatoes (100%) and onions (74%) (Table 3). Locally produced apple juice (61%) and locally grown apples (59%) were frequently available in grocery stores. Eight local NNFB items, namely turnip, tomatoes, frozen orange juice concentrate, mushrooms, cucumber, cabbage, frozen mixed vegetables, and frozen green peas, were sometimes available in stores. The remaining 18 items in the vegetables and fruit group were either rarely available or not available as local options in grocery stores.



Local items in the unsaturated fats and oils group (4%) were not widely available in grocery stores throughout Nova Scotia (Figure 3). All four items in this food group were found in less than 10% stores (Table 3).

Thus, approximately half (52%) of the 67 NNFB items surveyed were rarely or not available as local options (Table 3). Only 7 of the 67 NNFB items (10%) were predominantly available as local options in grocery stores.

**5.2.1.1 Local Labelling and Signage.** According to the food label information recorded on the survey forms, some of the food labels appeared to contain the addresses of a distributor or importer, rather than that of the producer. For example, although some packages of frozen fish fillets and frozen strawberries displayed the address of local companies, the packages were also labelled *Product of China*. Anecdotal findings from some of the food costers revealed that they were confused by such labelling, and therefore circled the word *unsure* on the form: “*Package has both China and Nova Scotia listed*” (S11). Some food costers, however, recorded all of this information, but considered the items to be local products.

Some containers of eggs that were marketed under a store brand displayed the address of the retailer’s head office in Ontario. Although it is likely, as a result of supply management regulations, that the eggs were locally produced, they were not recorded as such. Conversely, the labels on containers of yogurt that may have been produced in Quebec, but sold in grocery stores in Nova Scotia, displayed several regional addresses, including one from Nova Scotia. Therefore, this item was sometimes recorded on survey forms as locally produced. Also, although some grain products, such as sliced bread, may

have been produced locally, the main ingredients were probably non-local in origin. Such grain products would also have been recorded as *local* by the food costers.

When food costers could not determine the origin of an item, they indicated so by circling the word *unsure* on the survey form. With regard to particular food items, only fresh meat and produce items had more than six *unsure* responses per item. Four items (chicken legs, round steak, pork loin and lean ground beef) in the meat and alternatives group received 6-10 *unsure* responses each. Sometimes when costers inquired about the origin of items in this food group the staff members were not able to provide them with adequate information: “*Asked woman about meats: Beef...from Ont, Western Can and NB....Chicken...from NB or Toronto*” (S35).

In the vegetables and fruit group there were seven items (apples, broccoli, cucumber, green peppers, tomatoes, romaine lettuce and sweet potatoes) that received 6-10 *unsure* responses per item. Furthermore, two items, cabbage and turnip, received 18 and 20 *unsure* responses, respectively. The most frequent reason cited in anecdotal comments from food costers was that some of the fresh produce items lacked adequate label and/or signage information: “*No information available for sweet potatoes, cabbage (no box), turnip (no box) and green peppers*” (S33). In reference to an *unsure* response for the origin of cabbage, one coster wrote, “*Nothing noted on signs or produce other than Product of Canada*” (S26). Although some items, such as apples, were displayed with regional place of origin information, it was not specific to the Maritimes: “*Says it is Atlantic harvest - some growers are local*” (S13). Some costers noted that they had asked the staff for more information:

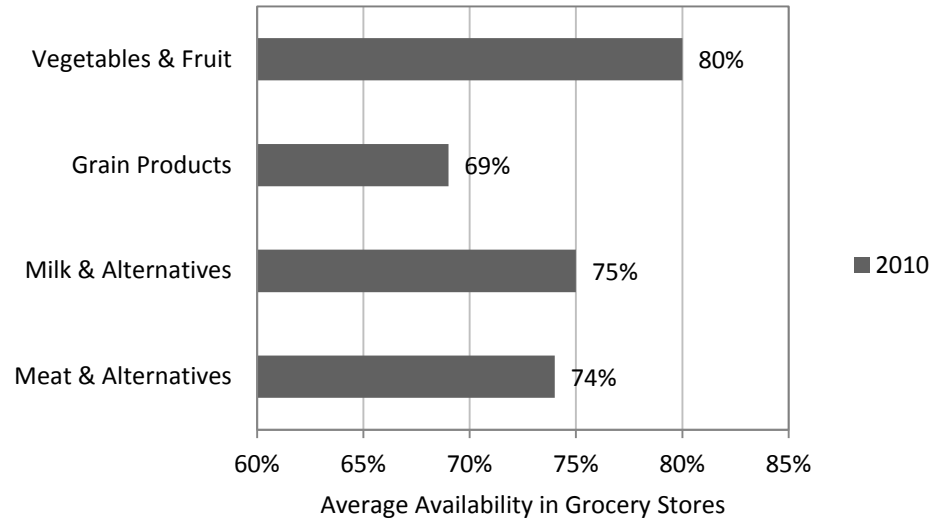
*Asked staff re source of melon, turnip and sweet potato, but staff didn't know.*  
(S44)

*We asked the Manager where the vegetables and fruits came from because there were no signs that said where they came from. The manager did not know were[sic] his vegetables and fruits came from. They came from their warehouse in Halifax and Toronto. That is what he said!!! (S3)*

In cases where no definitive label or signage information was available, items with an *unsure* response were recorded as non-local foods. In determining whether the lowest priced item was local, food costers entered *unsure* an average of six times per store, with a range of 0-24 *unsure* responses per grocery store.

### **5.2.2 At the Lowest Price**

In 75.4% of the grocery stores with local availability the locally produced NNFB items were lowest in price (Appendix I). Local vegetables and fruit were priced lowest in 80% of grocery stores with local availability (Figure 4). Local items in the milk and alternatives (75%), and meat and alternatives (74%) were the lowest priced options in approximately three fourths of grocery stores with local availability, whereas local grain products were priced lowest in 69% of stores with local availability. Local items in the unsaturated fats and oils group were rarely or not available in grocery stores.



**Figure 4.** Average availability of lowest price local National Nutritious Food Basket (NNFB) items by food group\* in a random selection (n=46) of grocery stores with local option in Nova Scotia, June 2010

\*Food items in the unsaturated fats and oils group were rarely or not available in grocery stores

More than half (56%) of the local NNFB items were predominantly available as the lowest priced options in grocery stores (Table 4). Seven of these food items, namely fresh milk, round steak, pork chops, round roast, onions, cabbage and turnip, were always the lowest priced options in grocery stores (Table 5). All other local NNFB food items were either frequently or sometimes available at the lowest price (Table 5).

**Table 4.** Cost of Locally Produced National Nutritious Food Basket (NNFB) Items Compared with Non-Local NNFB Items in a Random Selection (n=46) of Grocery Stores in Nova Scotia, June 2010\*

<b>Lowest Price Local</b>			
<b>Predominantly (70%-100%)</b>	<b>Frequently (40%-69%)</b>	<b>Sometimes (10%-39%)</b>	<b>Rarely or Not Lowest Price (&lt;10%)</b>
<b>Vegetables &amp; Fruit</b>			
Onions, raw	Tomatoes, red, raw	Vegetables, mixed, froz.	
Cabbage, raw	Cucumbers, raw	Orange juice, froz. conc.	
Turnip (rutabaga), raw	Apple juice, can/bottle	Peas, green, frozen	
Potatoes, white, raw			
Mushrooms, raw			
Apples, raw			
<b>Grain Products</b>			
Bread, white, sliced	Rolls, hamburger	Flour, white, a.p.	
Bread, whole wheat		Flour, whole wheat flour	
Bread, pita, whole wheat		Cereal, oats, quick	
<b>Milk &amp; Alternatives</b>			
Milk, partly skim., 2%		Cheese, mozzarella	
Yogurt, fruit bottom		Cheese, cheddar	
<b>Meat &amp; Alternatives</b>			
Beef, hip, steak	Eggs, grade A large	Peanut butter, smooth	
Pork, loin, centre chop			
Beef, hip, roast			
Beef, ground, lean			
Chicken, legs			
Fish (e.g. sole), frozen			
Ham, sliced, regular			
<b>Fats &amp; Oils</b>			

\*Table includes only items with availability >10%

**Table 5.** Locally Produced National Nutritious Food Basket (NNFB) Items Available at the Lowest Price Relative to that of Non-Local NNFB Items in Grocery Stores in Nova Scotia, June 2010\*

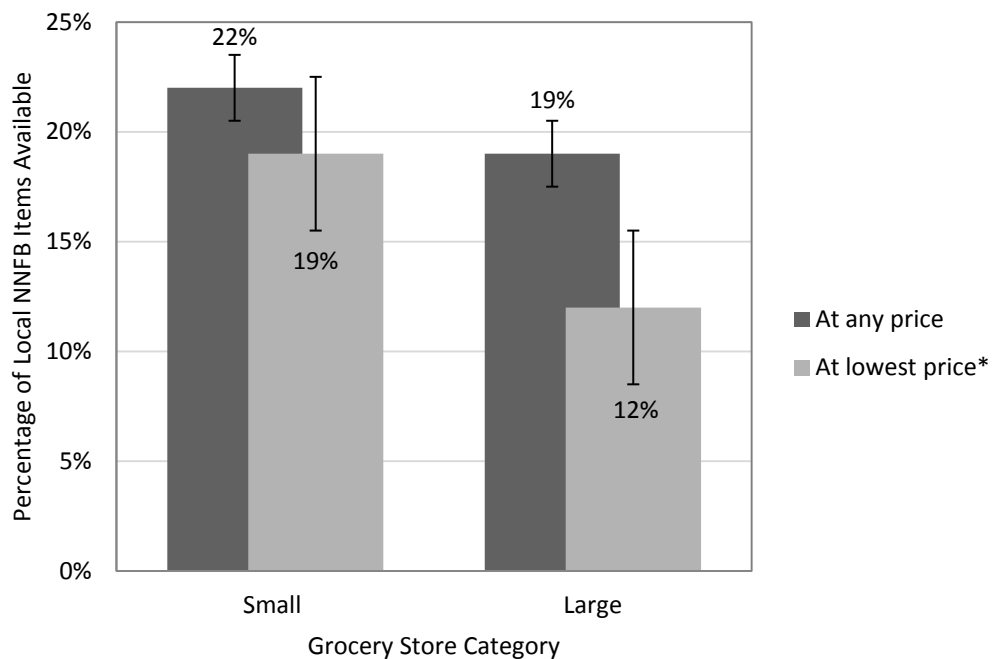
<b>Food Item<sup>a</sup></b>	<b>Availability in Stores with Local Option at Lowest Price (%)</b>
<b>Milk</b> , partly skimmed, 2% M.F.; <b>Beef</b> , hip, inside (top) round steak; <b>Pork</b> , loin, centre chop, bone-in; <b>Beef</b> , hip, inside (top) round roast; <b>Onions</b> , raw; <b>Cabbage</b> , raw; <b>Turnip</b> (rutabaga), raw	100
<b>Potatoes</b> , white, raw	96
<b>Beef</b> , ground, lean	93
<b>Chicken</b> , legs; <b>Fish</b> (sole, haddock, pollock, halibut), frozen; <b>Mushrooms</b> , raw	92
<b>Bread</b> , white, sliced	88
<b>Bread</b> , whole wheat, sliced	86
<b>Apples</b> , raw	85
<b>Yogurt</b> , fruit bottom, 1% to 2% M.F.	83
<b>Ham</b> , sliced, regular (approximately 11% fat)	79
<b>Bread</b> , pita, whole-wheat	72
<b>Tomatoes</b> , red, raw	62
<b>Cucumbers</b> , raw	60
<b>Eggs</b> , grade A large	53
<b>Apple juice</b> , canned or bottled, added vitamin C; <b>Rolls</b> , hamburger	50
<b>Vegetables</b> , mixed, frozen	33
<b>Orange juice</b> , frozen concentrate	25
<b>Flour</b> , white, enriched, all purpose	20
<b>Cheese</b> , mozzarella, partially skim (52% water, 16.5% M.F.); <b>Cheese</b> , cheddar; <b>Peas</b> , green, frozen; <b>Flour</b> , whole wheat flour	17
<b>Cereal</b> , oats, quick cooking	13
<b>Peanut butter</b> , smooth type, fat, sugar and salt added	11

\*Table includes only items with availability >10%

<sup>a</sup> Sorted by percent availability

### 5.2.3 Small Versus Large Grocery Stores

Survey results revealed that 22% of NNFB items in small grocery stores and 19% of these food items in large stores were products of the Maritime Provinces (Figure 5). This difference was not statistically significant,  $t(44) = -1.28$ ,  $p > .20$ . The findings further revealed that in small grocery stores 19% of the NNFB items at the lowest available price were locally produced, whereas only 12% of the lowest priced NNFB items in large stores were local. This difference was statistically significant,  $t(44) = 2.68$ ,  $p < .05$ .



**Figure 5.** Availability of locally produced National Nutritious Food Basket (NNFB) items in small versus large grocery stores<sup>a</sup> in Nova Scotia, June 2010.

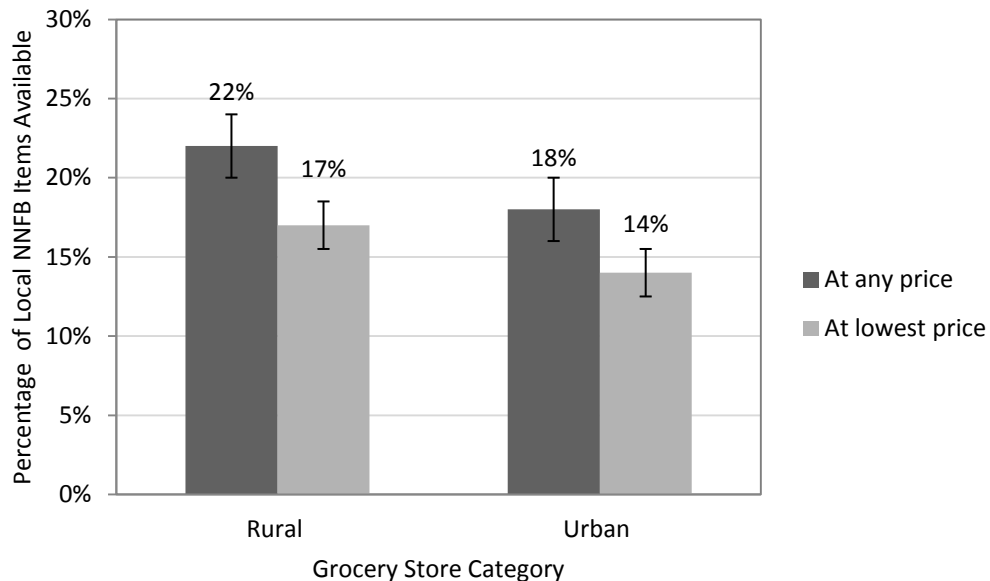
\*Significant difference in availability of local NNFB items at the lowest price in small versus large grocery stores

<sup>a</sup>The sample (n=46) consisted of 23 small and 23 large grocery stores.

### 5.2.4 Rural Versus Urban Grocery Stores

Analysis of the local food costing results revealed that 22% of NNFB items in rural grocery stores and 18% of these food items in urban stores were produced or grown in the Maritime Provinces (Figure 6). This difference was not statistically significant,  $t(42) = 1.79, p > .08$ .

The availability of local NNFB items at the lowest price option was 17% in rural grocery stores and 14% in urban stores (Figure 6). This difference was not statistically significant,  $t(44) = 1.30, p > .20$ .



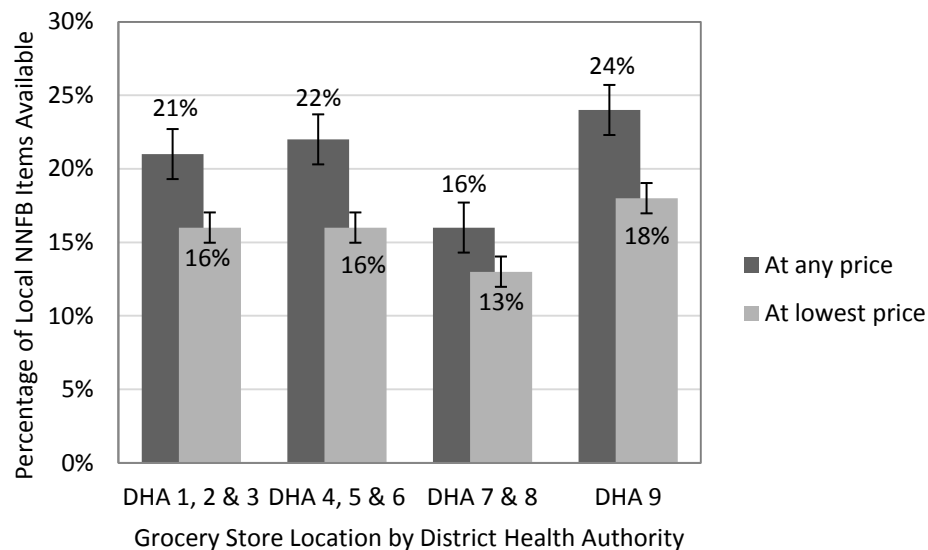
**Figure 6.** Availability of local National Nutritious Food Basket (NNFB) items in rural versus urban grocery stores\* in Nova Scotia, June 2010.

\*The sample (n=46) consisted of 30 rural and 16 urban grocery stores.



### 5.2.5 District Health Authority Location

Local food availability ranged from 16% of NNFB items in grocery stores located in District Health Authorities (DHAs) 7 and 8 to 24% of NNFB items in grocery stores situated in DHA 9 (Figure 7). Local foods had the lowest price among similar food options for 13% to 18% of NNFB items available in grocery stores located in various DHAs in the province. The differences in local food availability were not statistically significant, however (Appendix J).



**Figure 7.** Availability of local National Nutritious Food Basket (NNFB) items in grocery stores\* according to location by District Health Authorities (DHAs) in Nova Scotia, June 2010.

\* Samples ranged from 9 to 16 grocery stores

### 5.3 Summary

Analysis of the data collected for the local component of the 2010 Nova Scotia Participatory Food Costing Project revealed that, on average, 20.7% of NNFB items in grocery stores were produced in the Maritime Provinces. No significant difference was

found in the availability of locally produced NNFB items according to grocery store size or location throughout Nova Scotia. In 75.4% of grocery stores where local NNFB items were available the item with the lowest price was the local option. Significantly more local NNFB items were available at the lowest price in small versus large grocery stores.

## **CHAPTER 6: RESULTS – PHASE II**

### **6.1 Introduction**

The first phase of this research determined the availability and relative cost of nutritious, locally produced foods in grocery stores throughout Nova Scotia in June 2010. Local foods were considered to be those grown or produced in the Maritime Provinces, comprised of New Brunswick, Nova Scotia, and PEI. The second phase of this study then examined, from the perspectives of members (n=28) of stakeholder organizations (n=7), the implications of local food availability and its cost relative to comparable non-local food items for food security and healthy eating in Nova Scotia. This chapter presents the findings from the qualitative analysis of these focus group/individual interviews (n=8) which were conducted from June 2011 to January 2012.

### **6.2 Focus Group Recruitment**

The students and staff working at the Participatory Action Research and Training Centre on Food Security at Mount Saint Vincent University were invited to participate in a pilot focus group in order to evaluate the process for subsequent groups and ascertain whether any changes in the interview guide were necessary. The pilot group, which consisted of seven volunteers, was conducted during June 2011 (Table 6). The outcome of the pilot focus group revealed that the interview was conducted within the time allotted and that no modifications to the interview guide were required. Qualitative analysis of the interview transcript from the pilot group was used to form the framework for analyzing the data from subsequent interviews. Findings from the pilot group are included in the following presentation and discussion of the qualitative results of this study.

**Table 6.** Recruitment Results for Local Food-Related Interviews with Members of Stakeholder Organizations in Nova Scotia, 2011-2012

<b>Interview</b>	<b>Date</b>	<b>Place of Interview</b>	<b>Organization</b>	<b>No. of Participants</b>
1 (Pilot)	June 28, 2011	Halifax	Participatory Action Research and Training Centre on Food Security, Mount Saint Vincent University	7
2	Sept. 29, 2011	Halifax	Food Action Committee of the Ecology Action Centre	2
3	Oct. 13, 2011	Truro	Nova Scotia Agricultural Awareness Committee	8
4	Nov. 1, 2011	Halifax	Department of Applied Human Nutrition at Mount Saint Vincent University	2
5	Nov. 24, 2011	Halifax	Nova Scotia Nutrition Council	4
6	Dec, 2, 2011	Wolfville	Nova Scotia Food Policy Council	2
7	Jan. 17, 2012	Teleconference	Food Costing Working Group of the Nova Scotia Food Security Network Coordinating Committee	2
8	Jan. 31, 2012	Telephone	Coordinating Committee of the Nova Scotia Food Security Network	1

Members of the following stakeholder groups were then invited to participate in a series of focus group interviews to be conducted for this study: the Coordinating Committee and the Food Costing Working Group of the Nova Scotia Food Security Network, the Food Action Committee of the Ecology Action Centre, the Nova Scotia Agricultural Awareness Committee, the Nova Scotia Food Policy Council, the Nova

Scotia Nutrition Council, and the Department of Applied Human Nutrition at Mount Saint Vincent University. A positive response was received from each of these organizations/committees, and the recruitment results are summarized below (Table 6). Although one focus group interview was planned for members of the Coordinating Committee and the Food Costing Working Group of the Nova Scotia Food Security Network, the initial group interview was followed by an individual interview with a participant who had been unable to attend previously as planned.

### **6.3 Focus Group/Individual Interviews**

A conceptual framework of Community Food Security (CFS) was utilized to develop the questions in the interview guide, and thereby focus the group discussions on the relationships between local food system components, particularly the availability and cost of locally produced foods and the implications for the health of the community (122). The interview began with broad questions (145) to encourage discussion about local foods and ascertain participants' initial reactions to availability and relative cost. The questions then became more focussed in order to identify not only local food issues, but also opportunities for strengthening food system components and guiding local food system development in Nova Scotia. Thus, contributions from the participants were organized into the following broad themes based on the questions in the interview guide: (1) defining *local*, (2) reactions to availability, (3) impressions of relative cost, (4) local food issues, (5) local food opportunities, and (6) food costing recommendations (Table 7). Within each of these broad themes, themes (interpretive codes) and sub-themes (descriptive codes) have been identified in order to provide a comprehensive

understanding of participants' views on the implications and application of the research findings in promoting and supporting food security and healthy eating in Nova Scotia.

**Table 7.** Summary of Local Food-Related Themes Generated from Focus Group/Individual Interviews with Members of Agricultural Awareness and Nutrition Organizations in Nova Scotia, 2011-2012

Broad Themes	Themes – Sub-Themes
Defining <i>local</i>	<ol style="list-style-type: none"> <li>1. Physical distance – Close to home</li> <li>2. Political boundary – Nova Scotia</li> <li>3. Bioregion – Nova Scotia and beyond</li> <li>4. Foods associated with places – Prince Edward Island potatoes</li> <li>5. Additional aspects – Supporting the local economy</li> </ol>
Reactions to availability	<ol style="list-style-type: none"> <li>1. Initial reactions – Not surprised</li> <li>2. Implications for food security and healthy eating – Limited access to local foods</li> </ol>
Impressions of relative cost	<ol style="list-style-type: none"> <li>1. Initial impressions – Expected local to be more expensive</li> <li>2. Implications for food security and healthy eating – Increased demand for local</li> </ol>
Local food issues	<ol style="list-style-type: none"> <li>1. Local sourcing – Inconsistent/low availability</li> <li>2. Lack of supportive policies and regulations – Central distribution policy</li> <li>3. Consumer barriers – Affordability of local</li> </ol>
Local food opportunities	<ol style="list-style-type: none"> <li>1. Enable distribution of local foods to retailers – Support expenses related to UPC codes</li> <li>2. Examine policies, regulations and initiatives – Review initiatives and policies from elsewhere</li> <li>3. Invest in agriculture – Infrastructure</li> <li>4. Public awareness/education – Benefits of buying local</li> </ol>
Food costing recommendations	<ol style="list-style-type: none"> <li>1. To inform our work – Additional price comparisons</li> <li>2. Time of the survey – Each season</li> <li>3. Local definition – Issues with imported ingredients</li> <li>4. Food basket – Create a local basket</li> </ol>

### **6.3.1 Defining *Local***

Although the phrase *local food* is widely used, there is no established definition (37, 73). Therefore, in order to ascertain participants' interpretations of the concept, each focus group interview began with the question, "*When you think about local foods, what is your definition of local?*" Definitions of *local* varied among participants. During the qualitative analysis of the interview transcripts each response was assigned one or more descriptive codes. From these codes five main themes emerged to help explain participants' interpretations of *local*: physical distance, political boundary, bioregion, foods associated with places, and additional attributes.

**6.3.1.1 Physical Distance.** Across all interviews there were participants who explained that *local* might be thought of in terms of a physical distance, such as "*a radius outwards*" (G1-Q1-L33), "*around here*" (G1-Q1-L35) or "*close to home*" (G3-Q1-L49). No participant in this current study, however, defined *local* in terms of a specific distance: "*Local is starting as close as I can find it and moving on out. I have no mileage...suggestions. Buy as close as you can*" (G6-Q1-L14).

**6.3.1.2 Political Boundary.** For some participants the local radius did not extend beyond the provincial border. These participants generally agreed that *local* could be defined by the political boundary of the province of Nova Scotia in which they resided: "*Probably in Nova Scotia right now because it's the province we're in. I'd say Nova Scotia*" (G1-Q1-L12). Others mentioned that their definitions of *local* included the neighbouring provinces of New Brunswick and PEI in addition to their home province: "*I kind of think of it as the Maritimes as being local*" (G3-Q1-L51). There were also participants who considered *local* to be within the bounds of their own communities, but

who would be willing to expand the definition to include Nova Scotia, the Maritimes and beyond depending on the availability of food items:

*I've always looked at local in terms of community, I guess, so it just depends on how far that community goes, and the further you get away when you start talking thinking about New Brunswick, PEI and Nova Scotia. First, certainly comes where you live, and then your province, and then your region, and going out from there (G3-Q1-L27).*

Only one participant defined *local* by referring to the boundaries of a county: “*We, in my work, we've done like a local food guide for County X, so when I'm thinking, my first and kind of main prominent definition would be County X because that's where I live*” (G5-Q1-L12).

Participants in this current study also more frequently defined *local* with reference to their province rather than the country in which they lived: “*Maybe it's something that only can be grown in Southern Ontario or...the Okanagan Valley in BC. If that's the case then I consider if it's Canadian, it's local*” (G3-Q1-L15). The local radius thus ended at the Canadian border for several participants: “*Certainly when you go to other countries...it falls off that local definition*” (G3-Q1-L33). Yet, one participant felt that political boundaries should not always be considered when defining *local*: “*If I was visiting my family in Windsor, Ontario sometimes products from Michigan would actually be more local than if they came from inside of Ontario*” (G4-Q1-L14). For this participant close physical distance was more important than a political boundary in defining *local*.

**6.3.1.3 Bioregion.** Two participants considered ecological and physical geographical factors in defining *local*. One stated, “*I think of it as food that's produced in a bioregion. So, I mean, local for Nova Scotia could actually include a bit of a wider*



range depending on how you want to define it” (G2-Q1-L21). The other participant explained, “An environmental local, which is a physical-geographical local, in which case Maine...say highbush blueberries from Maine, would be considered more local than ones from British Columbia” (G3-Q1-L34).

**6.3.1.4 Foods Associated with Places.** Participants also defined *local* in terms of foods, particularly those grown in their backyard or picked nearby: “Now my understanding of local, at the very base, is whatever’s grown in your backyard” (G6-Q1-L39). Others mentioned foods purchased from local vendors: “Local as in local farmers’ market...local fruit stand...” (G5-Q1-L20). Some participants noted that certain foods, such as scallops from Digby, Nova Scotia (G1-Q1-L39) and potatoes from New Brunswick and PEI (G1-Q1-L23), might be associated with a local provenance: “I don’t know if I’d consider Digby...local, say for potatoes, but I would consider Digby local for scallops” (G1-Q1-L39). Other participants said that they even associate local with certain imported food items from other countries. For example, one participant commented, “It depends...too, like...I’d probably rather buy, like, oranges from Florida versus buying them from Argentina or wherever” (G5-Q1-L33).

**6.3.1.5 Additional Aspects.** Some of the participants qualified their definitions of *local* with additional aspects, further revealing the diversity and complexity of their interpretations.

**6.3.1.5.1 Relative factor.** One participant pointed out that *local* is relative to a person’s physical location: “I think the definition really varies depending on where you are” (G4-Q1-L16). Another determining factor mentioned was where a particular food

can be grown: *“Like, it depends. It’s all relative to where foods can actually be grown”* (G5-Q1-L35).

6.3.1.5.2 Seasonality. The concept of eating what is grown locally and in season is being promoted in the province as part of the *Select Nova Scotia* marketing campaign (2). Some of the participants associated local foods with eating seasonally: *“And, to me, I look at what makes sense for us to eat locally, and seasonally”* (G6-Q1-L46).

6.3.1.5.3 Economic support. Participants also stated that they associated *buying local* with supporting the economy and the farming community. For example, one participant said, *“There’s some type of contribution back to our economy...within Nova Scotia”* (G5-Q1-L55). Another participant stated, *“I would want to support a Canadian farmer”* (G3-Q1-L37).

6.3.1.5.4 Complexity. One participant had more than one definition of *local*: *“I’ve always struggled with this because I’ve two definitions of local”* (G3-Q1-L12). Other definitions provided by participants were more complex and were described by one participant as *“layered”* (G6-Q1-L21) and *“bipolar”* (G6-Q1-L55), and by another participant as *“rolling”* (G3-Q1-L38):

*Well, I have a layered definition to local...You know local is really, what could we, if we had to live in a low carbon society, what could we get to within a day’s walk. That is what we would need to survive on. For me, that’s local. But then if you lift the lid off that, in another sense our whole world is local!* (G6-Q1-L21)

*...so I have a real bipolar understanding of local at this point, and I’m comfortable with that bipolarization of it.* (G6-Q1-L54)

*For me the two components of it are, perhaps, say, an environmental local, which is a physical geographical local...But on the other hand there’s a political local which would mean that I would want to support a Canadian farmer. So I think...there’s a rolling definition...I like to try to do the best I can in terms of*

*choosing local, so most often it's a political local and I would support a Canadian producer. (G3-Q1-L34)*

### **6.3.2 Reactions to Local Food Availability**

The results pertaining to the local component of the 2010 Nova Scotia Participatory Food Costing Project (16) were first summarized in the form of graphs and charts for focus group participants, and then presented to each group in a slide-show format with accompanying handout. Following each presentation participants discussed their reactions to the level of local food availability. The main themes of this discussion, *initial reactions and implications for food security and healthy eating*, are presented and discussed in the following sections.

**6.3.2.1 Initial Reactions.** Across all groups participants' general expectations were that the availability of locally produced foods would be low: *"I'm not surprised at all by the findings"* (G6-Q3-L531). Some participants commented, however, that they had not predicted such a low level of availability of certain local fruits and vegetables. The following discussion depicts the initial reactions expressed by one group of participants:

P: *I'm surprised.*

P: *Yeah.*

P: *Some of them [results] are surprising.*

P: *It doesn't quite make sense to me. Why that's [low availability] the case? Things that are, yeah, so predominantly produced here? Like apples!*

P: *A lot of the fruits and vegetables, hey?*

P: *How could apples not be predominantly available?*

P: *Um, hm.*

P: *When there's such.*

P: *They're available year round.*

P: *Yeah.*

P: *Such a significant production locally.*

- P: *Hm.*
- P: *Yeah. I mean, I know the season plays a significant role in all of that, but in June.*
- P: *And they still store a lot of apples. [Farm X] ... has huge storage there!*
- P: *Exactly!*
- P: *So, yeah! It sounds like a missed opportunity to me! That's my first impression. (G5-Q3-L133-L163)*

Some participants had expected to see an increase in local food availability from 2007 to 2010. One of them commented:

*And I would have expected to see an increase in local food availability over the last few years in all categories because I, you know, at least I have a sense that there is a greater demand, but the numbers tell a different story. So, I'm really surprised and disappointed at the same time at both the low percentage and the absence of really significant growth. (G4-Q3-L61)*

Yet, other participants said that they were not surprised by the findings because they had taken into consideration the fact that there is seasonal variation in local food availability. One of them made the following comment concerning the survey findings: "*Considering that's June. That's not so bad*" (G6-Q3-L338).

**6.3.2.2 Implications for Food Security and Healthy Eating.** Participants clearly indicated their perceptions of the overall low availability of locally produced foods in grocery stores and the implications for food security and healthy eating in Nova Scotia.

6.3.2.2.1 Local associated with health and nutrition. Participants maintained that people are beginning to associate local foods with quality and health: "*Local foods are just healthier anyway because they're less processed compared to things that come in boxes*" (G1-Q4-L469). Participants predicted that buying local could have a positive impact on the overall health of Nova Scotians. One participant commented:

*So, if people continue to, you know, ride this wave of preferring to shop locally and eat local foods, then I think that will have like massive impact for health depending on who does it, who's getting on, you know, this healthy food, local food bandwagon. (G1-Q3-L474)*

Another participant pointed out that “*access to fresh, local foods can contribute to healthier eating*” (G4-Q3-L156).

6.3.2.2.2 Limited access to local foods. In considering the findings pertaining to the availability of locally produced foods in grocery stores, participants maintained that, when availability is low, Nova Scotians may have reduced access to nutritious, local foods: “*It's just the access issue and the availability of the local foods at the more convenient places that seems to be causing the biggest issue* (G1-Q4-L465). One of the concerns expressed was that, considering the low availability of locally produced fruits and vegetables in grocery stores, Nova Scotians may have limited access to local produce: “*If we want to go out and buy local foods we don't really even have the choice to do so for a lot of the produce that we want*” (G1-Q3-L237). Therefore, participants concluded that Nova Scotians may not be able to buy local produce and, as a result, may not obtain the health benefits: “*The fact that there's less of it [local produce] means that they aren't getting...a lot of your vitamins and minerals and...phytonutrients*” (G2-Q3-L154).

Yet, other participants asserted that if items from the NNFB are available, and also affordable, consumers can eat a healthy diet based on the non-local NNFB options found in grocery stores. One participant explained:

*I think, I mean, obviously from a purely healthy eating perspective it [availability of local foods] doesn't necessarily [influence healthy eating] unless we ran into a crisis. Right? The foods are available. They're just not local. So, you know, status quo being as it is, it wouldn't necessarily affect, depending on the food, I mean, obviously we know how much foods do lose nutrients the longer they're stored,*

*but even in some cases when we're eating apples in June, like they're, they've still been stored for a long time, too. So, it's kind of hard to say exactly, you know, I know there's research on it but I haven't read it, you know, in detail, but around how much, you know, nutrients, nutritional value is lost in shipping and storage and all that kind of stuff. And certainly it wouldn't, just because it's made here doesn't mean that we're consuming it only, you know, within the week that it was picked kind of a thing. (G5-Q3-L463)*

Although another participant agreed that local foods are not required for a healthy diet, she held the opinion that local food availability may serve to promote and complement healthy eating:

*And a lot of the policy that we have in Nova Scotia, I think, is really starting to promote, local food along with healthy eating. Because, certainly, when you remove food insecurity from the equation, you can still eat quite healthy without even thinking about local foods. But again...some of the local campaigns and some of the policy changes that we're seeing, you do see that local strength coming back out as one of the ways to help, or complement, healthy eating. (G4-Q3-L167)*

Some participants expressed concern that consumers may become accustomed to a low availability of local produce in grocery stores and not seek local options. As one explained:

*We grow a lot in Nova Scotia but it's not visible to people. So, that can have a negative impact as well, because I think that if people think that they can't get it from here they're more willing to accept it from somewhere else, which, it kind of changes your perception of where you should get your food from. (G1-Q3-L245)*

Moreover, participants suggested that low-income consumers may not have access to local foods from sources other than grocery stores due to a lack of public and/or personal transportation. They also stated that most low-income Nova Scotians may not live within walking distance of farmers' markets and may not be able to access transportation to them. One participant therefore concluded that this situation may result in two distinct levels of access to local foods within the province:

*So, it's a problem. It starts to create a two-tiered kind of food system when you don't have availability of [local] foods in a central location where you know everyone at different levels can access it. So, then it's these niche markets, these farmers' markets, where a lot of the consumers are, you know, middle upper class [sic]...so then it becomes quality local food for those who are able to get the transportation. (G1-Q3-L306)*

6.3.2.2.3 Dependence on imported foods. Another concern pointed out by participants is that Nova Scotia is dependent on a supply of imported foods. As one participant explained,

*The prospects for Nova Scotia actually feeding the population are, at this point, unlikely...certainly, our consumption of food, the likelihood of us being able to produce everything we need in Nova Scotia, at this point, is fairly low, so we have to rely on our partners in terms of export and import and shipping between provinces. (G3-Q3-L595)*

Another participant maintained that the global food system therefore contributes to food security in the province: *"Look at the global system. There is security built in because if it's [food] not available from Mexico it's available from somewhere else...There's China, there's California, there's Florida"* (G3-Q3-L600). Other participants pointed out, however, that this dependence on imports leaves the food system vulnerable to disruptions:

*Well, it's a dependence on the food travelling really far, which at this point is becoming pretty apparent that whenever that's disrupted for any reason, gas prices, you know, transportation strike, a hurricane that, you know, knocks out a food processor or a refrigeration unit or a distributor, that it makes the whole system really vulnerable. (G2-Q3-L159)*

One participant acknowledged that, *"Unfortunately, until we hit a crisis situation like that we're not always as forward thinking as we should be"* (G5-Q3-L394). Another commented, *"As a whole, I think it's disturbing and troubling, and very much...something that we should worry about"* (G4-Q3-L134). Another participant drew

attention to the importance of local food availability in maintaining food security: *“Local food...availability is a critical component of food security, the security of food for all of us,”* and concluded that, *“This is...a significant problem which needs to be addressed”* (G6-Q3-L597).

6.3.2.2.4 Impact of buying local. Some of the participants readily identified, from among the food items which were *rarely or not available* as local options in grocery stores, certain foods, particularly fruits and vegetables, which are currently produced in the Maritimes:

*All the fruits and vegetables were actually really low as far as what was available. So, that was kind of surprising since, you know, I don’t know, just a quick glance, I’d say more than half of those, you know, peaches, pears, tomatoes, celery, carrots, beans, peppers, sweet potatoes, lettuce, broccoli, corn, strawberries, all are grown here. So, that’s quite glaring that those are missing from what is local.* (G2-Q3-L142)

Participants felt that if locally produced foods are not widely available in grocery stores then the livelihood of local producers may be affected: *“We can’t even support our local farmers if we want to. So, I think in that aspect, too, it’s kind of negatively impacting food security for the local farmers”* (G1-Q3-L239). One participant made the following comment about her reasons for buying local:

*I don’t necessarily think...an apple from New Zealand is going to taste a whole lot different than an apple that’s from the [Annapolis] Valley, but I’d prefer to buy an apple from the Valley because you know you can put a face to who’s kind of going to benefit from that.* (G1-Q2-P2)

6.3.2.2.5 Evidence of strengths. Participants pinpointed areas where the findings pertaining to local food availability showed evidence of strengths in the local food supply and positive implications for food security in Nova Scotia. Grain products were highlighted by participants: *“Well, I’m glad to see the grain increase. In local*



*consumption I think that's a positive"* (G4-Q3-L88). Participants also mentioned the effects of supply management on the availability of locally produced poultry, eggs and fresh milk. One participant commented, *"I know it's contentious, but you definitely see here the control of milk and chicken...They're up there because we have control over dairy and we have control over chicken"* (G6-Q4-L840). Another participant agreed that supply management served to strengthen the availability of locally produced milk:

*Like the milk was a strength. I mean the local milk...there was no non-local alternative because of some guidelines for our province. So, that demonstrates right there the impact of whatever it is, milk marketing, or you know, nutrition policies, or whatever it is, to do with the power of regulating a local product to make it be the only thing available.* (G2-Q3-L113)

### **6.3.3 Impressions of the Relative Cost**

Following a presentation of the findings pertaining to the cost of locally produced NNFB foods compared to that of non-local NNFB options in grocery stores, participants were asked to provide their overall impressions of the relative cost and perceived implications for Nova Scotians. The discussion of the relative cost of local foods thus centred around the following themes: *initial impressions* and *implications for food security and healthy eating*.

**6.3.3.1 Initial Impressions.** Generally, the focus group participants were both pleased and surprised by the findings pertaining to the relative cost of local food items. As one participant stated, *"I was pleasantly surprised! I think it's good news all around!"* (G4-Q4-L182). One participant admitted that she *"fell into assuming that local was more [expensive]"* (G2-Q4-L309). Another confessed, *"I'm even guilty of this skewed perception that local foods are somehow more expensive, or that it is a sacrifice"* (G4-Q4-L251).

Indeed many of the participants had expected that the relative cost of local foods would be higher. One participant remarked, “*I don’t know that the public perception relates to that [lower relative cost of local]*” (G5-Q4-L516). Participants generally agreed that there is a public perception that locally produced foods are more expensive than those imported from elsewhere. One participant repeated a phrase she had often heard in public: “*...over and over and over, ‘I can’t afford to buy local!’*” (G6-Q3-L610). Three other participants considered this perception:

- P4: *The thought is that local food tends to be more expensive and that’s why a lot of people say they don’t buy it. But if that’s showing that it is, when it’s available, cheaper. That to me is kind of like, how did that happen?*
- P5: *It might be one of those perceptions that are misconceptions.*
- P6: *Yeah, myth busted!* (G1-Q4-L144)

**6.3.3.2 Implications for Food Security and Healthy Eating.** Participants reflected on the implications of the relative cost of local foods in grocery stores for food security and healthy eating throughout Nova Scotia.

6.3.3.2.1 Increased demand for local. Participants commented that consumers are concerned with the price of food, and that price would probably take priority over certain other factors, such as place of origin, when consumers are grocery shopping:

*I do think probably for people that don’t know a farmer or don’t know someone if they go into the store and they want to make salad, they look at the lettuce that’s, you know, if it’s got a sale item on it they’re probably going to go to that for the most part rather than seeing if it’s local.* (G3-Q3-L422)

*I think that if people choose, they’re just looking at two bags of carrots, which essentially to them look the same, and if they’re aware of, if they’re aware of wanting to choose local, then they would choose local probably if the prices are pretty similar. If lower, they’re certainly going to reach for it whether they care or know about the benefits of local food.* (G2-Q4-L395)

Therefore, participants predicted, that the lower relative cost of local could become a key factor leading to an increase in consumer demand for local foods. Participants acknowledged, however, that consumers would first have to be informed of the findings pertaining to the lower relative cost of locally produced foods in grocery stores. Two participants discussed this point as follows:

P2: *More...awareness needed maybe...You know, it's worth it, but you're probably going to be paying more, but if some of the data is [sic] saying that this is not the case then.*

P1: *It might encourage people to look a bit more actively?* (G4-Q4-L224)

With knowledge of the finding that in stores where local was available 75% of the local food items had the lowest relative price, another participant concluded, *"This is a very important...sales piece for people"* (G6-Q4-L609).

6.3.3.2.2 Contribution to the economy. Participants previously contended that buying local contributes to the Nova Scotian economy. An increase in the demand for local might therefore, as several participants suggested, increase local production and stimulate the local economy.

*If it's [local food production] a drain on the economy rather than a net contributor to the economy this is...a significant problem which needs to be addressed, by...greater awareness of the fact that the lowest price actually is frequently local.* (G6-Q4-L601)

*And I think there's spin-off impacts from that [lower relative cost of local] as well...right? Like again for our economic development here in our Province and Atlantic Canada, right? I think you'd see more stimulus [sic] to that economy and all those things...which is good for everybody, which would, maybe, mean that the government would have more financial means to do other things - to eliminate inequities like increasing minimum wage, or do childcare subsidies or something.* (G5-Q4-L559)

6.3.3.2.3 Eat healthy at lower prices. Some of the participants concluded that if nutritious, locally produced food items cost less than foods sourced from elsewhere, then

consumers in Nova Scotia who buy local at grocery stores would be able to purchase nutritious foods at a lower cost.

*Well, it sounds like if there was more local food available, ah, it would lower the cost of the National Nutritious Food Basket. Maybe, I'm misinterpreting that, but if the local food was less expensive 75% of the time, but it wasn't always available, if it was available more often, wouldn't it mean that the National Nutritious Food Basket price would be lower? (G5-Q5-L551)*

*Well, if they could get more of it [local foods] in a more convenient location, then more individuals would be able to eat healthy at lower prices. (G1-Q4-L464)*

Therefore, these participants concluded that the lower cost of local NNFB foods compared to non-local options would have positive implications for food security and healthy eating.

6.3.3.2.4 Affordability and lower relative cost. Generally, participants seemed unsure of the implications of the lower relative cost of local NNFB items for low-income consumers. Participants wondered aloud whether this might increase access to nutritious local food items for low-income families. As one participant suggested, awareness of the lower relative cost of local in grocery stores might “*have it back on as an option for those families who are food insecure*” (G4-Q4-L231). Another participant commented, however, that low-income families probably would not take advantage of relatively lower prices by buying fresh, local foods in bulk, as they would with packaged and canned foods, because deterioration of the food items in storage might be problematic: “*...like you can't really stockpile, you know, fresh fruits and vegetables...*” (G1-Q4-L169).

Other participants questioned whether nutritious, local foods, even if priced lower than comparable non-local options, would be affordable for low-income families and those who are food insecure. One of them commented:

*I'm kind of wondering what this means for families experiencing food insecurity. So, what does it mean for that family who is living on a limited income, um, you know, what do these results kind of mean in terms of their, their ability to access food? (G1-Q9-L863)*

Some participants pointed out that that nutritious, locally produced foods cost more than many other food items in grocery stores. Therefore, they concluded that certain consumers, particularly those with a low household income, would purchase the least expensive option available to them.

*But, I mean, these are comparative to other foods that are in healthier options, probably, categories...I'm wondering if like people on, you know, on limited incomes are thinking it's more expensive relative to maybe [chips]....things that aren't maybe within those categories. (G1-Q3-L154)*

*So, to me it's like, sure if it's cheaper people will buy it, but it's still cheaper to buy a, you know, 2 L bottle of [pop] than it is a 2 L bottle of apple juice [locally produced NNFB item]. (G2-Q4-L392)*

*If people are forced to choose between healthy and price, I think that price, if you're facing any type of food security issue, and even if you're not, in today's economy and today's world, price is probably, is a stronger deciding factor for you than health or locality of that, of that food. (G5-Q5-L527)*

Some participants felt that if there is a general public awareness that nutritious local foods are relatively lower in price, then low-income Nova Scotians might be expected to purchase locally produced food items:

*What I worry about is...that for showing the healthy foods are the least expensive, that it's gonna kind of support the notion that people are making choices not to eat healthy, not necessarily that maybe they don't have the resources available. Does that make sense? (G1-Q9-L887)*

*Like it could enable more victim blaming. And people are saying like if there's evidence that the cheapest food is the healthiest food then people on low incomes are still not choosing the cheapest healthiest food. Then it's just like, well, they're doing something wrong... (G1-Q9-L894)*

### 6.3.4 Local Food Issues

Following a discussion of the results, participants considered the next steps in applying the findings. First, participants were requested to identify perceived local food-related issues that might need to be addressed. The main themes which emerged from the interviews were: local sourcing issues, lack of supportive regulations and policies, and low consumer demand for local.

**6.3.4.1 Local Sourcing Issues.** Some participants felt that within the current food system, Nova Scotia producers, especially those who operate on a small or medium scale, might experience problems in supplying grocery stores with locally produced foods.

6.3.4.1.1 Inconsistent/low availability. According to one participant, *“The availability at the quantity the grocery stores are looking for would be part of it [low availability in stores]”* (G5-Q3-L308). Another participant provided an example where even large-scale producers in Nova Scotia are unable to supply sufficient quantities of fresh carrots to grocery stores: *“Well, the good news is that we’re eating more carrots all the time, and our major producers are ramping up their production, but they can’t keep up”* (G6-Q3-L593). Participants perceived that inconsistency in supply might be a factor in the low availability of certain locally produced foods in grocery stores. Indeed, the June, 2010 findings revealed that fresh carrots were *rarely or not available* in grocery stores throughout Nova Scotia. Seasonality and limited production were also identified as contributing factors: *“We’re such seasonally based that a lot of our items are gonna happen at different times of the year”* (G3-Q3-L285). As one participant concluded, *“Our growing season could be a barrier”* (G1-Q5-L569). Similar issues pertaining to the

supply of local foods to retailers in other areas have been reported in the literature (49, 57, 74, 75).

6.3.4.1.2 Other markets. Participants suggested that there may be other market opportunities emerging for local food producers. For example, participants mentioned that local producers are engaged in various forms of direct marketing, suggesting that this may limit the quantity of locally produced foods available for procurement by grocery stores:

*And farms are doing a lot more direct sales as well. They're not putting...you might see that shift, as well, where farmers are doing more direct sales and market sales than they are actually trying to do retail sales. (G3-Q3-L482)*

*This is one example, but as you drive to work, I pass at least, at least, four to five fishermen selling fish out of the back of the trucks. (G4-Q5-L272)*

*And I think another thing that's kind of a promising thing, too, is that there's [sic] more farmers' markets popping up everywhere. So obviously they're becoming more popular. It's giving some of the farmers more access...(G1-Q4-L407)*

Participants also pointed out that a portion of the local food production is exported, and wondered about the impact of exports on local availability:

P1: *I'd also be curious to see, uh, how much food produced in Nova Scotia or the Maritime Provinces actually ends up elsewhere, because I think that really would contextualize a lot of that as well.*

P2: *Yeah, good point. Yeah. How much stays versus how much goes?*

P1: *Um, hm. 'Cause I think it's interesting. Like, we mentioned fish and all the stories about fish from Russia and China packaged here and sold. You know, how much of that versus how much fish is actually caught here and then sold somewhere else? (G4-Q4-L209)*

One participant remarked that local food exports are not always the results of surplus production: *"For example, we grow as many apples in Nova Scotia as we could eat, but we export 45% and import that 45%" (G6-Q2-L145).* Another participant explained why this might occur:

- P: *A determining factor as to whether local is going to be available in the stores here would be like if they have someone buying from elsewhere who's offering them more money. Then they're going to do what's economically smart for them and they'll sell to...*
- P: *Other producers.*
- P: *Yep! That would have [to be] a factor as to whether it's available in our stores or not. Like if someone from exterior is coming in and paying them more.*
- P: *Yeah, playing the market! (G3-Q3-L493)*

6.3.4.1.3 Transportation costs. As presented earlier, there was a significantly higher availability of locally produced NNFB items at the lowest price in smaller versus larger grocery stores. One participant suggested that these smaller stores might have several advantages such as close proximity to producers and flexibility with purchasing: *“Transportation is the one that obviously comes to mind. And then... you know, perhaps it's the small independent stores...able to purchase directly from producers, so it cuts out the middle man”* (G4-Q4-L200). Other participants commented that local producers generally have the advantage of lower transportation costs:

*But we do have competitive advantages for location which means that we can offer a product at a comparable price to what's being brought in from, ah, Washington or wherever, right? (G3-Q4-L571)*

*Here, the transportation to the grocery store is more direct. Then, I think, hopefully, they [local producers] would see a higher profit margin. (G1-Q4-L431)*

One participant remarked, however, that this may be an oversimplification and that there are other variables to consider: *“Of course, that's all dependent on cost production and masses, right?”* (G3-Q4-L574).

Participants perceived that transportation could be a barrier to local food availability in grocery stores across Nova Scotia. Although participants felt that generally



local producers have an advantage of short distances to local grocery stores, they acknowledged that the cost of transportation, even within the province, could be a deterrent for some:

*And even on a small scale, getting produce or product from, and that can be meat or cheese or whatever, from someplace in Truro to Cape Breton, would be very difficult even if there is a market. But the actual cost to ship it, you know, 40 kg of cheese to Cape Breton is a barrier to getting it from one spot to the other. So, finding ways to get it together and have one shipment whatever, that would be great, but for a producer to jump in the car or truck with that for themselves just doesn't pay (G3-Q5-L686).*

**6.3.4.2 Lack of Supportive Policies and Regulations.** Participants identified areas in the food system where current policies and regulations appear to hinder distribution of locally produced foods to grocery stores in Nova Scotia.

6.3.4.2.1 Supply regulations. Participants expressed concerns about meat inspection regulations which they felt were a hindrance to local meat production and could be impacting availability in grocery stores:

*Maybe look at regulations and policies, as well, around...slaughter houses... So, if you're a local meat producer in Nova Scotia...in order to get into a supermarket there's federal regulations, federal whatever stamp of approval, and there's also provincial as well, but to get it into Store X or Store Y it needs to meet the federal ones. (G1-Q5-L493)*

*And I think with things like a lot of meats, if the retail is anything like some of the foodservice operations, they need to be federally inspected facilities. So, it's really difficult for the smaller producer to be able to pay that \$5 million liability or whatever it is they need to pay. (G5-Q3-L311)*

P4: *And what P was saying about the federally inspected meat. Like, I hear that all the time.*

P2: *Yep.*

P4: *Like if we, do we really need fed...meat federally inspected? I'm not a food safety specialist but I'm pretty sure we don't. 'Cause that's a policy barrier. (G5-Q6-L625)*

Other regulations were viewed in a more positive light by some participants. For example, participants commented that the wide availability of certain locally produced foods, namely chicken, eggs and milk, could be at least partially attributed to supply management in those agricultural sectors:

P2: *Um, I don't know about eggs. Are they controlled the way chicken is?*

P1: *Yep.*

P2: *Yeah. Um, so, uh, I mean if we didn't have that, would they be, would they exist on that list?*

P1: *No.*

P2: *Would they even be there? So.*

P1: *Highly unlikely.*

P2: *Yeah. We'd be flooded with [eggs from] Ontario. (G6-Q4-L864)*

One participant expressed concern over the possibility of losing this protection:

*In 2009, \$224 million of farm gate return was supply managed. That's at risk with some of the current trade negotiations. (G6-Q2-L122)*

Other participants could see the benefits of supply management but also noted that this agricultural model has some drawbacks. For example, one participant asserted that few producers are able to benefit from supply management:

*You know while something like the milk marketing policy may ultimately benefit local producers and it's sort of a monopoly style. So, it's not necessarily benefiting more than one or two local producers on a certain scale, and so I think it's a lot about economy of scale. (G2-Q3-L169)*

Moreover, another participant perceived that those local producers who are operating under supply management do so with a low profit margin.

*And it's a huge public misconception because when I'm reading articles online the amount of people that comment that [when] the price of meat or milk goes up, 'It's those farmers that are getting paid more.' They don't realize, like who's taking the big cut down the line. (G3-Q4-L547)*

6.3.4.2.2 Retail price setting and fair returns. Participants felt that competition between producers influences the availability and relative price of local food items in

grocery stores. They suggested that competition exists, not only between producers of local and non-local food items, but also among producers of local foods. While they acknowledged that competition may be beneficial in some ways, competitive bidding, according to participants, could lead to low profit margins for local producers:

*Competition is good in some aspects, but like, I know a farmer, a PEI potato farmer, who was talking about having to put bids in now to sell their potatoes at certain outlets. And so, then if the power is with the market who gets to choose what supplier, dependent on, like maybe, who gave them the lowest bid... it...pushes out whoever can't afford to keep their bids low. (G1-Q6-L604)*

P2: *And it wouldn't surprise me if the local growers and distributors also had to really undercut themselves to get a better price. I mean, to compete they may have had to charge less to a grocery store.*

P1: *To get their foot in the door. (G2-Q4-L356)*

One participant asserted that, *"We do not want our local farmers to have a race for the bottom,"* and concluded that this may have serious consequences for farmers: *"There may not be the margins for local farmers to survive on those kinds of global competitive pricing"* (G3-Q2-L233).

Participants wondered whether local producers receive an adequate profit margin when local foods have a lower relative cost in grocery stores. Some were under the impression that local producers are receiving low returns:

*Comparing non-local to local, just the nutritious food basket, that is great if local things are a little bit cheaper. Well, wonderful! I worry about the impact of the farmers who've had to make some kind of compromise, potentially. (G2-Q4-L423)*

*I also wonder kind of what of being the lowest price...what that means for local producers because so little of the food dollar already is going back to local producers and knowing that now local foods are lower in price, usually the lowest in price in comparison to other foods, I kind of wonder what that means in terms of farmers' wages and their inputs and outputs, and, you know, how they're kind of supposed to make a living. (G1-Q4-L380)*

In order for local producers to receive fair returns, and in order for the local economy to prosper, some participants maintained that local foods should not be priced lowest relative to non-local items, nor promoted as having the lowest relative price:

*Well, I don't think that we're after the lowest price, right? Part of our job is that we promote agriculture and farming, local farming as, as kind of a benefit that you should, it should be worth a little bit more. I don't, I really don't think we're on, on a fight for the lowest price 'cause that's not going to help anybody within our economy, our farmers. (G3-Q4-L570)*

*Obviously our concern is maintaining that economic climate that can allow farmers to succeed, so the lowest cost, I just throw this in, the lowest cost analysis for us is a bit difficult, paradoxical, in that we do not want our local farmers to have a race for the bottom. So, there is a bit of a quandary for us in terms of finding the lowest cost in the grocery store, because there may not be the margins for local farmers to survive on those kinds of global competitive pricing. (G3-Q2-L230)*

One participant asserted that the retail price of local foods in grocery stores may not be indicative of the level of returns for local producers: “*The retailers can market at whatever price they want to be competitive, so it may not actually reflect the cost or what the farmer gets or what the middle person gets*” (G3-Q4-L538).

6.3.4.2.3 Minimum order size. Participants in all groups perceived that retailers' purchasing policies were barriers to local food availability in grocery stores in Nova Scotia. One participant suggested that some stores might have minimum supply requirements which are restrictive to small producers. A second participant with experience working in a retail environment explained how a sustainable supply could be a problem for small producers:

*I worked for Store X for a while so I know that at the retail level they have certain restrictions based on what farmers or their suppliers can provide, right? They don't want necessarily to deal with you if you can't provide them with enough or, you know, a sustainable supply, which would probably be difficult for many*

*producers here in our province or Atlantic Canada because we're not as large scale as, you know, other...whether it be in Western Canada or Ontario or whatnot. I know that that's one of the factors (G5-Q3-L278).*

6.3.4.2.4 Central distribution policy. Participants mentioned that grocery stores are no longer *buying at the back door* and require local producers to transport food products to grocery store distribution centres. One participant further explained how this practice could increase not only the distance to market but also the overall cost:

*And I know it's even deceiving as well, right? You think you're buying local but yet food miles attached to that food are a very different thing, as well, because with Store X their central warehouse is in Town A. So, if it's made in Yarmouth, they'll ship it to Town A and then they will ship it back to Yarmouth. (G5-Q3-L299)*

Another participant concluded that the central distribution systems operated by grocery store chains are ineffective for local producers:

*Well, the central distribution doesn't work so well, I don't think. You used to be able to back up to the door at Store X but then you got into your consistency [product quality] issues and that sort of thing, but the central distribution I don't think works as well for Nova Scotia farmers. (G3-Q5-L681)*

Participants commented that producers have additional costs incurred with packaging and labelling their products. Participants noted that such distribution costs can contribute to the final price consumers have to pay but can also reduce the amount that the producer receives. One participant commented on the limited influence producers have on price by stating, *"The farmer has forever been the price taker [as opposed to being the price setter]"* (G6-Q7-L1069). Some of the participants felt that consumers may not be aware of this situation. One participant, a farmer, said, *"There's so many people in between us, the consumer can't see what the farmer gets"* (G3-Q4-L544).

**6.3.4.3 Consumer Barriers.** Towards the conclusion of one focus group discussion one of the participants wondered:

*It's like we all know that buying local is better for the community and, you know, supporting people in the work force in their jobs...Well then, why do we all still...not do it? It's like where's that follow through? ...What are those barriers to actually following through and purchasing local? (G1-Q9-L842)*

Participants suggested that, in addition to the low availability of certain local food items, there are other reasons why some consumers may not buy local.

6.3.4.3.1 Perception local is expensive. Generally, participants contended that there is a public perception in Nova Scotia that locally produced foods are more expensive than those foods imported from elsewhere. Moreover, participants suggested that this perception might be impacting consumer demand for local and also, therefore, local food availability:

*Like everybody just thinks it's more expensive so they don't even look for it. (G1-Q7-L706)*

*And I think if there still exists, and we all seem to think it does, this misperception that local foods are more expensive; that, in itself, is almost alienating a lot of consumers. (G5-Q7-L356)*

6.3.4.3.2 Affordability of local. As previously discussed, after participants had reflected on the relative cost of local foods they pointed out that the cost of many nutritious, locally produced food items may be higher than other widely available foods in grocery stores. Participants contended, therefore, that certain consumers would choose one of the more affordable food options available to them, rather than buying local. One participant arrived at the following conclusion:

*I think...a lot of consumers may have a preference for local food if the price is the same, but that they will often opt for lower cost, and the grocery stores feel that they need to supply that as well, so. (G4-Q3-L124)*

6.3.4.3.3 Food labelling and in-store signage. Generally, participants perceived that consumers may not be able to identify certain locally produced foods because of food labelling and in-store signage issues. After one participant remarked that, *“Sometimes it’s hard to know what’s local and what’s not local”* (G5-Q5-L575), another participant agreed that, *“It’s not very well indicated”* (G5-Q5-L577). An example of this was provided by a participant who described the experiences of a group of consumers trying to identify local products:

*We...[were] putting products side by side, putting, you know, canned products versus frozen products versus fresh produce, and asking customers ‘Can you tell us which one is local?’ And they couldn’t always. And people would be looking at the label.* (G3-Q2-L267)

Participants also spoke about inaccurate signage in grocery stores and the need to ask the staff about the origin of items in the produce section:

*... ‘cause I know I’ve gone and it’s been Product of Mexico, and it’s been crossed out, and it’s been Product of Canada, and then you say, ‘Where did this really come from?... They don’t know... Like they have to go to the back and talk to the produce manager and find out where it really came from. And that’s irritating!* (G1-Q6-L630).

Participants concluded, therefore, that often consumers may not be able to make informed decisions about buying local in grocery stores. One participant felt that *“even people that [sic] are trying to make those decisions aren’t getting the full piece of information (G2-Q3-L176)*. Another participant agreed, *“Like if people don’t know, then they can’t choose local,”* and also contended that improved food labelling and in-store signage would have a positive impact on consumers’ *buy local* decision-making, *“But if you make it really, you know, like a big and well-known thing that this is the local item*

*and this is not, then I think that a lot of people, regardless of their income level, will choose local” (G1-Q6-L621).*

6.3.4.3.4 Local food disconnection. Participants suggested that consumers tend to passively accept the food selection presented in grocery stores:

*I just feel like people don’t have a voice about where their food comes from any more. It’s kind of like just go to the store and, ‘Well, well, well, just buy what’s here.’ It’s just accepted as this is what there is instead of, kind of, ‘I really want local apples,’ or, ‘I really want local.’ (G1-Q6-L656)*

Moreover, participants felt that consumers have become accustomed to the availability of foods sourced globally year round. Consequently, consumers and have shifted away from seasonal patterns of purchasing and eating. One participant expressed her concerns as follows: *“And now I don’t think that there are very many people who are willing to accept that food is seasonal, you know, certain food products are seasonal. Or price fluctuations, or, it’s just we just want to change the channel and it’s right there. So, I worry about that” (G2-Q3-L279).*

Participants also highlighted the vast selection of food items offered by grocery stores as a possible barrier to local food availability and buying local. One participant declared, *“We’re overwhelmed with choice” (G5-Q3-L495).* In the following discussion participants indicate, however, that retailers tend to focus on offering more variety in the packaged food aisles of grocery stores:

P: *I’m always shocked by how much certain sections of the store are expanding...*

P: *The middle!*

P: *Yeah, like the cereal, cookies and...*

P: *The chip aisle is ridiculous! It’s like two aisles!*

P: *Yeah!*

P: *There’s so much of those now...*

P: *The granola bars will soon be like a section! Almost an entire row.*



- P: *Half an aisle.*
- P: *Oh, and the energy drinks! We can't forget about the energy drinks.*
- P: *Whereas other sections of the store haven't grown in that way.*
- P: *Um, hm.*
- P: *Which is a lot of the whole foods. (G5-Q3-L421)*

As indicated by the following comments, however, participants did not place responsibility for the selection of foods in grocery stores on the retailers, or consumers, any other group, in particular:

*So, it's not only the stores making the decisions. We're also starting to get kind of wanting things to be the same, same everywhere. And that, I actually find that distressing, 'cause then everywhere there's the same and it doesn't, there's no difference in going into a store in one place versus another. It's really quite homogeneous. And that's not a good thing. (G2-Q3-L283)*

*And I don't know who exactly is to blame. I think probably everybody is a little bit at fault. Consumers are a little bit at fault. And retailers are a little bit at fault. And, you know, food industry, government...Everybody kind of let it slide. No one has really stopped to think of the consequences. (G5-Q3-L453)*

One of the consequences that participants mentioned was that consumers have lost various connections with food, particularly fresh produce. One participant commented, "If we don't have access to local food our detachment from our food is greater" (G4-Q2-L47). Participants suggested that some families may be more familiar with processed, convenience foods and, therefore, less accepting of fresh, local foods, which may require additional time and particular skills to prepare. Other participants agreed and gave examples of how this detachment from local food may be manifested in various ways, such as with the loss of food preparation knowledge and skills:

*They [consumers] could also say that since a lot of the local foods are in their raw form like raw potatoes and raw onions and things like that, they may not have the time or the knowledge to like make food from the raw materials. You know, they may be just more comfortable and more familiar with more processed [foods]. (G1-Q9-L877)*

*Especially today, there's a huge disconnect with people in knowing how to use raw ingredients and cook for themselves. Like, it's all about convenience foods and whatever's quicker is better. (G1-Q9-L883)*

*People will choose things that are more convenient, more familiar, more, um, fast and comfortable, to do with what their family is expecting, or the timeframe that they have to cook it, or something like that. So, unfortunately, that's such a huge factor. (G2-Q4-L426)*

Some participants questioned whether more Nova Scotians would actually purchase locally produced food items if such foods were widely available and readily accessible in grocery stores throughout the province. One of them commented:

*I think the health issues are more related to what you were talking about. It's the processed versus the less processed food... 'cause I think even if we had more local food, are people going to eat it? I don't think that's where the healthy issues, the healthy eating issues are, necessarily. (G5-Q3-L485)*

### **6.3.5 Local Food Opportunities**

Participants identified numerous opportunities for addressing local food issues, strengthening the local food system and building CFS. They were in agreement that, as one participant asserted, “it has to be a multiple-level approach” (G2-Q6-L530). The main themes which emerged from the focus group interviews were: 1) enable distribution to retailers, 2) examine policies, regulations and initiatives, 3) invest in agriculture, and 4) public awareness/education.

**6.3.5.1 Enable Distribution to Retailers.** Generally, participants felt that there is a need to facilitate local sourcing by grocery stores in order to increase local food accessibility. One participant stated, “*Well, I think that the biggest thing is to make it easier for the local farmers to get their food into like Store X and Store Y and the bigger stores so that more people do have access to it*” (G1-Q5-L487). Another added that this

should be accomplished by, “*making it maybe a less competitive market between [local farmers]*” (G1-Q6-L604). Participants in most groups maintained that there is a need for direct delivery of local product to stores. In relation to this one participant proposed that this practice should be reinstated and supported by a subsidy:

*The Department of Agriculture, the provincial government through the Department of Agriculture, help to subsidize an extra somebody who could facilitate buying at the back door...to have a person who, to employ them, and coordinate this. It's not going to cost that much, and this is one way that we'll get people back on the land. I mean the number of farmers is just going down the tubes and we can't afford this. This is our knowledge base.* (G2-Q6-L501)

**6.3.5.2 Examine Policies, Regulations and Initiatives.** Participants agreed that the next steps in applying the findings should include an examination of policies and regulations that are currently in place pertaining to food labelling and procurement of local food by grocery stores in Nova Scotia:

*I see a real opportunity here to begin to sort of understand more how industry works and how, um, how grocery stores, and institutions for that matter, purchase large quantities of food. What, you know, what their policies look like, what their practices look like, what their limitations in, in a, you know moving more towards a local food focus. I don't know if I really have a good understanding of that.* (G7-Q5-L490).

Participants also thought that it would be advantageous to examine local food system regulations and initiatives that are in place elsewhere to determine what builds success. One participant felt that it is important to learn “*from places that have done some of this successfully*” (G2-Q6-L546). Another suggested that Nova Scotians should look “*at what other cities are doing, too...Think locally, but look at good ideas from abroad to see how we can improve our own systems*” (G1-Q6-L556). One participant commented on the need to examine the system of supply and demand:

*I would agree the supply and demand, that's sort of being stuck on a little bit of a, sort of like a treadmill, where the same thing is coming around again and there's no new information feeding in...Something like looking at the models that don't work and the models that do work, and what builds resilience into those models. (G2-Q3-L238)*

Another participant suggested that there is a need to examine specific aspects of supply and demand such as meat inspection regulations, including costs to producers: “*Maybe there's some way you could make it easier for the meat producers to meet those regulations*” (G1-Q5-L509).

### **6.3.5.3 Invest in Agriculture.**

6.3.5.3.1 Infrastructure. Participants emphasized the importance of maintaining rural infrastructure and sustainable farming practices in order to increase the availability of local foods, strengthen local food systems and build CFS. One participant reflected on this as follows:

*In my mind the food security question links to the availability of food from producers in our province, and if local food is **not** available that means we have zero capacity to feed our population, so maintaining our rural infrastructure and our rural communities with vibrant farm families...then benefits those communities and the food security. (G3-Q4-L587)*

Participants spoke specifically of the need to invest in the construction and maintenance of facilities for minimal processing of local food products. Local processing facilities would support new product development and provide local employment opportunities, thereby contributing to the local economy and helping to build food security.

*And it requires like people investing in processing foods locally, too; like you just gave the example of the slaughterhouses that are closing down. So, you really have to make that investment. And that's like contributing to local jobs in local economies, too. Like, if there's a factory in every town that produces something to,*

*like can or freeze or whatever, then I know, I think that will contribute to food security in itself, just having more jobs. (G1-Q5-L523)*

6.3.5.3.2 Labelling expenses. Participants also focussed on costs, such as product labelling expenses, which increase the total production costs for local producers: *“Definitely make it easier for the local farmers to just get in [the grocery stores]. You know supporting them or whatever like working with them to support them. The costs to get like the UPC codes or things like those are obviously huge barriers for farmers” (G1-Q6-L598).*

6.3.5.3.3 Increase production. One participant acknowledged that local exports provide economic benefits to Nova Scotia. She asserted, however, that for certain local foods, such as apples, production should increase in order to strengthen availability in grocery stores throughout the province:

*So, we could easily increase our production [of apples] by encouraging people to eat more apples, and we could help our environment and our economy by keeping a little bit more of that close to home. That said, the apples that we are sending out of the province, and most specifically, the blueberries and cranberries, that go out of the province, are one of the ways that we do bring goods production dollars back into Nova Scotia. So, there is, as I say, let’s find the balance because we want to keep exporting blueberries and cranberries and apples, but we also want to ramp up that production for our own use, as well as export. (G6-Q2-L147)*

Participants also pointed out the need to preserve land designated for agricultural production: *“Land trusts are important so that agricultural land can be protected like a nature trust” (G2-Q6-L539).*

**6.3.5.4 Public Awareness/Education.** Participants identified various opportunities to increase public awareness and provide educational opportunities pertaining to locally produced foods.

6.3.5.4.1 Knowledge translation and mobilization. Participants considered it important to disseminate the 2010 local food costing findings to community members, including policy makers, local producers, retailers and consumers, throughout Nova Scotia. One participant emphasized that “*this [research] is a very important sales piece for people...*” (G6-Q3-L623). For example, several participants expected that the findings would be informative for retailers:

*I think also getting these results to the grocery chains, because we're not using any names here. These chains aren't named. It's not really accusatory. It's sort of like, 'Thanks for letting us come in,' and, 'This is what we've found overall.' So it can be presented in a positive light, and sharing this with them. (G4-Q6-L288)*

*The attitudes of the retailers, I think, have an impact. So, it ties in to what you're saying can be a good thing or a bad thing. I think we are seeing some inclination from some of the larger retailers to try to capitalize on the cachet surrounding local now. For instance, some of the big retailers will identify the exact farm from which it has been sourced. And I think it's to build their relationship with their client, saying that we do try to get local products. So, I think that's an important thing. If that grows; if that attitude of the retailer grows in that they're trying to put local in front of the public, then that will have a positive impact on the availability. (G3-Q3-L527)*

In addition to sharing the findings with community members, participants envisioned an exchange of ideas and collaboration to address the local food-related issues and affect policy change in the province: “*And taking these types of results and doing a whole knowledge mobilization thing, getting out to the community and to the people that can make policy changes and who can affect policy change*” (G1-Q6-L542).

6.3.5.4.2 Benefits of buying local. Participants suggested that there is also a need to increase public awareness of how local food is grown/produced, the benefits of buying local, and the importance of supporting local farmers:

*You know, we're so used to having all the choice in the world when you go to the grocery store; just to do that little, subtle...so just to do that little, subtle shift*

*somehow, like to this is how food is grown and this is where it comes from. It doesn't just arrive in the grocery store; so, education around that, maybe. (G1-Q6-L570)*

Participants felt this would encourage more consumers to become proactive in purchasing locally produced foods from grocery stores. Moreover, participants maintained that if consumers purchased more local foods at the grocery store, then this increase in demand might result in a reciprocal increase in the supply of local. One participant suggested, “*And maybe just...encouraging people to ask for local because I think maybe if the demand is there then they tend to want to please the customer demand (G1-Q6-L647).*” Another anticipated that “*if...stores are seeing that people are buying them [locally produced foods], then that would indicate, you know, start supplying more or make those sections bigger*” (G4-Q4-L204). Similarly, another participant concluded, “*Demand brings along supply*” (G3-Q3-L535).

Generally, participants believed that buying local would contribute to healthy eating and have nutritional benefits for Nova Scotians. Therefore, participants asserted that this message needs to be shared:

*I think a big thing for farmers or agriculture in general is just to get consumers educated what's healthy for them to eat in the first place. You know that there are no nutritional aspects to drinking pop versus drinking milk. If they can make a connection that, what healthy eating is to start with then I think that's going to bode well for local agriculture products in general (G3-Q5-635)*

As participants reflected on the benefits of buying local, they envisioned how this practice might contribute not only to healthy eating but also to the social health of Nova Scotians. Several participants expressed their thoughts as follows:

*I think that social part is so important that I think it would allow for a more involved relationship between consumers and their food. Not necessarily that it*

*would happen, but it would open doors where, you know, people can feel like they're buying from their own area or region or province. (G4-Q4-L245)*

*And feel like they're contributing, or being a bit more socially responsible, as part, I mean as part of healthy eating but also just as healthy eating as part of healthy living. (G4-Q4-L242)*

6.3.5.4.3 Identifying local foods in grocery stores. Participants felt that it is important for consumers to be familiar with the variety of locally produced foods that are available in Nova Scotia. One participant said, *"I didn't know until last year on Open Farm Day when they did the promo that we grew peaches here in Nova Scotia"* (G3-Q1-L70). Other participants were surprised to learn that certain foods in the NNFB were actually locally produced:

P: *The melons and cantaloupe, as well. Who grows those?*

P: *I got them at [Store X].*

P: *Oh? Well, okay!...Clearly, I've never seen it on the shelf locally. (G3-Q1-L135)*

Participants also maintained that it is important that consumers learn how to identify local foods in grocery stores. One participant is developing educational tools with that purpose in mind:

*Our focus is more on educating the consumer as to how to identify local produce...that's been a concern...and we're looking at ways to educating them in the grocery stores. (G3-Q2-L264)*

Participants felt that it is equally important to ensure that grocery store staff members are knowledgeable about locally produced foods. Participants suggested that educational experiences should also be provided to the grocery store staff so that they will have the necessary skills to provide consumers with an environment conducive to buying local:



*Yeah, and I think, so building on that, too, education of the staff at the grocery store as to where the food is coming from so that if I go in and want to buy a local product I don't have to go ask fifteen people to figure out okay this is your local apple... (G1-Q6-L642)*

6.3.5.4.4 Local food preparation skills. Participants perceived that consumers would benefit from the development of specific local food-related skills, including product identification and cooking.

*Could change your expectations for a product; to move away from a processed product to a fresh product, I think, inherently favours local because the turnips that are available locally, and the carrots, and the onions and such, if you have the skills to convert that into a meal, then I think both the local producers are benefiting, and the health conscious, and this means the consumer is benefiting too. (G3-Q3-L395)*

## **6.3.6 Food Costing Recommendations**

**6.3.6.1 To Inform Our Work.** Although the participants generally felt that the analysis of the food costing data was comprehensive, they offered suggestions for other analyses in order to better inform their work.

6.3.6.1.1 Availability. Some participants would like to be informed of other factors pertaining to the availability of local food items. For example, participants in several groups expressed an interest in knowing which foods that have been produced historically in Nova Scotia:

*At one point we grew a lot more lamb and that was one of the meats of choice in Nova Scotia...You know the food scenario has changed a lot. Probably every ten years there are massive changes in our regional economy and what's available to us, so to sort of giving a bit of a historical perspective to people who are currently making decisions about what apples to buy and to say it wasn't that long ago when this was what you'd see, and this was how you'd get it, and there are other options, and that kind of thing. (G2-Q9-L738)*

In addition, they would like to know which of the items in the *rarely or not available* category are produced and/or can be produced locally.

*And I'd be interested to know, too, like how many of the things that, um, were only sometimes available or rarely or not available are actually...Are we actually able to produce them? Do we produce them? Those kinds of things (G3-Q3-L184).*

Several participants were also interested in obtaining information about the range of local options available for each item in the NNFB. Two participants commented:

P: *So, say they went and there was [sic] four brands of milk and they were all the same price what would they do?*

P: *They didn't have any way to say that there was [sic] four choices. (G3-Q1-L79)*

Therefore, some participants suggested that the survey tool be revised in order to collect the necessary data for determining the availability of multiple brands of local food items.

6.3.6.1.2 Promotion. Some of the participants remarked that they would like to know more about effective strategies to promote local foods:

*I don't know how realistic it is, is to actually have somewhere, something where, costers can actually make a note of whether the store is advertising local food or not. (G4-Q7-L334)*

*I'd like to know...the farmer's name is often attributed to the product, or the farm where it came from...[which is] more specific as opposed to Atlantic grown or Atlantic produced. Does that...influence the buyer's decision?... 'Cause then that could mean if it was positive, then that could be used to help convince the retailer to use that method of promoting. (G3-Q7-L709)*

Participants were also interested in learning about which groups of consumers actually buy or do not buy local, and the reasons for these shopping behaviours.

*I think it would be a way different study altogether but I'd like to know who is buying the local food versus who isn't. (G1-Q7-L664)*

*Maybe even looking at for the people who do have access to local food that aren't purchasing it, like, what's stopping them from purchasing it? (G1-Q7-L699).*

6.3.6.1.3 Price. Participants said that they would like to have additional price comparisons among nutritious foods, as well as convenience foods:

*The other thing that we said...having the data for, no matter what you always want to have a comparison price. Whether the local product was the lowest price or a higher price, you always want to have a comparison price. (G6-Q7-L1017)*

*If the survey could have a difference like was the next item within five cents, or was it within a dollar or... (G3-Q7-L762)*

*Maybe just, um, looking into more how the, ah, more processed and convenience foods compare in price...but just seeing how low those prices are, and how accessible they are compared to the local foods and the more healthier foods. (G1-Q8-L720)*

Another area of interest for participants was retail price setting:

*And why are we priced where we are, now? Is the store upping the price because it's local, or is the retailer using the name as a marketing tool and saying it's worth more to them? (G3-Q7-L754)*

*Something that I'm always interested in, it's always in the back of my mind although I don't know how you'd ever do it, but...is a breakdown of the price and who gets what percentage of that.(G5-Q7-L666)*

*Like how much is going in the grocery store pocket versus the farmer's pocket versus the distribution, you know, middle guy, the transport thing. (G5-Q7-L674)*

6.3.6.1.4 Food costers. Participants in one group thought that it would be informative to learn what the food costers thought of the participatory food costing process and the results of the local component. In particular, participants were interested in learning about how food costers are able to apply what they have learned from participatory food costing, and how other consumers may learn from this:

*The participants' reactions... Yeah. You said that this was a unique study because you used people who, uh, well, that might benefit from doing all this kind of stuff. Yeah. So, what was their reaction? And then, uh, well, what did they say about it, and what did they need? And like that. (G2-Q7-L593)*

*How can a person translate that information for themselves once those participants knew, 'Oh, my gosh, I was so surprised to find that, you know, we could get dried beans way cheaper!' and...what [cooking] skills [would be needed]? (G2-Q7-L617)*

6.3.6.1.5 Other markets. Participants in most groups thought that it would be informative to ascertain the availability and cost of locally produced foods in other outlets, including farm markets, farmers' markets and convenience stores, and to also do a comparison with grocery stores. Some participants expressed concern that the findings might reveal that local foods are more expensive at certain outlets, and that this could have a negative impact on sales. Yet, most participants felt that this research would be informative for their work, as well as that of other stakeholder organizations in the province:

*But it also would be interesting to look at, do a comparator of, of these grocery stores, I think that's great, and, um, then local farm markets and roadside farms in June, and the same comparator, local grocery stores and farm markets in September, um, because I, you know, even now [December 2] there's not, it's not that far into the winter, but there's still a fairly decent variety of food down at the market. (G6-Q3-L529)*

*And if you could branch it out and get into farm markets and look at what's available in farm markets, that would be, I think that would be very informative. And do price comparisons where it suits... (G6-Q7-L1026)*

*The data [sic] is, it's sensitive, but I don't think it's something we should shy away from looking at. I think it's something we need to look at... (G6-Q7-L1112)*

Participants also thought that this would inform consumers, especially those for whom transportation is an issue:

*Maybe they're [local foods] not available at grocery stores, but they're available in farmers' markets. So...if we're looking at people who have food insecurity issues, transportation is likely an issue. So, if they have to go to two different places to get their groceries...maybe it's even worth it for them to go to the farmers' market 'cause they'd save that much money and they'd be supporting local but they wouldn't bother if they didn't know that, so... (G5-Q7-L710)*

**6.3.6.2 Time of the Survey.** Most participants felt that the survey results for locally produced foods, especially fruits and vegetables, would be greatly influenced by seasonal availability: *“I think it’s really hard to give a picture of what Nova Scotia has for local food, picking one or two weeks of the year”* (G3-Q3-L284). Participants in all groups offered suggestions for optimal times of the year for conducting the local component of participatory food costing: *“I think at least four sample points”* (G3-Q7-L829). Although participants recognized that four surveys, one in each season, would provide a complete picture of availability and cost, most acknowledged that this would not be required: *“I agree that two measurement points in time are a very, that’s a valid thing to do”* (G3-Q3-L294). In general, participants felt that two surveys would suffice; one in June, as an example of off-season availability, and another in early fall to show the peak-season offering for most fruits and vegetables:

*Three months later would...make a difference. And I think that would be reassuring for Nova Scotian producers to see that those numbers were [up].* (G6-Q7-L942)

*I feel like the fall for Nova Scotia would make a huge difference for what is available locally.* (G1-Q7-L797)

**6.3.6.3 Local Definition.** Although the definition of local used in the 2010 food costing survey differed from the definitions provided by most of the participants, most did not suggest a change: *“Your earlier definition of the Maritimes was fine for me”* (G2-Q7-L660). The presentation of the data included a provincial break-down of the overall availability, so this factor may have garnered some support for this definition. Nevertheless, one participant suggested that the analysis should include more details for the availability and relative cost for food items grown and/or produced in Nova Scotia.

*I wonder is there any way to stratify the results and maybe it wouldn't be worth it, but if we just chose Nova Scotia, how many of those foods would be removed from the list? Or, you know, what we would consider locally available? (G5-Q8-L406)*

Several participants remarked that using the Maritimes in defining *local* the difference in overall availability was minimal (approximately 5%).

*Then for Nova Scotia when you broke it down into the percentages, a lot of the foods were just [from] Nova Scotia so I guess it just widens your pool a bit, a tiny bit, if you go into New Brunswick and PEI, too. (G1-Q8-L742)*

Participants requested clarification, however, pertaining to guidelines used to determine whether processed food items, such as bread, peanut butter, frozen concentrated orange juice, and frozen fish fillets are local:

*I was going to say if you can find some way to link it to mean grown here, locally, 'cause it's a good definition but it's not encompassing what we actually grow. (G3-Q8-L820)*

*Yeah. And some of the questions that were going through my head as you were talking were, um, so like with the grain products, like the rolls. That would mean that they were baked here, but it doesn't necessarily mean the wheat, the wheat isn't grown here, right?...So, there's different degrees of, or different kind of definitions of local, really, because if, whether it was processed versus actually grown in our soil. (G5-Q3-L166)*

*That's where it gets confusing with fish, too...because they'll fish them off the shores of Nova Scotia and ship it to China to be packaged and send it back over. (G5-Q3-L230)*

**6.3.6.4 Food Basket.** Some participants suggested that additional food items should be added to the Nova Scotia adapted NNFB so that nutritious, locally produced foods such as fresh produce, including kale, squash and spinach, would be better represented:

*But within this they're only picking those 67 things, anyway, so regardless of what time of year it is, if the item isn't on the list of the 67, it's not going to be noticed anyway. (G3-Q3-L289)*

*I would use the same food basket. We're just making some suggestions about other things that we might like to see in it. (G6-Q7-L988)*

*Okay. So, they did not look for squash? (G6-Q3-L570)*

*And spinach. Spinach would be available in June. (G6-Q3-L586)*

Some participants also suggested that butter should be included in the food basket:

*P2: They shouldn't have taken off butter...*

*P1: Being a far more healthy alternative.*

*P2: Than margarine! Oh, my gosh! Anyway. (G6-Q3-L417)*

A number of participants argued that the food basket should not contain foods that cannot be grown or produced locally; nor should the basket contain processed foods consisting of imported ingredients: “*How does orange juice get on there?*” (G3-Q1-L101). One participant suggested, “*I think they should try to make the basket, like, practical for the local region. Like, if you're doing a study on local foods in Nova Scotia, don't pick something you can only grow in South America!*” (G3-Q8-L797). Another participant recognized that this might exclude certain food products, such as jam: “*If the locally produced jam using local fruit has the [imported] sugar ingredients...then they cannot call that a local product*” (G3-Q3-L336). One participant felt that separate nutritious food baskets for local and non-local foods would be a good solution to the problem and would be ideal for comparative purposes: “*I would love to see a local equivalent basket, too. I mean, measure them side by side...*” (G2-Q8-L646). Another participant agreed that such options should be discussed to ensure that local foods receive the required support:

*...what is it that we need to do to really support the message around local foods?...do we develop a tool that reflects what people are currently eating...or do we want to reach out and say we need to promote more local food consumption, and therefore the tool should reflect the higher percentage of foods*

*that are local. And I think that's a conversation that we need to have. What's the message we want to send? How do we want to use the tool? How do we want to use the data? Should it be two separate tools? (G7-Q7-L582)*

## **6.4 Summary**

In Phase II of this study participants identified limited access to local foods and the perception that local foods are expensive as possible barriers to food security and healthy eating, whereas the lower relative cost of local foods and the perception that local foods are nutritious were viewed as enablers. Participants felt that important issues related to local food availability included: the effects of seasonality, limited product quantity, consumer barriers, and lack of supportive store regulations. They suggested that opportunities to address these and other issues should include: enabling distribution to retailers, reviewing food policies and regulations, and generating public awareness about the benefits of buying local. Participants also made recommendations so that future local food costing projects would better inform their work. One suggestion was to conduct the survey during the peak harvest season in order to assess the effects of seasonality on availability and relative price of local NNFB items.



## **CHAPTER 7: DISCUSSION**

### **7.1 Introduction**

The first phase of this study examined the availability and relative cost of nutritious, locally produced foods in grocery stores throughout Nova Scotia in June 2010 using secondary data from the Nova Scotia Participatory Food Costing Project. Local foods were defined as those foods grown or produced in the Maritimes. During the second phase of this study these findings were summarized and presented to members of stakeholder organizations so that they could discuss the implications of the findings for food security and healthy eating initiatives in Nova Scotia. This chapter discusses both the quantitative and qualitative results of this study through a theoretical framework of community food security (CFS) and the conceptual framework of a healthy, sustainable local food system (Figure 1).

### **7.2 Social and Nutritional Health**

Community Food Security involves long-term planning aimed at providing all community residents with access to safe and nutritious food (117). Documenting the extent of nutritious, local food availability may assist in the identification of areas of strengths and needs, such as the availability of locally grown produce, and may also provide a baseline for improvement (116, 128). The first objective of this study was to determine the availability of nutritious, locally produced foods in grocery stores throughout Nova Scotia in June 2010. The survey tool (31), which was adapted from the NNFB, consisted of 67 food items which represent a basic nutritious diet (151). The findings of this study indicate that consumers who attempt to buy locally produced

NNFB items in grocery stores in Nova Scotia during June will only be able to do so for approximately 21% of the items in the basket. This finding is consistent with the results of previous surveys which determined that 23% and 22% of the NNFB items in grocery stores throughout Nova Scotia during June in 2007 and 2008, respectively, were locally produced (30). The slightly broader definition of local food (i.e. grown or produced in Atlantic Canada) used in 2007 and 2008 makes it difficult to compare these findings directly, however.

As some of the participants in this study pointed out, considering the apparent interest in local foods throughout Nova Scotia, an increase in local food availability in grocery stores might have been expected. Although there does not appear to have been an increase in the average availability of locally produced NNFB items in stores, there may have been an increase in the availability of other locally produced items which are not included in the NNFB. Moreover, it is possible that grocery stores experienced an increase in sales of the local NNFB items that were available during this period. However, this was beyond the scope of this research.

One goal of CFS is to provide equal access to nutritious foods for all community residents (5). The finding that the availability of local NNFB items at any price in 2010 did not differ with grocery store size or location indicates that consumers will likely find similar items in grocery stores wherever they shop throughout the province of Nova Scotia in June. This finding is also consistent with the results of previous food costing surveys conducted in 2007 and 2008 in grocery stores in Nova Scotia (30).

Although there appears to be consistency in the availability of nutritious, locally produced foods in grocery stores, participants in Phase II of this study suggested that the

location of these stores throughout the province might impact physical accessibility by some consumers, particularly those for whom transportation is an issue. Moreover, although participants acknowledged that some consumers may be able to shop for local foods at other outlets, such as farmers' markets, they felt that for other consumers the availability and/or cost of transportation, as well as time and other convenience factors, may mean reliance on grocery stores for their local food purchases. Consistent with this finding, in upstate New York low-income consumers revealed in focus group interviews that accessibility and convenience were important considerations in deciding where to shop for groceries, and that they relied primarily on grocery stores for their fruit and vegetable purchases (93). However, if there is low availability of locally produced foods in grocery stores, consumers who frequent these stores may therefore have limited access to nutritious local foods, such as fresh produce, especially if alternate markets are not a convenient option for their shopping needs.

The results of the 2004 Canadian Community Health Survey (CCHS) indicate that most Nova Scotians are not consuming a healthy intake of vegetables and fruit (19). In Nova Scotia, therefore, access to these nutritious foods, in particular, is a public health concern (18). As the results of this study revealed, some local produce items, including carrots and lettuce, were not widely available in grocery stores in Nova Scotia during the month of June. Participants interviewed during Phase II of this study associated local foods such as these with healthy eating. Moreover, many Nova Scotia consumers associate local foods, particularly produce items, with freshness and quality (29). Therefore, a wider availability of fresh, local produce may have a positive impact on the

purchase and consumption of vegetables and fruit, thereby contributing to the health of Nova Scotians.

Findings from the focus group/individual interviews suggest that grocery retailers in Nova Scotia should procure a wider variety of locally produced nutritious food items. The results of the food costing survey indicate that retailers should focus on procuring items which were frequently available (40%-69%) and/or sometimes available (10%-39%) in grocery stores in June 2010 since these items may be more readily accessible (Table 3). This would include items of fresh produce, such as turnip, cabbage, and apples, as well as items in other food groups, except the unsaturated fats and oils group. At other times of the year fresh produce items, such as carrots and lettuce, which were rarely or not available in June, may also be readily accessible, particularly during peak harvest season. Although a broader local procurement base could require an increase in local production, as well as changes in distribution, some local items may be readily accessible if contacts were made with local suppliers. Dunne and colleagues (75) suggest that retailers who strive to increase the availability of local in grocery stores could thereby play a key role in connecting consumers with local food.

Participants interviewed in Phase II of this study doubted, however, that even if locally produced nutritious foods were more widely available in grocery stores that this would have the desired effect on healthy eating among some Nova Scotians. Participants perceived that with the wide availability of convenience foods, some consumers have lost connections with locally produced foods, especially fresh vegetables, which may require more time, knowledge and skill to prepare. Family meal preparation activities may be an important consideration in buying local (152). Participants in this present study suggested

that it is important to increase public awareness of the nutritional and health benefits of buying local and to provide opportunities for consumers to strengthen their food preparation skills. Community rooms in many of the large grocery stores in the province would be an example of one location where dietitians and chefs could offer local food-related educational experiences to consumers. Previous research suggests that the provision of recipes (44) and cooking demonstrations may be effective in the promotion of locally produced foods.

### **7.3 Economic Health**

Equal access to nutritious food implies that such food is affordable for all community residents. Extensive previous research indicates that those living in low-income households in Nova Scotia may be unable to afford a basic, nutritious diet (8-11, 16, 110, 112, 153). The current finding that locally produced NNFB items were lowest in price in 75.4% of the grocery stores with local availability is consistent with the findings from the 2007 and 2008 surveys which revealed that local items were priced lowest in 75% of grocery stores in Nova Scotia (30).

Yet, in contrast to these findings, participants interviewed in this present study generally felt that there is a public perception in Nova Scotia that local foods are more expensive than similar options in grocery stores. Participants concluded that this perception might hinder some consumers, particularly those living in low-income households, from seeking local food options in grocery stores. This finding is consistent with the results of a U.S. consumer survey which found that concern about the cost of food significantly decreases the likelihood of buying local (44). Moreover, previous research also indicates that low-income Canadian households are less likely to purchase

fruits and vegetables (22). The lower relative cost of locally produced foods in grocery stores might therefore help to promote local foods in Nova Scotia and encourage more consumers to purchase locally produced foods. Given the extent of the potential monthly deficits that have been documented for low-income households if they were to purchase a basic nutritious diet in Nova Scotia, the implications of these findings on the ability of low-income households to afford a basic nutritious diet is important to investigate further.

This study found, however, that some food labels and in-store signage may not provide sufficient information in order for food costers to accurately determine whether or not an NNFB item is locally produced. This finding is consistent with those of previous food costing studies which investigated the availability of locally produced foods in Nova Scotia (8, 30). This finding indicates that food labelling and signage might pose a barrier to buying local in grocery stores.

The food costers who conducted the survey in June 2010 had received training in food costing, including how to identify local NNFB items. Yet, the food costers obtained information mainly from food package labels and/or in-store signs which would be available to consumers who shop in grocery stores. Certain food items, however, such as store-packaged meats and fresh produce, usually have limited label and/or signage information. Although the food costers were encouraged to ask the retail staff about the origin of fresh produce items and store-packaged meats when necessary, it might be impractical and/or inconvenient for all consumers seeking such locally produced items to do this. Moreover, this study found that sometimes the retail staff members were unable to provide the information requested. Therefore, consumers might not be able to make informed decisions about buying local and/or supporting the local economy while

shopping for certain local NNFB items in grocery stores even though these items may actually be available in stores.

Participants interviewed in Phase II of this study associated buying local with supporting local producers and the economy. This finding is consistent with that of a recent survey in which 94% of Canadian consumers said that they associated local foods with supporting the local economy (154). As participants pointed out, it is important for local producers to receive a fair price for their products not only to maintain the livelihood of producers but also to contribute to the economic vitality of communities. Participants acknowledged that the lower relative cost of local foods might be attributed to lower transportation and distribution costs. Yet, with knowledge of the finding that locally produced NNFB items were lowest in price in 75.4% of grocery stores in Nova Scotia, participants expressed concern that local producers may not be receiving a fair price for their products.

In 2003 Martz and Brueckner (155) reported that a major concern among Canadian farmers surveyed was obtaining a fair price for their products in order to make a profit. Some of these farmers suggested that broadening the system of supply management, which regulates product supply and the price paid to producers in the egg, dairy and poultry industries in Canada (156, 157), might be a solution for improving their financial situation (155). In Phase II of this study participants remarked that the system of supply management in Nova Scotia may be an important contributing factor to the predominant availability of locally produced fresh milk and eggs in grocery stores.

Yet, as participants in the second phase of this study also acknowledged, despite the benefits of the current system of supply management, the current system may also

have disadvantages for producers and consumers. For example, it is difficult for new producers to gain entry into supply managed industries, such as the dairy industry in Nova Scotia (156), due to production quotas and the associated high costs (158). Moreover, although locally produced fresh milk is widely available in stores, the regulated support price for milk is “artificially high” (159, p. 1), and may not be affordable for low-income families (111, 112, 160). Canadian policy analysts (158-161) and members of the Canadian Restaurant and Foodservice Association (161) recommend reforms to dairy price controls so that milk is more affordable to Canadian consumers.

In addition to their concern about fair price-setting, participants in the second phase of this study spoke of other concerns related to small-scale local food production and marketing, such as the cost of the labelling and packaging required by retailers, inadequate supplies of local products, and a highly competitive market. Nova Scotia reported an increase in the number of farms (2.9%), and total farm area (2.2%), from 2006 to 2011, and was the only province in Canada to do so (162). Yet, ready access to markets and other supports are required in order for these new farms to survive and prosper. Previous research indicates that farmers in Nova Scotia and PEI perceive that cooperatives benefit producers by reducing competition between individual producers and negotiating a fair price for local products (163). Apple growers in Nova Scotia have a long history of participation in a cooperative which currently oversees storage and marketing for local producers (164). More than 200 local food cooperatives of various forms were operating in Canada in 2008 (165).

In recent years a system of domestic fair trade has been developed to support the livelihood of local producers and, in addition, to provide fair opportunities for retailers



and equal access to healthy food for consumers (166), particularly through the cooperative model (167). This system may provide an efficient, co-ordinated approach for small-scale producers to supply grocery stores in the province with a variety of nutritious, locally produced foods. Moreover, this system may implement efforts to meet the needs of low-income consumers for whom access to affordable, nutritious food is a concern (168).

#### **7.4 Environmental Health**

A sustainable diet which, by definition, is “...protective and respectful of biodiversity and ecosystems” (169, p. 10) serves to support and improve the environmental health of a community-based food system (122). Community food security (CFS) is therefore concerned with the viability of our natural resources and the sustainability of local food production (118). It was evident that some participants in Phase II of this study shared these concerns as they defined *local* from a physical-environmental perspective or mentioned that they associated local foods with eating according to seasonal availability.

This finding is consistent with that of Brooks et al. (170) who conducted focus groups with British consumers and found that some participants associated seasonality with locally produced foods. Yet, these authors, who also investigated the environmental effect of seasonality by conducting case studies of individual foods, found that food production methods appear to have a greater impact on the environment than the practice of eating seasonally. Similarly, Hospido and colleagues (171) found considerable variation in the degree of environmental impact between farms within the U.K. Born and Purcell (94, 95) maintain that although the assumption is often made that local food

systems are intrinsically sustainable, ecological sustainability is not created merely by the scale of the system. Therefore, they assert that it is important to conduct food-systems planning in order to minimize any potential problems.

The findings of this current study indicate that the system of food procurement and distribution used by grocery stores may be in conflict with some of the goals of CFS and food system localization. Hawkes and colleagues (172) concluded that all food system components, including production, distribution and marketing, as well as food processing, should be considered in order to develop effective policies to promote healthy eating. A common theme emerging from the interviews was that grocery stores no longer buy directly from local producers. The centralized distribution system used by some grocery retailers may require local food items to be shipped out of a local area to a central warehouse before being shipped back and distributed to stores, thereby contributing to transportation and environmental costs.

Previous research has indicated that it may be challenging to rely on conventional distribution systems for local food procurement (96). This practice will need to be examined so that the transition towards a more localized food system can contribute to the health of the environment as well as to an improved food distribution system.

Food production in the Maritime Provinces faces challenges and limitations imposed by climate and the length of the growing season. Insufficient supply and a lack of storage facilities can affect the availability of locally grown foods. The 2010 Nova Scotia Participatory Food Costing Project (16) conducted the survey during the period of June 11 to June 24, which was early in the growing season. Seasonality may have been a factor in the finding that more than half of the NNFB items in the vegetables and fruit

group, including broccoli, carrots and sweet potatoes, were either rarely or not available as local options in grocery stores.

## **CHAPTER 8: CONCLUSIONS, IMPLICATIONS & RECOMMENDATIONS**

### **8.1 Introduction**

This study analyzed secondary data from the local foods component of the 2010 Nova Scotia Participatory Food Costing Project in order to determine the availability and relative cost of nutritious, locally produced foods in grocery stores throughout the province. For the purpose of the project, local foods were defined as those grown or produced in the Maritime Provinces. The findings were presented to members of stakeholder groups, including agricultural awareness, health, and nutrition committees/organizations, who participated in focus group interviews to interpret the results with regard to their respective mandates. This chapter presents the conclusions, suggests possible next steps in applying the findings, and identifies directions for future research. The goal is to inform food security and healthy eating policy in Nova Scotia.

### **8.2 Conclusions**

The findings pertaining to local food availability and relative cost in grocery stores in Nova Scotia provide evidence that:

#### **8.2.1 Conclusion One**

**Consumers do not have access to a wide variety of nutritious locally produced food items in grocery stores in Nova Scotia.** The findings indicate that consumers who wish to buy local in grocery stores throughout the Nova Scotia will encounter a limited selection of locally produced NNFB items. Although it is possible that locally produced items such as fresh produce may be more widely available in

grocery stores at other times of the year, the results of previous food costing studies conducted in Nova Scotia in 2007 and 2008 also revealed similar levels of local food availability during the month of June (30).

**8.2.1.1 Implications for Food Security and Healthy Eating.** Grocery stores procure the majority of the items in the NNFB from non-local sources. Of particular concern is the finding that in the vegetables and fruits group only two of the 12 locally produced, available items were predominantly available in stores in June. Increased access to local foods would serve to promote and complement healthy eating. Consumption of fresh, local foods would contribute to the health of Nova Scotians. With limited access to locally produced fruits and vegetables consumers may not reap the health benefits. Consumers for whom transportation is an issue may not be able to access local produce from other venues, such as farmers' markets. Moreover, local producers are receiving limited economic benefits from sales to grocery stores, and as a result, their livelihood may be affected.

**8.2.1.2 Recommendation.** The findings pertaining to local food availability in grocery stores in Nova Scotia suggest that the following course of action be taken:

- Grocery retailers should strive to broaden their local food procurement base. Emphasis should be placed on increasing procurement of locally produced foods such as turnip, cabbage, and apples, which were at least *sometimes available* (10%-39%), and therefore sourced locally by some stores in June.

## **8.2.2 Conclusion Two**

**In grocery stores where local products are available, the lowest food price is usually that of a locally produced item.** In 75.4% of grocery stores where local NNFB items were available the locally produced item was lowest in price.

**8.2.2.1 Implications for Food Security and Healthy Eating.** The promotion of local NNFB items as comparably priced with similar non-local items could lead to an increased consumer demand for these local items. An increase in consumer demand for locally produced foods could result in an increased supply of local foods to grocery stores. This could have positive effects on the local economy. Moreover, the lower relative cost of locally produced NNFB items in grocery stores would enable consumers in Nova Scotia to be able to eat healthy more economically. However, some consumers with a low household income may not be able to access or afford locally produced NNFB foods. Moreover, some local producers may be receiving low returns for their products.

**8.2.2.2 Recommendations.** The findings pertaining to the relative cost of locally produced foods in grocery stores in Nova Scotia suggest that the following action should be taken:

- The comparable cost of locally produced foods should be used as a promotional feature to encourage consumers to buy local.
- Multiple levels of government should continue to support innovative ways to increase the availability of nutritious, locally produced foods and to make them more accessible for Nova Scotians.
- All stakeholders should strive towards the establishment of a fair pricing system.

### **8.2.3 Conclusion Three**

**Consumers may require additional product information in order to distinguish between local and non-local items in grocery stores in Nova Scotia.**

Consumers may need to read the back or side panels of pre-packaged food items in order to determine the country of origin and address information. This information, however, may be insufficient to determine whether the item is locally produced. For example, the label may provide the address of the distributor rather than the producer. Consumers may have to consult grocery store staff in order to identify the origin of certain nutritious foods. Items such as fresh produce and store-packaged meats, for example, tend to have limited label and/or signage information. Product labels and in-store signs can sometimes provide confusing, and even conflicting, information with regard to place of origin. Therefore, this may hinder consumers' attempts to buy local in grocery stores.

**8.2.3.1 Implications for Food Security and Healthy Eating.** With limited regional place of origin information on food labels and/or in-store signs, consumers may not be able to make informed decisions about their food purchases. This lack of clarity poses a barrier to buying nutritious, locally produced foods in grocery stores.

**8.2.3.2 Recommendations.** The findings of this research suggest that there is a need to provide clear and consistent place of origin information on food labels and in-store signs. Therefore, the following recommendations are proposed:

- Retailers should work with local producers to ensure that food product labels carry consistent local identifying information, such as a symbol or logo, which will enable the consumer to readily identify the origin of the product while it is on display in the grocery store.

- Grocery retailers should ensure that store-packaged meat and items of fresh produce on display in stores are accompanied by accurate place of origin labelling and/or signage.
- The Government of Canada should review and revise food labelling legislation pertaining to place of origin so that consumers are provided with clear and accurate food origin information.
- Multiple levels of government should continue to support local producers in the implementation of innovative methods of food traceability so that consumers are aware of the source of the foods which they purchase in grocery stores.

### **8.3 Next Steps in Applying the Findings**

The overall goal of this study is to inform policy makers and guide local food system development in Nova Scotia. Collaboration among stakeholder groups will be important for overcoming the barriers to buying local and capturing opportunities to increase the availability of nutritious, locally produced foods in grocery stores in Nova Scotia. Food costers who participated in the 2010 Nova Scotia Participatory Food Costing Project (16) will be integral to this phase of the participatory action research process by sharing, from a consumer's perspective, what they have learned through this research project. The following recommendations are made in order to build CFS and promote healthy eating by enhancing the connections between local food producers, grocery retailers and consumers:

- Through ongoing collaboration, members and partners of the 2010 Nova Scotia Participatory Food Costing team should review the food costing findings to assess what has been learned about local food availability and relative cost in grocery stores, and determine how this evidence may be used to build capacity:



- What are the strengths of local food availability and relative cost? How should community members build on these efforts? What has to be done differently? Develop innovative ways to move forward.
- Develop a media/press release of the key findings. Dissemination methods could include a video clip and/or printed media release with visuals (e.g. several graphs). Post online on the Participatory Action Research and Training Centre on Food Security and the Nova Scotia Food Security Network websites and in the social media.
- Conduct community conversations so that food costers and other team members are afforded the opportunity to share what they have learned about buying local at grocery stores in Nova Scotia.
- Collaborate with agricultural and local food organizations (e.g. Nova Scotia Department of Agriculture, Nova Scotia Federation of Agriculture). Share the key research findings with them and provide them with the opportunity to share their perspectives and participate in ongoing collaboration.
- Communicate with retailers and head office personnel of the participating grocery stores in order to thank them for their participation, disseminate the relevant research findings, and provide them with the opportunity to respond and share their views.

## **8.4 Implications for Future Research**

The results of this current study highlight directions for future local food research. This section offers suggestions for research which could build upon the findings of this present study in order to further our understanding of the local food system, food security and healthy eating in Nova Scotia.

### **8.4.1 Food Costing in Grocery Stores**

**8.4.1.1 Time of the Survey.** In grocery stores in Nova Scotia there may be seasonal variations in the availability and cost of certain locally produced foods, such as

fruits and vegetables. Focus group participants therefore suggested that future local food costing studies should be conducted during different seasons of the year in order to assess whether seasonality is a determining factor.

**8.4.1.2 Price.** This present investigation, as well as previous studies of local food availability in grocery stores in Nova Scotia (10, 11, 30) determined the relative price of local foods in comparison to similar non-local items. Focus group participants suggested that more specific price comparisons would enable more detailed analyses to better inform their work. For example, future research could determine whether local NNFB foods are priced within 10% of the price of similar non-local options.

**8.4.1.3 Food Basket.** This study investigated the availability of locally produced NNFB items in grocery stores. Focus group participants suggested that future studies might adapt this food basket and include additional local items. Another suggestion was to develop a distinct food basket of locally produced foods.

**8.4.1.4 Definition of *Local*.** Participants suggested that there is a need for clearer guidelines used to assess whether processed food products are local in origin. Most participants were satisfied, however, with the definition of local, the Maritime Provinces, used in the 2010 food costing survey. Yet, when asked how they defined local, most participants considered an area closer to home first. Therefore, it may be more appropriate to use this approach in defining local for future food costing studies.

**8.4.1.5 Recommendations.** Based on the findings of this research the following recommendations for food costing are proposed:

- Determine the availability and relative cost of nutritious, locally produced foods in grocery stores in Nova Scotia, both during and outside of the peak harvest season.

- Determine the price difference between nutritious, locally produced foods and similar non-local products in grocery stores in Nova Scotia.
- With reference to the quantitative and qualitative findings of this study, review the foods included in the Nova Scotia-adapted NNFB in order to ascertain whether changes are appropriate, and if so, make the necessary revisions.

#### **8.4.2 Perceptions of Food Costers and Consumers**

Participants were unsure of the implications of the findings for consumers who have a low household income. In order to better inform their work participants would like to know more about the barriers and enablers to buying locally produced foods in Nova Scotia. In particular participants expressed an interest in learning about food costers' and consumers' perceptions of the relative cost of local foods and the process of buying local in grocery stores.

**8.4.2.1 Recommendations.** The following recommendations are made in order to further our understanding of grocery shoppers in Nova Scotia and their intent to purchase locally produced foods:

- Investigate the food costers' reactions to local food availability and relative cost, as well as the implications of the findings for buying nutritious, locally produced foods.
- Investigate consumers' perceptions of buying local foods in grocery stores in Nova Scotia.

#### **8.4.3 Perceptions of Local Farmers and Retailers**

Findings of this study indicated that although certain NNFB items, such as apples and carrots, are produced locally, they were not predominantly available in grocery stores in Nova Scotia in June 2010. Participants suggested that issues related to local food

production, distribution and procurement might be impacting the availability of such locally produced foods in grocery stores.

**8.4.3.1 Recommendation.** The following recommendations are made in order to further our understanding of local food procurement by grocery stores in Nova Scotia:

- Investigate local farmers' and retailers' perceptions of the findings pertaining to the availability and relative cost of locally produced foods in grocery stores in Nova Scotia in June 2010.

#### **8.4.4 Food Costing in Alternate Markets**

Nova Scotia farmers engage in direct marketing of their products through various venues such as farmers' markets and roadside farm markets. Participants wondered about the availability and cost of nutritious locally produced foods at these venues and the implications for food security and healthy eating initiatives in Nova Scotia. Some participants suggested that it would also be informative to conduct such a study and to compare the findings with those from grocery stores. In order to accomplish this, a pilot project should be conducted to develop a suitable food basket of locally grown vegetables and fruit. It may be challenging, however, to accommodate factors such as different varieties of produce items and organically grown, as well as conventionally grown, foods.

**8.4.4.1 Recommendation.** The following recommendation is made in order to further our understanding of the availability and relative cost of local foods in alternate markets in Nova Scotia:

- Investigate the availability and price of locally produced foods in alternate markets and compare the findings with those pertaining to similar local and non-local items in grocery stores.

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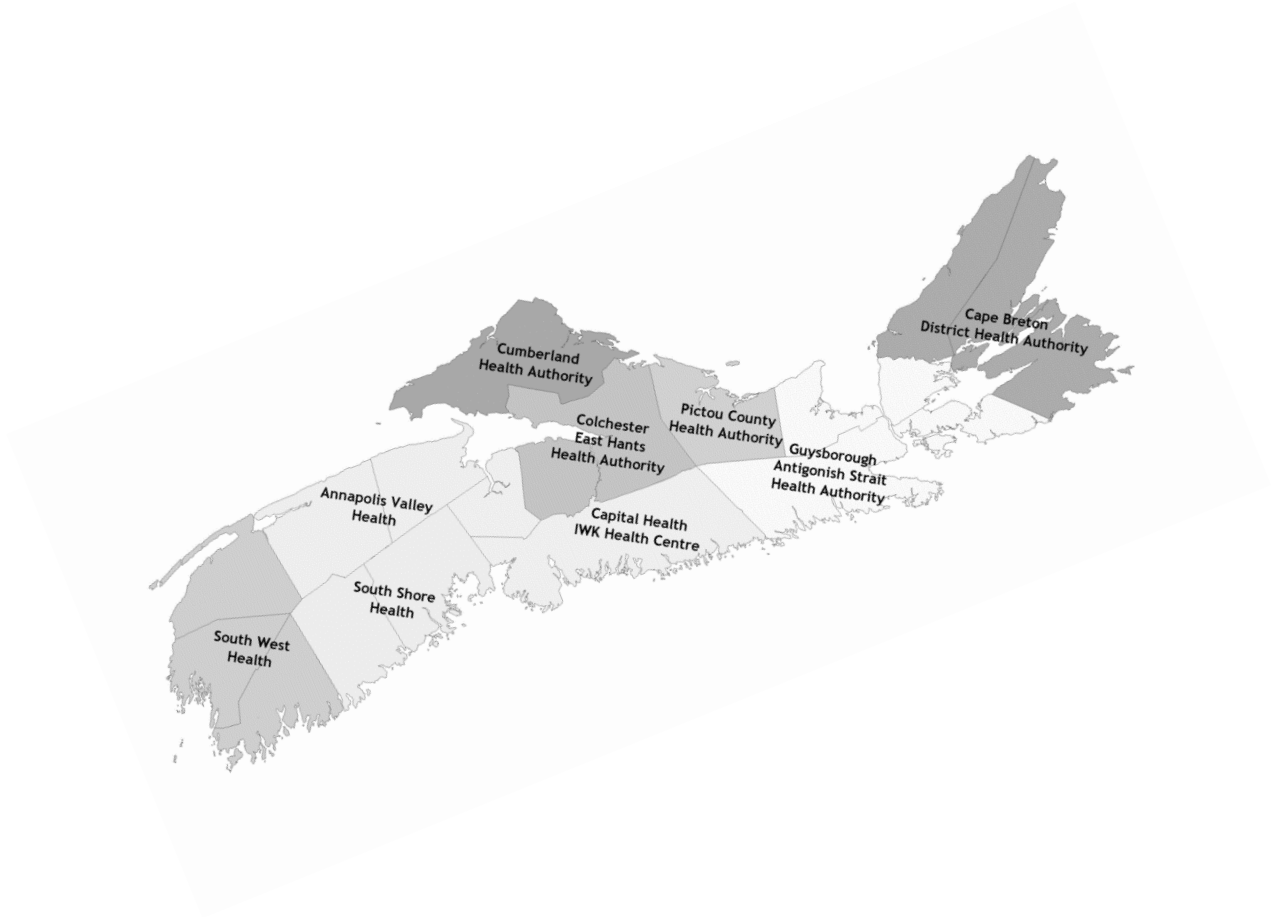
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## APPENDIX A

### Nova Scotia District Health Authorities\*



District #	Nova Scotia District Health Authority
1	South Shore Health
2	South West Health
3	Annapolis Valley Health
4	Colchester East Hants Health Authority
5	Cumberland Health Authority
6	Pictou County Health Authority
7	Guysborough Antigonish Strait Health Authority
8	Cape Breton District Health Authority
9	Capital Health

\* Source: Nova Scotia Department of Health and Wellness (173)

## APPENDIX B

### Invitation Sent to Grocery Store Managers

*(Originally placed on MSVU, Nova Scotia Provincial Participatory Food Costing Project, and Health Promotion and Protection\* Letterhead)*

May 21, 2010

Dear (store manager),

The Nova Scotia Food Security Network (NSFSN), Department of Health Promotion and Protection (DHPP), and Mount Saint Vincent University in partnership with community organizations across the province, are conducting a Food Costing survey to determine the cost of a basic nutritious diet.

***In preparation for the Food Costing survey we have contacted the head offices of major grocery stores as well as independent retailers to obtain approval for this study. Your store has been selected through a random sampling of grocery stores throughout Nova Scotia to participate in this important research. We invite your participation in this study by allowing food costers to collect pricing information in your store during the week of June 11<sup>th</sup> -17<sup>th</sup>, 2010.***

The aim of this project is to estimate the generic cost of a healthy diet across the province. A survey tool called the National Nutritious Food Basket (NNFB), which was developed by Health Canada, is used to determine this cost. The NNFB consists of a list of 67 common foods that represent a basic nutritious diet for Canadians. The data collected using this tool is used to raise awareness of the cost of a healthy diet and to compare the adequacy of various income levels to provide that healthy diet. Food costing has been done for several years in many provinces across Canada and was most recently conducted in Nova Scotia in June 2008.

By surveying food prices from various grocery stores across the province we will determine the extent to which Nova Scotia families can afford a healthy diet. The sample

of selected stores was chosen from a list of all grocery stores across the province. Prices from all stores will be pooled to determine an average cost of a healthy diet in Nova Scotia. Individual prices, food brands and store names will be kept strictly confidential. **Participating grocery stores will not be identified and the costs, either for specific foods or for the nutritious food basket will never be released for any one store.** This survey is not intended to determine the cost of food items per store but rather the average cost of eating a nutritious diet.

The food pricing will be conducted by two individuals from a community organization in your area. With your permission, those completing food costing will spend approximately 120 to 180 minutes in your store. You will be informed of the date that the food pricing will take place in your store in advance and food costers will identify and introduce themselves to store managers before beginning the food pricing. As well, they will wear badges indicating they are part of the Provincial Participatory Food Costing Project.

Your participation in this project is greatly appreciated and we look forward to working with you. Please do not hesitate to contact me at (902) 457-5548, if you have any questions. We will be contacting you by phone within the next week to discuss your participation.

Sincerely,

Cynthia Watt  
Provincial Participatory Food Costing Coordinator  
Participatory Action Research & Training Centre on Food Security  
Mount Saint Vincent University  
2 Melody Drive  
Halifax, Nova Scotia  
B3M 2J6  
(902) 457-5548  
cynthia.watt@msvu.ca

\* Former name. Now part of the Nova Scotia Department of Health and Wellness merger.

## APPENDIX C

### Sample Page from National Nutritious Food Basket Survey Tool (12)\*

A Food	B Purchase Size	C Price	D On Sale (√)	E Comments & Calculations	F Was Lowest Price Local? (circle one)	G If the Lowest Price Wasn't Local, Was Local Available? (circle one)	H Price of Local Item	I How Did You Know This Product Was Local? (check one)	J Price Entered to Spread- sheet
Milk & Milk Alternatives									
2% milk	4L				YES? NO? UNSURE?  Brand: _____  Product of: _____  Address: _____	YES? NO? UNSURE?  <i>(if yes)</i> Brand: _____  Product of: _____ <b>NS NB PEI</b> Address: _____	\$ _____  (record purchase size)	<input type="checkbox"/> Label  <input type="checkbox"/> Signage  <input type="checkbox"/> Asked Staff  <input type="checkbox"/> Other	

\* In column G the phrase “Product of: NS NB PEI” refers to the three Maritime Provinces, Nova Scotia, New Brunswick and Prince Edward Island, which were included in the definition of *local*.

Source: Nova Scotia Participatory Food Security Projects (31)



## APPENDIX D

### Focus Group Invitation

*(To be placed on MSVU Letterhead of the Department of Applied Human Nutrition)*

(Insert date), 2011

Dear (Name of organization/committee gatekeeper to be inserted here):

My name is Beverley Noseworthy. I am a graduate student in the Department of Applied Human Nutrition at Mount Saint Vincent University. As part of my thesis research, under the supervision of Dr. Patty Williams, I have analyzed the local food data collected in grocery stores throughout Nova Scotia during the 2010 phase of the Nova Scotia Participatory Food Costing Project to determine the availability and relative cost of locally produced foods.

During the next phase of my thesis research I would like to present findings from the analysis of the local food data to members of (Name of organization/committee). In addition, I wish to investigate the implications of these findings for food security and healthy eating in Nova Scotia.

Therefore, I am inviting you and other members of (Name of organization/committee) to participate in a focus group interview in order to explore the implications of the 2010 local food costing findings. The focus group interview will require approximately 60 to 90 minutes of your time. We will use this information to inform practices and policies pertaining to food security and healthy eating initiatives.

For your information I have attached a copy of the summary of my proposed research as well as a copy of the focus group interview guide. I will contact you shortly after (Insert date) to determine whether you are interested in participating, and if so, to identify the names and contact information of members who wish to participate. A convenient date and time for the focus group interview will then be arranged. Locally-sourced refreshments will be provided during the interview. Please inform me if you have any special diet considerations. Should you wish to obtain any additional information please feel free to contact me or my thesis supervisor.

Thank you very much for your time and consideration.

Sincerely yours,

Beverley Noseworthy

Graduate Student  
Department of Applied Human Nutrition  
Mount Saint Vincent University  
beverley.noseworthy@msvu.ca

Patricia Williams, Ph.D., P.Dt.  
Associate Professor, Department of Applied Human Nutrition  
Canada Research Chair in Food Security and Policy Change  
Director, Participatory Action Research and Training Centre on Food Security  
Research Associate, Atlantic Health Promotion Research Centre  
Mount Saint Vincent University  
2 Melody Drive  
Halifax, NS B3M 2J6  
patty.williams@msvu.ca  
(902) 457-6394

### **Summary of Research Proposal**

The availability and relative cost of local nutritious food products may have implications for Nova Scotians' healthy food choices. The purpose of this study is: (1) to determine the availability and relative cost of nutritious locally produced foods in grocery stores throughout Nova Scotia, and (2) to examine, from the perspectives of key stakeholder groups, the implications of local food availability and relative cost for food security and healthy eating in Nova Scotia. This proposed study will use mixed methods within a framework of participatory action research. Data collected as part of the 2010 Nova Scotia Provincial Participatory Food Costing Project will be statistically analyzed to determine the availability and relative cost of locally produced foods from a stratified random sample of 46 grocery stores. These results will then be presented to members of health, nutrition and agricultural awareness organizations who will participate in focus group interviews to reflect upon and interpret the findings in light of their mandates. Thus, this study will aim to contribute to recommendations for future monitoring of the availability and relative cost of local foods in grocery stores. The overall goal of the study will be to inform practices and policies pertaining to food security and healthy eating initiatives in Nova Scotia.

## **Focus Group Interview Questions**

### **Exploration of *local*:**

1. When you think about local foods, what is your definition of *local*?
2. How do local foods relate to the mandate of your committee/organization?

### **Distribute handout and present findings (10 minutes).**

### **Implications of the findings:**

3. What are your initial reactions to the availability of local food items in grocery stores?
4. What is your impression of the relative cost of locally produced foods?

### **Next steps in applying the findings:**

5. What local food-related issues need to be addressed?
6. Where is there opportunity for addressing some of these issues?

### **Local food costing and recommendations for the future:**

7. What else would you need to know to inform the work that you are doing?
8. How might local food costing be improved?

### **Before concluding (5-10 minutes):**

The purpose of this focus group session was to explore the implications of the local food costing findings for food security and healthy eating in Nova Scotia.

9. Is there anything that we have omitted from the discussion?

## APPENDIX E

### Free and Informed Consent Form

*(To be placed on MSVU Letterhead of the Department of Applied Human Nutrition)*

**Title of Study:** *Buying Local at Grocery Stores in Nova Scotia: Implications for Food Security and Healthy Eating*

**Researcher:** Beverley Noseworthy, graduate student in the Department of Applied Human Nutrition at Mount Saint Vincent University

**Thesis Supervisor:** Dr. Patricia Williams, Associate Professor and Canada Research Chair in Food Security and Policy Change, Department of Applied Human Nutrition at Mount Saint Vincent University and Director, Participatory Action Research and Training Center on Food Security

**Purpose:** As part of my studies, I am conducting research under the supervision of Dr. Patty Williams. The purpose of the study is to examine the availability and relative cost of local foods in grocery stores in Nova Scotia and determine implications for food security and healthy eating. You are being invited to participate in a focus group interview to explore the implications of the food costing findings for food security and healthy eating. The focus group will require approximately 60 to 90 minutes of your time.

**Risks/Benefits:** There is no anticipated discomfort for those participating in this study, so risk to participants is minimal. Although it is not possible to guarantee that participants will not share opinions expressed in the focus groups, no personal information will be shared, so the potential risks appear to be minimal. A benefit of participating is the opportunity to provide information which will further our understanding of the value of monitoring local food availability and cost in grocery stores. We will use this information to inform policy pertaining to food security and healthy eating initiatives.

**Voluntary Participation/Withdrawal:** Your participation is completely voluntary. You may withdraw from this study at any time without penalty.

**Confidentiality:** The researchers will maintain confidentiality of the focus group discussion. Members of the focus group will be asked to sign a confidentiality agreement.

**Questions:** If you have any questions about this study now you may ask the researcher. If you have any questions at a later time, please contact:

Beverley Noseworthy  
Dr. Patty Williams

E-mail: [beverley.noseworthy@msvu.ca](mailto:beverley.noseworthy@msvu.ca)  
Tel. (902) 457-6394 E-mail: [patty.williams@msvu.ca](mailto:patty.williams@msvu.ca)

This research activity has met the ethical standards of the University Research Ethics Board at Mount Saint Vincent University. If you have any questions or concerns about this study and wish to speak with someone who is not directly involved with this study, you may contact the University Research Ethics Board, by phone at (902) 457-6350, or by e-mail at [research@msvu.ca](mailto:research@msvu.ca).

**By signing this consent form, you are indicating that you fully understand the above information and agree to participate in this study.**

---

_____ <b>Participant's Signature</b>	_____ <b>Date</b>
_____ <b>Researcher's Signature</b>	_____ <b>Date</b>

After this study is completed, in approximately one year from now, a summary report will be available for distribution to participants.

**Would you like to receive a copy of the summary report?** (Please circle one)    **YES**  
**NO**

**Only those who wish to receive a copy of the report are asked to please provide a contact address:**

EITHER

E-mail address: \_\_\_\_\_

OR

Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

*One signed copy to be kept by the researcher, one signed copy to the participant.*

**APPENDIX F**

**Audio Recording Consent Form**

*(To be placed on MSVU Letterhead of the Department of Applied Human Nutrition)*

I \_\_\_\_\_ have read about the study.  
(please print first and last name)

- I know my voice will be recorded during the focus group.
- I have been given the opportunity to ask questions about the study. Any questions that I asked have been answered to my satisfaction.
- I understand that the audio recordings will be transcribed without any information that could identify me. The audio recordings will later be destroyed.
- I hereby consent for my voice to be recorded during my participation in this study.
- I am aware that my participation is voluntary and that I am free to withdraw from the study at any time.

\_\_\_\_\_  
**Participant's Signature**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Researcher's Signature**

\_\_\_\_\_  
**Date**

*One signed copy to be kept by the researcher, one signed copy to the participant.*

**APPENDIX G**

**Focus Group Confidentiality Form**

*(To be placed on MSVU Letterhead of the Department of Applied Human Nutrition)*

I \_\_\_\_\_ understand that the information that I hear in the focus (please print first and last name) group will be confidential. I will not repeat any information concerning the opinions and identities of other participants.

\_\_\_\_\_  
**Participant's Signature**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Researcher's Signature**

\_\_\_\_\_  
**Date**

*One signed copy to be kept by the researcher, one signed copy to the participant.*

## APPENDIX H

### Focus Group Interview Guide

*(To be placed on MSVU Letterhead of the Department of Applied Human Nutrition)*

#### **Introduction of researcher(s):**

1. Graduate student in the Department of Applied Human Nutrition at MSVU
2. Thesis Supervisor, Dr. Patty Williams

#### **Introduction of participants:**

- Members of health, nutrition and agricultural awareness committees/organizations in Nova Scotia

#### **Background to the research:**

Since 2002 the Nova Scotia Participatory Food Costing Project has conducted food costing studies in grocery stores throughout the province in order to monitor the cost of a basic nutritious diet. Ongoing funding support is provided by the Nova Scotia Department of Health and Wellness so that Mount Saint Vincent University and the Nova Scotia Food Security Network can work with community partners in gathering evidence to help inform food security-related policy and program change.

In conjunction with participatory food costing, a local foods pilot project was conducted in 2004-2005(9), followed by local food costing in 2007 and 2008, in order to determine the availability and relative cost of local foods in grocery stores in Nova Scotia. Following the analysis of these local food costing studies, several changes were made to the survey tool and protocol before the most recent food costing was conducted in 2010.

#### **Purpose of the study:**

1. To determine the availability and relative cost, of nutritious locally produced foods in grocery stores in Nova Scotia
  - To ascertain the extent to which foods produced in the Maritime Provinces are available in grocery stores throughout Nova Scotia
  - To determine whether local foods are more available in smaller versus larger grocery stores, or in rural versus urban areas of Nova Scotia
  - To establish the percentage of times the lowest food price is that of a locally produced item



2. To explore views on the implications and application of the findings in promoting and supporting food security and healthy eating in Nova Scotia
  - To present findings to members of agricultural awareness, health and nutrition committees/organizations who will assist in the interpretation of the results and discuss:
    - their reactions to local food availability and cost
    - the implications in terms of their respective mandates
    - the next steps in applying the findings – appropriate policies and programs
    - the process of local food costing and recommendations for the future

**Focus Group Description:**

- Procedures
  - Discussion - local food costing
  - Time - approximately 60 to 90 minutes.
- Audio recording
- Consent forms

**Explain and obtain consent:**

- Free and informed consent form
- Audio recording consent form
- Focus group confidentiality form

**Focus Group Questions**

**Exploration of *local*:**

1. When you think about local foods, what is your definition of *local*?
2. How do local foods relate to the mandate of your committee/organization?

**Distribute handout and present findings (10 minutes).**

**Implications of the findings:**

3. What are your initial reactions to the availability of local food items in grocery stores?

Prompts:

- What are the strengths? Areas of need?
- What factors might determine availability?

- How might this influence... food purchases, food security, healthy eating?
4. What is your impression of the relative cost of locally produced foods?  
Prompts:
    - What factors might determine the relative cost?
    - What could this mean for...food purchases, food security, healthy eating?

**Next steps in applying the findings:**

5. What local food-related issues need to be addressed?  
Prompts:
  - Issues with production, distribution, awareness, etc.?
6. Where is there opportunity for addressing some of these issues?  
Prompts:
  - Planning, program development, policy applications
  - Food security, healthy eating, local food promotion

**Local food costing and recommendations for the future:**

7. What else would you need to know to inform the work that you are doing?  
Prompts:
  - What additional analyses might be useful?
8. How might local food costing be improved?  
Prompts:
  - Method
  - Data collected (e.g. food categories, price)
  - Definition of local
  - Time (June)

**Before concluding (5-10 minutes):**

The purpose of this focus group session was to explore the implications of the local food costing findings for food security and healthy eating in Nova Scotia.

9. Is there anything that we have omitted from the discussion?

**Thank participants.**

## APPENDIX I

### Availability of Locally Produced National Nutritious Food Basket Items

Locally Produced National Nutritious Food Basket (NNFB) Items Available by Food Group in a Random Selection (n=46) of Nova Scotia Grocery Stores, June 2010

<b>Food Group</b>	<b>No. of Items in Food Group</b>	<b>Total Items in Food Group in All Stores</b>	<b>No. of Store Items with Local Option</b>	<b>No. of Store Items with Local Option at Lowest Price</b>	<b>Availability of Items with Local Option* (%)</b>	<b>Availability of Items with Local Option at Lowest Price<sup>a</sup> (%)</b>
Vegetables & Fruit	31	1426	251	201	18	80
Grain Products	13	598	156	108	26	69
Milk & Alter.	5	230	69	52	30	75
Meat & Alter.	14	644	154	114	24	74
Unsat. Fats & Oils	4	184	8	6	4	75
<b>Grand Total</b>	<b>67</b>	<b>3082</b>	<b>638</b>	<b>481</b>	<b>20.7</b>	<b>75.4</b>

\* Number of store items with local option / Total items in food group in all stores

<sup>a</sup> Number of store items with local option at lowest price / Number of store items with local option

## APPENDIX J

### Analysis of Variance Results for Local Food Availability

Analysis of Variance Results for Local Food Availability at Any Price According to Grocery Store\* Location in District Health Authorities in Nova Scotia, June 2010

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<b>Source of Variation</b>	<b>SS</b>	<b>Df</b>	<b>MS</b>	<b>F</b>	<b>P-value</b>	<b>F crit</b>
Between Groups	185.1846	3	61.72818767	2.139037	0.10961958	2.827049
Within Groups	1212.033	42	28.85792448			
Total	1397.217	45				

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\* Samples ranged from 9 to 16 grocery stores

Analysis of Variance Results for Local Food Availability at Lowest Price According to Grocery Store\* Location in District Health Authorities in Nova Scotia, June 2010

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<b>Source of Variation</b>	<b>SS</b>	<b>df</b>	<b>MS</b>	<b>F</b>	<b>P- value</b>	<b>F crit</b>
Between Groups	44.29082	3	14.76361	0.403923	0.750926	2.827049
Within Groups	1535.122	42	36.55053			
Total	1579.413	45				

---

\* Samples ranged from 9 to 16 grocery stores