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Food Security and Insecurity in New Brunswick: Portrait, Challenges, and Perspectives

Report

Dominique Pépin-Filion, Carole C. Tranchant, Éric Forgues, Natalie Carrier, Caroline LeBlanc and Joannie LeBlanc

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Canadian Institute for Research on Linguistic Minorities

The Canadian Institute for Research on Linguistic Minorities is an independent, non-profit research organization established with funding from the Department of Canadian Heritage. Its role is to lead, bring together, and partner with researchers, community agencies, and government bodies to promote a greater knowledge of the status of Canada's official language minorities and a better understanding of the priority issues that concern them.

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The authors have no conflict of interest to declare.

NBAFB
New Brunswick Association of Food Banks

N.B. FOOD SECURITY ACTION NETWORK
RÉSEAU D'ACTION SUR LA SÉCURITÉ ALIMENTAIRE DU N.-B.

New Brunswick Health Research Foundation
Fondation de la recherche en santé du Nouveau-Brunswick

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UNIVERSITÉ DE MONCTON
CAMPUS DE MONCTON
Faculté des sciences de la santé et des services communautaires
École des sciences des aliments, de nutrition et d'études familiales

[1] The use of the masculine gender is for the sole purpose of simplifying the text.

ABSTRACT

This study is concerned mainly with two aspects of food security: the socio-economic and dietary contexts of New Brunswick communities, and the preferred approaches used by community initiatives promoting food security. We also pay particular attention to the relationship between the linguistic composition of the populations studied and their community food security. The three general objectives are to paint a portrait of the community food security situation according to the different socio-economic and dietary contexts of New Brunswick communities, to describe and evaluate the approaches used by community initiatives promoting food security in New Brunswick communities, and to identify measures to be taken with respect to community food security in New Brunswick.[2]

We did a literature review on several themes, for example an analysis of the public policies and government measures concerning poverty and food security in New Brunswick over the last 10 years. The other themes deal with nutrition and food insecurity, food-related social inequalities in health, nutritional quality and safety of food aid, and food security best practices. We did an inventory of food aid organizations (170) and food outlets (408) in the province. In addition, an online survey (100 respondents) was carried out and focus groups (4 groups, 21 participants) were held with the heads of community food security organizations and initiatives. Visits to food aid organizations (13) and the analysis of a list of foods received by one food bank enabled us to evaluate the nutritional quality and safety of food aid.

The 170 food security initiatives were scattered across the province. The organizations in rural areas are farther away from centers, and clearly farther away from one another. This greater distance suggests more travel and less access in rural areas. The rural nature of Francophone communities may bring about particular difficulties, but more research would be required to verify that. The initiatives' main goals were to help low-income people living in poverty (34%), provide access to fresh local foods (23%), or meet a specific demand in the local community (23%). About fifteen different services were offered. There are two categories of approaches: food aid and food security. Only half (47.8%) of the food outlets identified were considered sources of food supportive of healthy eating.

Few organizations indicated getting supplies from local agricultural producers (18%) and community or collective gardens (12%), although they deem their products to be of excellent nutritional quality. The nutritional value of food received from the National Food Sharing System of Food Banks Canada was considered somewhat poor or very poor by half (53%) of the food aid organizations using this food source. Half (53%) of the participating organizations and initiatives said they were concerned about the freshness or safety of the foods offered to clients.

Four in 10 (41%) organizations said they could not fully meet the demand from the public, and estimated that they met, on average, about half of the demand (52%). The funding and the monetary, food, and service donations do not meet all of what more than half (58%) of the organizations and initiatives need to carry out their activities. Disparities in capacity between locations cause disparities in services offered at the local level. Nine organizations in 10 (90%) would be willing to share their strong points with other organizations elsewhere in the province in order to improve community food security in New Brunswick. Priorities for the development of

[2] The authors wish to recognize the work that the charitable and community organizations accomplish in spite of the considerable challenges they face.

food security in communities were collective gardens (31%), information and education about nutrition (31%), collective kitchens (26%), and food buying clubs (23%).

Our analyses show that the food banks provide only half of the recommended number of daily servings of "Vegetables and Fruit" and "Milk Products". The average sodium content of the food aid boxes is more than five times the recommended daily intake of sodium. Out of some 50 food items received by a major food bank from the National Food Sharing System of Food Banks Canada, two thirds were of poor nutritional quality.

Three measures are priorities to reduce food insecurity and increase food security in New Brunswick: a) develop a provincial strategy to increase cooperation, collaboration, and the impact of actions taken; b) identify, improve and increase the number of best practices in the field and of government measures effective to impact on the root causes of food insecurity; c) improve the quantity and the quality of food aid in order to better reflect regional disparities and the economic, nutritional, and health vulnerability of people experiencing food insecurity.

Key words: community food security, food insecurity, Province of New Brunswick, poverty, food aid, nutritional quality, food safety, community sector, social policies

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LIST OF ABBREVIATIONS

CCHS	Canadian Community Health Survey
CFC	Community food centres
CFCC	Community Food Centres Canada
CIN	Community inclusion network
CIRLM	Canadian Institute for Research on Linguistic Minorities
CSA	Community-supported agriculture
ESIN	Economic and Social Inclusion Network of New Brunswick
FB	Food bank
GI	Glycemic index
NBAFB	New Brunswick Association of Food Banks
NBCFSJ	New Brunswick Common Front for Social Justice
NBFSAN	New Brunswick Food Security Action Network
NBHRF	New Brunswick Health Research Foundation
PCSDG	Pays de Cocagne Sustainable Development Group
RDA	Recommended dietary allowance
SK	Soup kitchen
SL	Sustainable livelihoods
UL	Tolerable upper intake level
WHO	World Health Organization

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INTRODUCTION

For the past few years, food insecurity has been a growing focus of research in Canada and elsewhere. A number of indicators point to the persistence of, and even an increase in, food insecurity in recent years, both in New Brunswick and throughout Canada. This complex problem is strongly linked to poverty and to the broader problems of wealth distribution and social inclusion.

Very few studies have looked at this problem in New Brunswick, although a number of actions are being carried out in the field at both the community and government levels. Stakeholders concerned by food insecurity issues need data so they can gain a better understanding of this problem in order to better meet the needs of the population. The New Brunswick Department of Healthy and Inclusive Communities (now part of the Department of Social Development), for example, is seeking recommendations based on research and solid data with a view to increasing its investments in measures promoting food security in the province's communities in accordance with New Brunswick's Wellness Strategy (Government of New Brunswick, 2009c, 2014). Furthermore, food security is one of five priority areas for action in the Province's Public Health Nutrition Framework for Action 2012-2016 (Government of New Brunswick, 2012b). This research project, funded by the New Brunswick Health Research Foundation, is intended to meet this need, at least in part. It aims to do this by taking into consideration linguistic (Anglophone and Francophone) and geographic (rural and urban) factors in the province.

In our research, community food security refers to the availability, supply, accessibility, and use of sufficient healthy and nutritious foods in the province's communities. The project was concerned with two specific aspects of food security: the socio-economic and dietary contexts of New Brunswick communities and the preferred approaches used by community initiatives promoting food security. We also paid particular attention to the relationship between the linguistic composition of the populations studied and their community food security. The three general research objectives made it possible, respectively, to (i) analyze the community food security situation in the different socio-economic and dietary contexts of New Brunswick communities; (ii) describe and evaluate the approaches used by community initiatives promoting food security in New Brunswick communities; and (iii) identify measures to be taken with respect to community food security.

The mixed research methodology, consisting of two components, enabled us to paint a preliminary portrait of community food security New Brunswick. The first component included descriptive analyses of written materials, public policies, and existing government measures concerning food security in the province, and the second was based on an inventory of organizations and food outlets, an online survey, focus groups, and visits to organizations to collect new data on the approaches and practices used by community initiatives promoting food security in New Brunswick communities.

The results of this project include a description of the food security situation in New Brunswick from the standpoint of access to healthy foods for all residents, regardless of their economic status; a description and evaluation of the approaches used by the province communities to increase

food security in order to define the criteria for the success and sustainability of measures concerning food security, specifically, an evaluation of the nutritional quality and safety of food aid; a description of the impact of existing approaches on access to healthy food, nutritional knowledge and skills, and community food security; and recommendations for further actions and measures to be taken or developed to increase community food security.

1. THE PROBLEM OF HUNGER IN CANADA AND NEW BRUNSWICK

The first subsection of this chapter provides some background on the problem of hunger in relation to the different models upon which social policies and measures have historically been based in an effort to mitigate the effects of poverty in Canada and New Brunswick. The second subsection defines the problem of hunger in terms of public health using the concepts of food security, food insecurity, food aid, and community food security, before looking at this social problem from the perspective of social justice.

The third subsection then demonstrates the relevance of addressing this social problem by providing an overview of the extent of the problem in Canada and New Brunswick. The problem is gone into in more depth in the fourth subsection, which sets out the research questions and objectives of this study. This brings us, in the fourth subsection, to a definition of the objectives of our study.

1.1. MODELS FOR POLICIES AND SOCIAL MEASURES CONCERNING POVERTY

To fully understand the initiatives carried out in communities to alleviate hunger and increase food security, it is important to look at them in the broader context of the social measures taken by various stakeholders to reduce poverty and its effects.

Of course poverty is not the only factor that contributes to food insecurity. Lack information and skills with respect to nutrition, along with certain eating habits, also contribute to increasing food insecurity. However, poverty remains the primary factor, hence the importance of looking at the social policies and measures put in place to reduce poverty or, at the very least, alleviate its effects.

Three models of social measures have been used to reduce poverty in the history of Canada and New Brunswick. These social measures and policies transitioned from a charitable to a welfare state model, and then to an approach that some call partnership-based (Leseman, 2001; Jeté *et al.*, 2000, pp. 73-74).

The charitable model is based mainly on forms of local and community solidarity, initially managed by religious institutions. In New Brunswick, for instance, in 1786, the *Poor Law* was passed to address the limitations of private charitable initiatives that could no longer meet all poverty-related needs. Inherited from the British tradition, this law distinguished between the "deserving" poor, who were cast into a precarious situation because of uncontrollable factors (illness, death of spouse or parents) and the "undeserving" poor, considered fit to work. Under the law, each parish appointed three overseers of the poor who managed the funds allocated for the poor. They could, for example, make the relief allocated for those deemed fit to work conditional upon working (Provencher, 2004). This system continued on the Anglophone side until the late 19th century and on the Francophone side, until the early 20th century. Religious institutions also played an important role in caring for the sick, the elderly, orphans, and invalids. Families in the parish might take turns housing a needy villager if the person's family could no longer do so.

In the wake of the economic crisis of the 1930s, the federal and provincial governments gradually started providing health and social services and taking measures to ensure an income for unemployed families, including the *Unemployment Insurance Act* of 1940, the *Hospital Insurance and Diagnostic Services Act* of 1957, and the *Medical Care Act* of 1960. This marked the emergence of the welfare state.

The provincial counterpart of the welfare state, the Equal Opportunity program, implemented in the 1960s in New Brunswick, restructured municipal governance (by eliminating county seats and

adopting the *Municipalities Act*) and centralized a number of services (education, justice, health, social services). In 1960, the *Social Assistance Act* was passed, which helped the needy without making assistance conditional upon working. There was therefore movement away from the spirit of the *Poor Law* (Provencher, 2004). Under this model, the state now played a central role in social assistance, although this did not prevent traditional forms of social assistance solidarity from continuing to exist.

Researchers have observed that, in the 1980s, people started questioning the welfare state model, which was having trouble looking after social needs all on its own.[3] This change can be explained by the government's internal limitations in its ability to meet needs (budgetary and organizational limitations) (Guay, 1997, p. 145), by increasing social needs caused mainly by economic difficulties (recessions in the early 1980s) (Favreau, 1995), and by criticism from social movements that questioned the government's bureaucratic and technocratic intervention model (Leduc, 1999).

From that point on, the government explored new ways of fulfilling its role, turning in particular to civil society with a view to entering into partnership agreements for offering joint social services. The government then started acting more as a facilitator or a framer for actions taken within civil society, taking a back seat to its stakeholders (Leseman, 2001, p. 23; Fontan, 1997, pp. 200 and 206). But this required reviving a civil society that, owing to the increased role played by the welfare state in the provision of services, had sometimes lost its vitality and its means of action (Leseman, 2001, pp. 36-39).

The partnership-based model encouraged a new social contract not only with civil society, but also with individuals. Obtaining aid was becoming conditional upon the efforts that individuals who were able to work had to make to find a job. The adoption of the *Family Income Security Act* of New Brunswick in the late 1990s therefore seems to mark, in certain respects, a return to the spirit of the *Poor Law* by making income assistance conditional on beneficiaries' efforts to rejoin the labour force (Provencher, 2007).[4] These trends were in keeping with changes in social policy at the federal level, as demonstrated by certain analysts.

> Perhaps the fundamental policy direction that was seen in 1994 was a greater focus on individual citizen's needs and abilities. This could be seen in the commonly used themes of investing in people, mutual obligations, caring, social integration, and in the emphasis on active supports to help people to learn and find jobs. The underlying argument was that social security policy must help individuals adapt to a rapidly changing world. It would have to go beyond passive safety nets (Hicksi, 2008).

For some analysts, this new partnership-based model, which put much of the burden of social security on the shoulders of the individual, the family, and the community, reflects a step backwards for social assistance and social justice.

> Governments that dismantle their welfare systems are moving back towards a residual model of welfare. They want welfare systems that only come into effect as a last resort after the family and private markets fail to meet social needs. Residual welfare systems provide only temporary support in ways that do not confer social rights (Rice and Prince, 2000).

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[3] In the 1990s, a number of researchers analyzed the crisis and the reconfiguration or recomposition of the welfare state. See in particular the contributions to number 24 (L'État dans la tourmente) of *Cahiers de recherche sociologique,* edited by Jacques Beauchemin, Gilles Bourque, Jules Duchastel, Gérard Boismenu, and Alain Noël.

[4] *Family Income Security Act.* Retrieved from https://www.gnb.ca/0062/acts/RS-2011/154.pdf

An assessment of these transformations shows, in terms of social policy, that they seem to result in more poverty (Warin, 2009; Barbier, 2009). For some, this social policy model is consistent with neoliberalism: "... the emergence of a neoliberal concept of social protection tends to weaken collective assumption of responsibility for social risks and to transfer them both onto the marketplace and onto family and community resources" (D'Amours, 2009).

1.2. HUNGER AS A PUBLIC HEALTH PROBLEM

Much of the scientific research on food security supports a global vision of the social, economic, and political determinants of the health of populations (Tarasuk, 2009; Government of New Brunswick, 2012, 2009). From this perspective, food security is defined minimally as regular access to quality healthy foods (safe and of good nutritional quality) in adequate quantities for an active, healthy life. It is therefore one of the main determinants of health (Power, 2005; Tarasuk, 2009). Its opposite, food insecurity, affects general physical and mental health, in addition to being associated with various forms of malnutrition (Kirkpatrick and Tarasuk, 2008), and a higher risk for diabetes, depression, and despair (Power, 2005; Tarasuk, 2009; Holben, 2010).

These two concepts of public health – food security and food insecurity – are described and nuanced in the following sections in order to define them more clearly. This will enable us then to take a brief look at the different forms of assistance put in place to reduce food insecurity and at other collective actions intended to contribute to food security, specifically community food security. An overview of the social justice considerations raised by food security and insecurity is then provided.

1.2.1. Food security

The concept of food security[5] is far from being unique and universal. Since its appearance in the 1970s, following the world food crisis of 1973-1974, it has changed a great deal and continues to change.[6] Many definitions have been proposed over the years, indicating a diversity of approaches and problems to be solved, as well as an evolution based initially on economic and quantitative considerations then gradually opening up to more qualitative and humanistic, environmental, and even ecological considerations (Montfort, 2009). Today, the concept of food security refers to a state according to which populations have access at all times, in dignity, to enough food for an active, healthy life (Radimer *et al.*, 1992).

The most commonly accepted definition is one that was formulated in 1996 (Food and Agriculture Organization of the United Nations (FAO), 1996) at the World Food Summit and officially reiterated with a minor modification in the 2009 Declaration of the World Summit on Food Security:

> Food security exists when all people, at all times, have physical, social and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (FAO, 2009).

There are several variations of this definition, all of which refer to the following four dimensions: the physical **availability** of food, including water and other beverages, that is safe and of good nutritional quality; economic, physical, and socially acceptable **access** to food; the **utilization** that is made of it; and **stability** over time or sustainability of the other three pillars. This definition is

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[5] See Appendix A for a definition of terms not to be confused with food security, such as food safety, food self-sufficiency, and food sovereignty. A definition of nutrition security is given in Appendix B, which shows the links between food security and nutrition.

[6] For a history and the evolution of the concept of food security and a number of related concepts, see for instance, Committee on World Food Security (2012) and Montfort (2009).

fairly complete and refers to the main aspects of diet and care and dietary practices that form the basis of good nutrition. It reflects the multi-dimensional aspect of food security and its qualitative and quantitative foundations.

Through its careful and general wording, this definition also implies a consensual component that reduces its accuracy (Montfort, 2009). For a concept as broad as food security, which has multiple forms, this inaccuracy is not without consequence: it may hide the nature of the problems encountered and cloud possible actions that could be taken on a priority basis to ensure food security (Racine, 2007; Power, 1999). It is important to be aware of this since the perception and definition of a problem largely determine the solutions adopted and their effectiveness or ineffectiveness in solving the problem. It is therefore essential to clarify each of the dimensions of food security, for each food insecurity situation that we are trying to address, taking into account its unique conjunctural and structural specificities. For a full analysis, many aspects must be considered, including food culture, sociopolitical and economic context, and citizen power over food (Comité de mobilisation politique québécois, 2007, cited by Racine, 2007).

The following definition, based on a definition adopted by the WHO in 2003, reflects current thinking on food security (Gouvernement du Québec, 2008, p. 14).

According to this definition, food security means that

1. every person has, at all times, the physical and economic means to access enough food for an active, healthy life;
2. every person's ability to acquire food is guaranteed;
3. access to simple, reliable, objective information for making informed choices is assured;
4. the food itself is nutritionally satisfactory and personally and culturally acceptable;
5. the food is obtained in a way that respects human dignity;
6. food consumption and production is based on social values that are fair, just, and moral;
7. foods are produced and distributed in a way that respects a sustainable agri-food system.

1.2.2. Food insecurity

Food insecurity exists when one or more of the components of food security are deficient, either temporarily or on a recurring basis. There is food insecurity when the availability of healthy and nutritionally adequate foods, or the ability to acquire foods that are personally satisfying through socially acceptable means, is limited or uncertain (Anderson, 1990; Radimer *et al*, 1992). Household food insecurity is therefore "the inability to acquire or consume adequate diet quality or sufficient quantity of food in socially acceptable ways, or the uncertainty that one will be able to do so" (Davis and Tarasuk, 1994). In affluent countries like Canada, where the food supply is very abundant overall, it is mainly a problem of access to food rather than its availability.

Food insecurity is a dynamic phenomenon, associated with the phenomenon of poverty, the impact of which varies depending on its duration and severity, and socio-economic and environmental conditions (natural, institutional, cultural). The degree of severity is reflected in the compromises made by vulnerable individuals or groups based on the available resources, when a crisis or other such situation forces them to sacrifice food quality and/or quantity. This reduction entails a progressive decrease in dietary intake from a quantitative and/or a qualitative standpoint (European Commission, 2009).

Food insecurity is associated with hunger and many forms of malnutrition (undernutrition or undernourishment, obesity, and nutritional deficiencies, primarily with respect to micronutrients). While food security is a long-term issue, food insecurity can have negative consequences quite

quickly, affecting health and nutritional status in particular. In the long term, food insecurity may also increase the risk for obesity and related disorders or diseases (high blood pressure, metabolic syndrome, type 2 diabetes, cardiovascular disease) (see section 3 –Obesity and food insecurity and social Inequalities in health). The at-risk categories from the standpoint of risk of malnutrition – through deficiency but also through excess – are children, women, the elderly, and people with one or more chronic illnesses. Hunger is now considered a phenomenon and a problem that are separate from food insecurity (Haering and Syed, 2009). That is why, in Canada and the United States, the categories used to describe household food security no longer refer explicitly to hunger (Health Canada, 2012; USDA 2008, cited by Haering and Syed, 2009)).

From a methodological standpoint, Health Canada uses a description of food security that pertains to the food security situation of households. In 2004, Health Canada adopted a description consisting of three categories: (i) *food security* (households having access at all times to food for an active life for all household members), (ii) *food insecurity moderate* (households with indications of compromise in quality and/or quantity of food consumed), and (iii) *food insecurity severe* (households with indications of reduced food intake and disrupted eating patterns) (Health Canada, 2012). In this last category, signs of hunger are present, generally among the adult household members. food insecurity is the most severe when hunger also affects the children.

In the United States, a system with four categories came into effect in 2008 (Table 1). It can be used to distinguish between households where food security is high and those where it is only marginal. This is an important distinction when monitoring the number of households at risk for food insecurity and makes it possible to take into account the fact that, in affluent countries, barriers to food security are sometimes hard to see but are nonetheless present and can quickly affect household and individual food security (Haering and Syed, 2009). Also, it helps when considering food insecurity prevention measures that could, for example, target at-risk households more effectively.

Table 1. Changes in the United States Department of Agriculture Food Security Language (USDA, 2008)

General Category	Detailed Category		
	Old Label	New Label	Description of Conditions in the Household
Food Security	Food Security	High Food Security	No reported indications of food access problems or limitations
		Marginal Food Security	One or two reported indications, typically of anxiety over food insufficiency or shortage of food in the house. Little or no indications of changes in diets or food intake.
Food Insecurity	Food Insecurity without Hunger	Low Food Security	Reports of reduced quality, variety or desirability of diet. Little or no indication of reduced food intake.
	Food Insecurity without Hunger	Very Low Food Security	Reports of multiple indications of Security disrupted eating patterns and reduced food intake.

Source: Haering and Syed (2009).

The knowledge available indicates the food insecurity has four core dimensions: (i) *consumption level*, i.e. number of meals per day, how much food is eaten, and with what regularity; (ii) *quality*, i.e. safety and nutritional value of foods and personal and subjective preferences; (iii) *sources*, i.e. main sources of food supply and the personal and cultural acceptability of these sources; and (iv) *cost dimension*, which is central for a full understanding of the components of food security and insecurity (Lee and Greif, 2008).

1.2.3. Food aid and the community food security model

Food aid or food assistance consists basically of a transfer between a donor entity and a beneficiary entity of foodstuffs or funds to be used to purchase food. Food aid is a rapid and specific response mechanism used, for example, in an emergency, a humanitarian crisis, or a disaster. Its purpose is to help support food security by addressing, in a timely and appropriate manner, problems arising from food shortages or deficits (FAO, 1990). Food aid therefore is designed to provide people with adequate food and attempts to re-establish food security for affected populations or groups in specific contexts.

Food stamp, money transfer, food-for-work programs and the services offered by certain charitable organizations (e.g. churches, food banks) are other examples of food aid or emergency food. Food aid (e.g. receiving a food package or box) and other forms of food support are not food security but can, in some circumstances and on an ad hoc basis, contribute to it (Hamelin and Bolduc, 2003).

It was when the government and the more traditional forms of aid (charities) starting finding it difficult to meet social needs that food banks and community kitchens made their appearance in Canada, in the early 1980s.[7] Even though food aid could be offered in connection with the support provided by religious organizations (such as "Popotes roulantes," which started in the 1950s in Quebec and in the 1960s elsewhere in the country, where it was called Meals on Wheels), these new forms of food aid quickly spread across Canada, helping to counter the effects of food insecurity.

A number of factors came together when these new forms of food aid were starting to be developed.

- The increase in consumer prices, which intensified in the late 1970s
- The economic recession of the early 1980s
- The growth of poverty in the early 1980s and then in the 1990s
- Federal and provincial social policy reforms in the 1990s, which exacerbated the precarious situation of the needy (Rice and Prince, 2000).

Food banks and soup kitchens, which were originally intended to be temporary, have actually been growing in number since they first appeared in the wake of the economic crisis of the 1980s (Riches, 2002). To give an idea of the development of food banks, the number of food banks in Canada increased from 1 (Edmonton) in 1981 to more than 800 in 2014.[8] An estimated 850,000 Canadians used food banks in 2015, and more than a third of them (35.8%) were children (Food Banks Canada, 2015).

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[7] The Canadian Community Kitchen Movement, http://old.bcics.org/node/154. Food Bank, http://www.thecanadianencyclopedia.ca/en/article/food-banks/.

[8] Food Banks Canada. Retrieved from http://www.foodbankscanada.ca/Learn-About-Hunger/Food-Banking-in-Canada.aspx?lang=en-CA

To the best of our knowledge, the first food banks in New Brunswick emerged in the early 1980s (1983 in Saint John, 1984 in Dorchester, 1985 in Woodstock, 1985 and 1986 in Moncton[9]), while collective kitchens appeared and started to spread in the late 1970s. Food needs increased at that time, and new forms of food aid were put in place to supplement the aid provided by religious groups (Davis and Tarasuk, 1994). One of our local informant explained that the food bank where he works was set up "to help the churches in the area who were being overwhelmed with people needing assistance getting food".

At the same time, actions for improving the scope, sustainability, acceptability, effectiveness, and quality of food aid or local food systems were multiplying. These included various community-based initiatives designed to promote community food security, such as collective kitchens, community gardens, and farmers markets (Hamelin, Mercier & Bédard, 2011; Scharf, Levkoe & Saul, 2010; Cohlmeyer *et al.*, 2012; Webb *et al.*, 2012; Alaimo *et al.*, 2008; Engler-Stringer and Berenbaum, 2005; Blouin *et al.*, 2009; Tranchant *et al.*, 2009).

Two objectives, combined to varying degrees, guide these approaches: poverty reduction and the development of sustainable food systems. These approaches include efforts striving to transform the food system. A food system is "a set of interrelated functions that includes food production, processing, and distribution; food access and utilization by individuals, communities, and populations; and food recycling, composting, and disposal" (McCullum *et al.*, 2005).

Such an approach that is gaining in popularity in the fight against food insecurity is community food security. Commonly used in Canada and the United States, this approach is related to individual and household food security, but the analysis and the policy and practical implications differ. An analysis of individual and household insecurity leads to considerations related to social policy, while, as we will see, the analysis of community food security leads to considerations related to food policy (Dietitians of Canada, 2005a; Barre *et al.*, 2011).

Community food centres (CFCs) are part of this community development approach designed to reduce poverty and strengthen local food networks.

These community responses to community needs are in line with the expectations of public administrations that, to address the increase in food insecurity and poverty, all rely first and foremost, as we have seen, on civil society (Food Banks Canada, 2012; Riches, 2002; Government of Canada, 1998; Koc *et al.*, 2008). The government response is then aimed at mitigating the effects of poverty by strengthening the capacities of communities and local organizations, which must turn more to private donations from individuals and businesses in the community and from local or regional charitable organizations.

The evolution of food security approaches and practices reflects a better analysis and understanding of food security and food insecurity. Recognizing the growing complexity of this problem, the approaches that have been developed over the past two decades have in common the fact that they have adopted a more global approach in order to better take into account the social, economic and ecological factors of food security. Indeed, food insecurity raises a series of complicated problems requiring a series of complementary solutions for providing regular access to quality foods (Hamelin *et al.*, 2011).

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[9] The Moncton Food Bank in 1985 (source: Food Dépôt Alimentaire Inc., Ray Gould, Executive Director; personal communication in February 2014) and the Mapleton Food Bank in 1986 (source: Moncton Headstart. Retrieved November 3, 2013 from http://monctonheadstart.com/index.php?option=com_content&view=category&layout=blog&id=1&Itemid=2&lang=en,

1.2.4. A matter of social justice

Although these organizations are increasing in number, some authors have nonetheless noted that food banks, soup kitchens, and other community food security initiatives are able to only partly meet the needs of one food-insecure person in five (Chen and Che, 2001). Food insecurity is persistent as well because most of the populations affected do not use food aid for reasons of accessibility, lack of information, social and cultural acceptability, or health problems (Hamelin *et al.*, 2011). Although necessary in the short term, local food aid is often not enough to achieve long-term food security for everyone (Government of Canada, 1998; New Brunswick Common Front for Social Justice, 2010b). Also, the various community initiatives like collective kitchens, community gardens, and farmers' markets often have a very low impact on the food security of populations (Hamelin *et al.*, 2011).

Year after year, HungerCount data show that low income is the main reason people living in Canada are turning to food banks (Food Banks Canada, 2015). Food insecurity now seems to affect low-income families more than it did in early 1980s when food banks first started to appear (Husbands, 1999). Also, persistent socio-economic inequalities are increasing vulnerability to food insecurity (Holben, 2010; Rose, 1999). Particularly at risk are low-income individuals from disadvantaged populations, such as those on social assistance or employment insurance, single mothers and their children, single people, Native people and Inuit, immigrants, and other minorities (McIntyre and Rondeau, 2009; Tarasuk and Vogt, 2009; Statistics Canada, 2008; Health Canada, 2007).

Some are therefore demanding political interventions targeting greater social justice and a reduction in income inequalities, such as through the implementation of adequate levels of social assistance to reach food security (Power, 2005; Tarasuk and Vogt, 2009; Riches, 2002; Government of Canada, 1998; New Brunswick Common Front for Social Justice, 2010b). This is actually a question of basic socio-economic rights, which include the right to food for all (Racine, 2007; Riches, 1999). Similarly, some authors advance the notions of "food democracy"[10] (Riches, 2002; Lang, 1999; Welsh and MacRae, 1998; Delisle and Hamelin, 1997), or "citizen food power" (Comité de mobilisation politique québécois, 2007).

The analysis of individual or household food insecurity positions the problem in the political context of socio-economic disparities that result from social policies affecting income distribution and having an impact on household income levels and population health. Social justice is seen as a solution to both of these problems. The national association Dietitians of Canada recognizes food security as a social justice problem and recommends a population health approach, that is, an approach that seeks to reduce health inequities through the pursuit of social justice (Dietitians of Canada, 2005a, 2005b). The anti-poverty approach to food security, which draws on social justice, is based on the hypothesis that food insecurity arises primarily from the economic inaccessibility of the food available on the market and a lack of knowledge about nutrition.

However, Food insecurity is related not only to low income but, more globally, to reduced or precarious livelihoods – income being just one aspect of livelihood, which also includes human and social capital. To fight against food insecurity, it is therefore important to act not only on income, but also on all aspects of livelihoods. A number of strategies for fighting against food insecurity internationally are based on the sustainable livelihoods approach and conceptual

[10] For Lang (1999, p. 218), food democracy refers to the demand for greater access to the food system and collective benefit from the food system. He says that support for this approach continues to bubble in most parts of the globe, even in rich areas. They too are socially divided. "Ultimately, food is both a symptom and a symbol of how we organize ourselves and our societies. It is both a vignette and a microcosm of wider social realities."

framework (SLA) (see Appendix C). Under this approach, livelihoods are represented by five categories of capital – human, natural, social (political, religious, cultural), financial, and physical or material – that populations can draw from to achieve positive outcomes such as increased income and well-being and improved food security. The SLA approach is based on a socio-ecological model and appeared in the late 1980s in response to disenchantment with results deemed insufficient in terms of development. It was informed by Sen's work (1985, 1989) on human rights and capabilities, as well as the work of Chambers and Conway (1992, on rural livelihoods. It reflects a better understanding of food insecurity and poverty, that is, these problems are not related only to income but also have significant social, political, cultural, and environmental dimensions that must be taken into account.

1.3. EXTENT OF THE PROBLEM IN CANADA AND NEW BRUNSWICK

The income inequalities underlying poverty are increasing in Canada (Heisz and Murphy, 2014), and food costs have increased by nearly a third (32.0%) over the past decade (Statistics Canada, 2016), which represents a higher increase than the inflation rate since 2007 (Rollin, 2013).Food bank and soup kitchen use reportedly increased by nearly a third (30.6%) after the recession of 2008-2009. (Food Banks Canada, 2012). In just a few years, the number of users went from 675,000 in 2008, or before the economic recession, to more than 882,000 in 2012. The number of food bank users dropped slightly, to reach 850,000, in 2014, although this still represents an increase of 26% since 2008 (Food Banks Canada, 2015).

Food insecurity was growing and affected nearly 13% of Canadian households in 2012, compared with 11.3% of households in 2008 (Tarasuk *et al.*, 2013). Not all provinces and territories measured food insecurity in 2013, but in the jurisdictions that did measure it, it was found that food insecurity remained high and affected about 12.5% of households (Tarasuk *et al.*, 2015).

Rates in the Maritimes are higher than the Canadian average to the point of being considered alarming by these authors, who report rates of 16% in New Brunswick, 16.7% in Prince Edward Island, and 18.5% in Nova Scotia in 2013 (Tarasuk *et al.*, 2015). With respect to food insecurity, New Brunswick therefore ranks near the bottom for the Canadian provinces. In 2013, the lowest food insecurity rates were in Alberta and Quebec (11.3% and 11.8%, respectively) (Tarasuk *et al.*, 2015). In 2012, the lowest rates were in Alberta and Ontario (11.5% and 11.7%, respectively) (Tarasuk *et al.*, 2013).

Also according to the data in the Canadian Community Health Survey (CCHS), household food insecurity in New Brunswick increased in 2004, 2007, and 2011 (9.2%, 13.8%, and 16.5% of households),decreased slightly in 2012 (15.6%), but increased again in 2013 (16.0%) (Tarasuk *et al.*, 2015). The rate of severe food insecurity (4.0% of New Brunswick households in 2013 and 2.8% in 2012) remains above the national rate (2.7% in 2013 and 2.6% in 2012).

The rate of food insecurity in households with children of New Brunswick decreased significantly between 2011 in 2012 (24.5% to 19.6%), but was still above the national average (16.5% in 2012) (Tarasuk *et al.*, 2013). Of the 33 major census metropolitan areas examined, Moncton had the second highest food insecurity rate (17.8%) in the country, after Halifax (19.9%) in 2011-2012 (Tarasuk *et al.*, 2013). The city of Saint John is not far behind, with a rate of 14.4%.

New Brunswick had almost 20,000 in 2013 food bank users, representing an increase of over a quarter (27.8%), which is in line with the upward trend in Canada compared to 2008 (Food Banks Canada, 2014, p. 6).

After declining between 2005 and 2008, the number of people using food banks in New Brunswick has increased between 2008 and 2013, going from 15.638 to 19.989 people (Food Banks Canada, 2014). The number of food bank users did decrease slightly to 19.590 in 2014 and to 18.986 in 2015 (Food Banks Canada, 2014, 2015). However, this still represents an increase of 21.4% since 2008 (Food Banks Canada, 2015).

While children under the age of 18 account for less than 20% of the population of New Brunswick (Statistics Canada, 2012), they account for 33.9% of those who made use of food bank services (Food Banks Canada, 2014).

In the broader picture of the incidence of poverty, data on the prevalence of food insecurity in New Brunswick should be seen in relation to the average weekly earnings ($869/week in December 2015) and the unemployment rate (9.8% in 2015), which are among the lowest and highest, respectively, compared with the other provinces and territories, and also lower and higher than the national average ($959/week and 6.9%) (Statistics Canada, 2016a and 2016b). In fact, earnings in the province are about 20% below the national average (Government of New Brunswick, 2012).

A household's source of income is also closely related to food insecurity. In New Brunswick, in 2012, two-thirds (66.7%) of households receiving social assistance were food insecure. Households reliant on wages and salaries were not exempt: they actually accounted for nearly two-thirds (65.3% et 61.4%) of food insecure households in 2012 and in 2013, respectively (Tarasuk *et al.*, 2013, 2015).

According to the latest HungerCount (Food Banks Canada, 2015), people who made the use of food banks in the province were social assistance recipients, followed by the working poor, and people living on a pension or receiving disability-related income support. It is important to note that "The most generous provincial disability benefit for an individual is still more than 10% below the lowest poverty line. In the worst case (New Brunswick), it is nearly 50% below the poverty line." For this segment of the population, which is among the most vulnerable, it is hard to imagine how achieving food security is possible.

Moreover, the HungerCount 2014 reports that New Brunswick has the highest gap between the provincial social assistance benefit and the basic cost of living among all Canadian provinces. For example, for a couple with two children, that benefit is 37% lower than the income deemed necessary to achieve a modest basic standard of living in Moncton (Food Banks Canada, 2014).

Rise in food prices

The price of food is another factor that contributes tofood insecurity. A report by The Food Institute of Guelph University shows a rise in food prices over the past decade (Charlebois *et al.*, 2015). The cost of food has indeed increased by nearly a third (32.0%) during the last decade in Canada (Statistics Canada, 2016). The increase was even more important in the Maritime Provinces, notably in New Brunswick (37.7%)

Starting in 2007, the increase in food prices has been higher than the inflation rate in Canada (Rollin, 2013). In New Brunswick, the cost of food has actually been more than twice (34.0%) the inflation rate (14.8%) since 2006 (Statistics Canada, 2016).

The inflation rate of food was particularly high in Canada in 2008 (3.5%), 2009 (4.9), 2011 (3.7%), and 2015 (4.1%) (Statistics Canada, 2016; Charlebois *et al.*, 2015). In 2015 alone, vegetables and fruits had the highest increase (10.1%), followed by nuts (9.1%), meat (5%), breads and cereals (2.9%), fish and seafood (2.4%), and dairy products and eggs (1.5%) (Charlebois *et al.*, 2015).An increase of 2%

to 4% is expected in 2016. The biggest increases are expected for meat and fruits and nuts (between 2.5% and 4.5% in both cases), and for vegetables (2% to 4%). For fish and seafood, a rise of 1% to 3% is expected. The price of breads and cereals and the price of dairy products and eggs could remain stable or increase by 2% (Charlebois *et al.*, 2015)

In New Brunswick, the increase in food cost particularly exceeded inflation during seven of the last ten years (Statistics Canada, 2016). The rates have been very high notably in 2008 (3.8%), 2009 (5.4%), 2011 (4.6%), and 2015 (4.8%). Two studies, conducted in 2011 and 2012 by the New Brunswick Common Front for Social Justice, documented the increase in food prices (NBCFSJ, 2011, 2012). The NBCFSJ expected that this rise in food prices would put additional pressure on low-income families, which might be reflected in food bank use (NBCFSJ, 2012). Food bank utilization rates in the province have indeed increased over the past few years (Food Banks Canada, 2015).

Single people are reportedly more affected by the high cost of food (Milway *et al.*, 2010). Several studies done in Canada have documented the challenges low-income families face in consuming a nutritious diet. Three challenges identified by Milway *et al.* (2010) are as follows: these households cannot afford a healthy diet; as a result, they do not consume a healthy diet; and they have greater difficulty accessing a healthy diet. In low-income households, including food-insecure households, the percentage of income spent on food, housing, and clothing is higher than the average (Cousineau, 2008).

1.4. STATE OF THE QUESTION

1.4.1. Government and community approaches and practices

The problems of food insecurity and food security are the focus of a number of initiatives being carried out by stakeholders in civil society, government, and individuals. In fact, civil society, government, and families or individuals all have a responsibility to increase food security.

Five main categories of responses to food insecurity can be identified:[11]

1) Food banks and their groups: private donations, in-kind most often, from individuals and private businesses, including agri-food industrials and agricultural producers; organizations involved in the centralization and redistribution of donations/food, advocacy organizations, etc. (e.g. Food Depot Alimentaire Inc., New Brunswick Association of Food Banks, Food Banks Canada);
2) Traditional aid (traditional because these are the oldest forms of food aid, predating the spread of food banks): emergency food, food stamps or vouchers, soup kitchens, Christmas hampers);
3) Alternative practices (alternatives to the traditional forms of food aid in categories 1 and 2): e.g. collective kitchens, buying groups or clubs, food co-ops, community grocery stores, social grocery stores, collective gardens, community gardens, food gleaning, food recycling (reducing food waste), soup kitchens, local food networks, community food centres (CFCs);
4) Government support: indirect support for beneficiaries through the work of a number of health and social services professionals (e.g. dietitians, nutritionists) and through social assistance programs; indirect support through the creation of or support for networks or communities of action (e.g. New Brunswick Food Security Action Network (NBFSAN), community inclusion networks (CINs); direct support to beneficiaries through government-subsidized programs (e.g. food vouchers, food programs including those offered in schools

[11] These are based on the classification used by Racine (2007).

and to certain low-income groups. For an overview of federal policy responses to food insecurity, see Dietitians of Canada (2005a, 2005b);

5) Local, regional, provincial, and national cooperation: cooperation is one way of involving all **food system stakeholders**, including the agri-food industry and individuals, other than through donations to initiatives in categories 1 and 2 above. Some initiatives in categories 3 and 4 may contribute to cooperation (e.g. community food centres, New Brunswick Food Security Action Network).

The broad categories of stakeholders involved in this response to food insecurity are shown in Campbell's conceptual model (1991), reproduced below (Figure 1). The private, public, and informal sectors influence household food security by having an impact on household resources and by mobilizing these resources in order to obtain and conserve food. They influence it through direct aid services, the offer of employment, and education and information. Getting food depends mainly on food availability and accessibility, its cost, the existence of buying assistance programs and alternate food sources. Food acquisition may be a source of anxiety, dietary restrictions, and nutritional deficiencies affecting health and wellness.

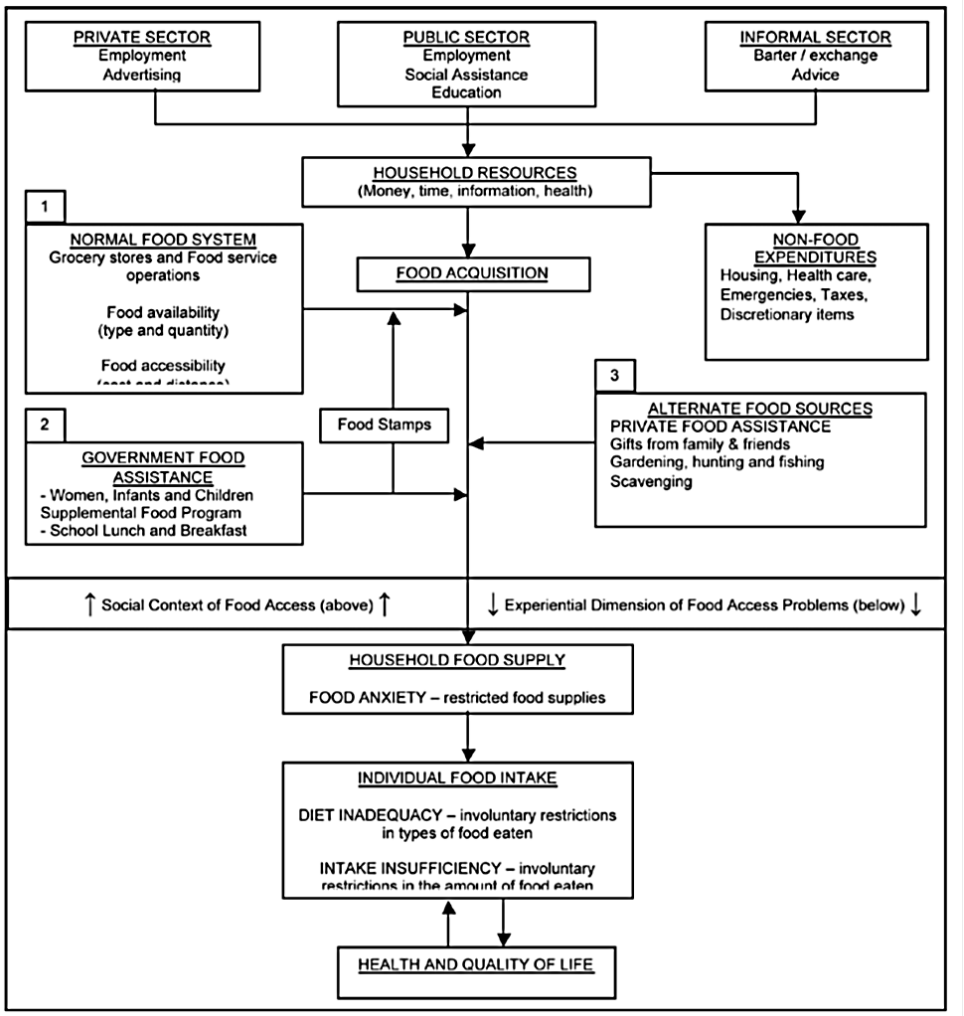

Figure 1. Conceptual Framework of Food Insecurity and its Risk Factors, according to Campbell (1991)

For all of the responses given, food aid is not the only form of aid offered: the organizations involved often offer other non-food services.

Responses 1 and 2, and certain responses in category 4, are individual forms of aid. In comparison, responses 3 and 5, and certain responses in category 4, have a broad collective dimension. From this collective dimension, one of the aims of which is to break the isolation of beneficiaries and develop their social support networks, initiatives with a community dimension and scope have emerged. This community dimension involves approaches based on (i.e. targeting) community development. See section 1.2.3 for more on community food security approaches, also known collectively as community food security.

This typology of responses to food insecurity brings to light the diversity of practices. It also points to a few trends in the fight against food insecurity in the industrialized countries, particularly in North America, that can be observed in New Brunswick.

We note a twofold evolution in the type of responses to food insecurity, which can be seen in New Brunswick, as well, and contributes to expanding the range of responses to food insecurity, although without making it possible to reabsorb this phenomenon (cf. Annual HungerCount, Food Banks Canada). First, in addition to the traditional forms of food aid, which are more *individual (even individualistic*, Power, 1999) *and charitable in nature*, are forms of aid with a broader *collective dimension*, as well as forms of food aid or action rooted in *community development*.

The second type of evolution that has taken place is superimposed on the first: from forms of aid designed to fight against food insecurity and poverty, there has been a shift to forms of aid – or rather forms of action (because this action is not necessarily aid for those most affected by food insecurity) – aimed at ensuring food security. The nuance between the two (*fighting against food insecurity* versus *ensuring food security*) is important because the two approaches do not address the same priorities or benefit those most affected by food insecurity to the same degree. However, these two forms of action are complementary. The fight against food insecurity generally originates in the fight against poverty and has social justice considerations. Achieving food security originates in more global considerations, such as sustainability, with social, ecological, and economic considerations, generally rooted in a community development perspective, and therefore more distant from the immediate needs of people directly affected by food insecurity.

<u>Community-based food security initiatives (or community food security)</u>
In the literature, community-based food security initiatives have different names, depending on the source, such as community action for food security, community food action, and community development food projects. They also go by the generic term “community food security”. These initiatives are often more geared towards the achievement of food security rather than the fight against food insecurity or poverty, even though they do not exclude this fight.

The community food security approach is generating great excitement at the moment, as it has done for the past 20 years (cf. results of this study and other studies, e.g. Haering and Syed, 2009; Koc *et al.*, 1999; Delisle and Hamelin, 1997; Rouffignant *et al.*, 1996). There are several reasons for this (see, for example, Power, 1999; Dietitians of Canada, 2007). One of these is that this approach takes aim at several problems that are still relevant today (other than food insecurity) – e.g. community development, health promotion, economic development, sustainable development – and that people are trying to solve by getting everyone involved (consequence of government disengagement). At the political level, community engagement is a recurring theme in the programs of neoconservative governments that, in addition to advocating the deregulation and

rationalization of the public sector, are off-loading many of the functions of the welfare state onto communities (Power, 1999).

However, the implementation of community food security, specifically cooperation-based initiatives (local, regional, provincial, national cooperation), is fraught with difficulties, and the effectiveness of community action in reducing poverty remains to be seen in many cases in general, and in New Brunswick in particular.

Efforts to transform a charitable approach into a more community-based one are reported by studies in Canada, including one on food banks in Francophone communities in Ottawa (Anawati, 2006, 2007) and by many studies on community organizations in Quebec (e.g. Molina, 2008; Delisle and Hamelin, 1997; Rouffignant *et al.*, 1996). The relatively recent development of community food centres (CFCs) in Canada appears to be drawing on this transformation. CFCs seek to promote the development of a healthy, fair food system.[12] Through their operations, they therefore try to promote social ties; citizen participation; empowerment; partnership; the sharing of local knowledge, resources, and expertise; and development of local capacities in order to have as much impact as possible. A number of these elements are the focal point of responses centred on community development (Institut national de santé publique, 2002).

From an food insecurity prevention and reduction perspective, a recurring question is this: How can we take advantage of the above-mentioned forms of action to reduce the prevalence of poverty sustainably and effectively?

1.4.2. Links with the linguistic composition of populations

To the best of our knowledge, no analysis of the mother tongue of food-insecure people in New Brunswick has ever been done, and very few studies have been done on that issue in Canada[13].

According to a national study based on the results of the 2007 and 2008 Canadian Community Health Survey (CCHS), food insecurity had a significantly greater impact on elderly Francophones, living in rural areas, and with post-secondary training. According to this study, in comparison with Anglophones, significantly more Francophones were living in rural areas and had less than a high school education (Dabone *et al.*, 2013).

A recent Statistics Canada study on the situation of official language minorities in the labour market noted the following:

In the Atlantic Provinces, where the unemployment rate for all language groups combined is higher than in the other Canadian provinces, the unemployment rate for Francophones (13%) is slightly higher than that for Anglophones (11.2%). This difference can largely be attributed to the situation in New Brunswick, where the unemployment rate of the Francophone minority is 13.7%, while that of Anglophones is 10.6%.

In New Brunswick, the employment rate of Francophones is 50.4%, compared with 55.6% for Anglophones. In comparison, the national employment rate is 60.8% for all language groups combined.

However, there are differences between the language groups for the 45-to-64 age group, with Francophones posting an unemployment rate of 14.4% compared with 8.2% for Anglophones.

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[12] Community Food Centres Canada. Retrieved from http://cfccanada.ca

[13] Include the already cited works of Anawati (2006 and 2007).

There is a large gap in the employment rate for the 45-to-64 age group: 55.4% of Francophones are employed, a smaller percentage than among Anglophones (67.1%) (Lepage, 2012).

1.5. RESEARCH OBJECTIVES AND SUB-OBJECTIVES

This study focuses on two aspects of food security: the socio-economic and dietary contexts of New Brunswick communities and the approaches preferred by community initiatives promoting food security. In addition, it pays special attention to the relationships between the linguistic composition of the populations studied and their community food security. The three general research objectives are to (i) paint a picture of the community food security situation according to the different socio-economic and dietary contexts of New Brunswick communities, (ii) describe and evaluate the approaches of community initiatives promoting food security in New Brunswick communities, and (iii) identify steps to be taken with respect to community food security in New Brunswick.

1.5.1. A portrait of food security in New Brunswick

The socio-economic environments in which populations live influence their food security mainly because of inter-regional and local income disparities and varying access to enough healthy and nutritious food (Bartfeld and Wang, 2006; Barre *et al.*, 2011; Carter *et al.*, 2012; Latham and Moffat, 2007). Since New Brunswick is a province with a large rural population, it would be wise to determine whether lower incomes and higher unemployment and income transfer rates in the rural areas of the Atlantic region (Osberg, 2008) influence the food security of this population. One study suggests that there is more food insecurity among people living in small communities in the Atlantic Provinces where there is less access to food aid programs than in large communities in this region (McIntyre *et al.*, 2002). The data available at the time of this study did not permit such an analysis to be done but they did permit comparative analyses of urban and rural communities. In New Brunswick, two-thirds of the food banks that completed the HungerCount survey in 2014 were located in rural areas, as opposed to about one-third at the national level (Food Banks Canada, 2014). The development of community initiatives promoting food security is particularly challenging in rural areas (Cohlmeyer *et al.*, 2012). For example, it can be more difficult to fund food banks given the limited access to charitable organizations that are more present in cities. In some socio-economic environments, there is less access to sources of a variety of healthy, affordable foods of good quality, such as supermarkets, and a greater concentration of convenience stores, fast-food restaurants, and other sources of foods less supportive of a healthy diet (Raine, 2005). We are interested as well in the possible effects of the linguistic composition – Francophone, bilingual, and Anglophone – of the various populations in the province on food security in New Brunswick. Since minority low-income individuals[14] are more at risk, there is reason to check whether this is the case for the French-language minority, especially since there are persistent employment income disparities between Francophones and Anglophones in the province (Béland *et al.*, 2010; Lepage, 2012). The distribution of the Francophone population in areas that are more rural and more distant from urban centres (Gilbert *et al.*, 2009) is likely to have an indirect effect on their food security. Also, the social engagement and vitality of civil society may vary by linguistic group, such that food banks may be present to varying degrees.

The following primary objective and sub-objectives will therefore help in describing the key aspects of the province's urban and rural and dietary contexts with a view to analyzing the overall food security situation in New Brunswick, taking language into account.

[14] The data available do not permit an analysis of food security for other minorities in the province.

Objective 1. Paint a picture of food security based on the urban or rural, community, and dietary contexts of New Brunswick communities.

1.1 Describe urban and rural disparities and their links to food insecurity.
1.2 Describe access to community initiatives promoting food security.
1.3. Describe access to food sources supportive of healthy eating.

1.5.2. Community approaches to food security and insecurity

The approaches preferred by community initiatives in response to poverty and food insecurity entail a variety of practices. These approaches seem to go hand in hand with differences in the quantity and quality of foods distributed or served (Webb *et al.*, 2012) by food aid organizations in New Brunswick (New Brunswick Common Front for Social Justice, 2010b).The nutritional quality of foods distributed and served is also not always well documented (Hoisington *et al.*, 2011). However, it is known that the use of food banks and soup kitchens in the province has increased by a quarter (27.8%) between 2008 and 2013 (Food Banks Canada, 2014). This increase in needs puts downward pressure on the quantity and quality of the food aid available (Food Banks Canada, 2012). It is therefore worthwhile to evaluate the different strategies used by organizations and their impact on the quantity and nutritional quality of foods (Webb *et al.*, 2012), such as during times when organizations may be short of foodstuffs or unprocessed fresh food like fruits and vegetables.

This study will look at three categories of practices: funding, food supply, and food utilization. Food aid funding refers to the various ways in which funding is requested from governments, charitable foundations, and religious organizations, as well as practices for collecting individual and corporate donations of money and services. Food supply practices concern individual or corporate donations, as well as food purchases, and food utilization consists of practices for the transportation, storage, handling, processing, and distribution of food and meals by food banks and soup kitchens. We will pay special attention to the analysis of the nutritional quality and safety of foods in order to determine how these different food funding, supply, and utilization approaches and practices have an impact on the quantity and quality of the foods distributed and served.

The inherent food qualities being sought are nutritional quality and safety. These highly variable characteristics are associated with other variables and factors. Nutritional quality refers to the composition of foods (their nutrient content) and their ability to meet, without exceeding, the nutritional requirements (nutrient requirements and energy needs) of individuals. Foods of good nutritional quality are also called “healthy foods,” “healthy and nutritionally adequate foods,” or “nutritious foods.”[15] These foods are a good or an excellent source of important nutrients, while being low in fat, sugar, and salt. They are highly nutritious in terms of the energy they provide; in other words, they have a high nutrient density. In this report, the terms “foods of good nutritional quality” and “nutritious foods” are used synonymously. However, we prefer the first term to the second. Indeed, since all foods have nutritional value, they are all nutritious to varying degrees. However, not all foods are of good nutritional quality.

Food safety is a distinct quality indicating that a food does not pose a known health risk. It refers to the status of a healthy food (i.e. good for the health) that is produced, handled, and processed safely and under adequate hygienic conditions. Food safety necessarily results from appropriate

[15] For more details about the definition of the term “healthy food” in Canada, see Government of Canada (2009a, 2009b); Government of New Brunswick, Department of Education (2008b).

measures, implemented throughout the food chain to prevent various types of contamination that can pose a health risk.

We also explored the issues of social engagement with respect to poverty and food insecurity management, while taking into account the language variable, in order to determine whether the different approaches are taken by organizations that are mainly Francophone, bilingual, or Anglophone.

The second research objective and the resulting sub-objectives will enable us to achieve the anticipated outcomes:

Objective 2. Describe and evaluate the approaches taken by community initiatives promoting food security in New Brunswick communities.

2.1. Describe the impact of existing approaches on access to healthy food, nutritional knowledge and skills, and the ability of communities to act on food security.
2.2. Compare existing approaches and practices with respect to the availability, supply, accessibility, and utilization of sufficient, healthy, nutritious foods.
2.3. Determine whether the different community food security approaches vary according to the linguistic composition of organizations or communities in New Brunswick.

1.5.3. Public food security policies

The public policy shift towards a collaborative community model in New Brunswick is similar to the community food security model, although it must be said that the objectives directly related to food security are somewhat diluted in a preventive health vision based on the promotion of healthy lifestyles. Adopting a healthy lifestyle is in fact the dominant determinant of health in conditions of general prosperity (Ross & Mirowsky, 2010). Unfortunately, this positive relationship between healthy lifestyle and health is ineffective in addressing the stressful and harmful effects on health of the economic difficulties experienced by the disadvantaged (Ross & Mirowsky, 2010). This constitutes a significant limitation, for the entire population, on the effectiveness of public health policies based on the promotion of healthy lifestyles and habits, particularly when it comes to food security.

While initiatives aimed at achieving food security, particularly community-based initiatives (Community food security), have their advantages, they have their disadvantages as well. First, they put less priority on the eradication of poverty, even though this intention is often present. Indeed, the effectiveness of these initiatives in reducing poverty and food insecurity seems relatively low, when it is evaluated, because direct evaluations are rare. Second, putting too much emphasis on food security contributes to hiding poverty and its structural causes from public discourse and debate. According to several researchers in Canada, this is a disturbing shift – a shift in priorities – that could move poverty reduction actions and priorities (improvement of all livelihoods that constitute non-food means for fighting against food insecurity) to the back burner, even though these actions are the main response to food insecurity, and as such, should be on the front burner (McIntyre, 2011, 2003; Racine, 2007; power, 1999).[16]

The concern is twofold: first, the fight against poverty, and specifically the government's duty to promote a better distribution of collective wealth, is relegated to the background of political action priorities, and second, the public is not aware enough to exert the civic political pressure

[16] For a critical analysis of community-based responses to food insecurity, see Tarasuk (2001).

that is required. This concern is all the more relevant in a context of budget restrictions and globalization that has a considerable impact on the current evolution of poverty in Canada, in general, and in New Brunswick, in particular: by working on too many fronts at one time (Food insecurity, food security, community food security, poverty, wellness), with limited resources, we run the risk of spreading our efforts too thinly and achieving none, or very few, of the goals that have been set.

> A gradual effacement of the concepts of hunger and poverty and their replacement with the notion of food security also runs the risk of normalizing the phenomenon (…). The arrival of the concept of food security could reinforce this normalization and result in energies being directed elsewhere than on the shameful fact that poverty exists here at home (Racine, 2007, p. 42).

For these reasons, several researchers (e.g. Racine, 2007; Power, 1999) have issued a warning against increasing initiatives centred on food security and community food security. In other words, to be useful, such initiatives *should not replace* or overshadow initiatives promoting *the right to a decent income or other livelihood* (by means of an adequate minimum wage or social assistance benefits), which right must be brought to the foreground because eradicating food insecurity requires structural anti-poverty actions (e.g. McIntyre, 2011, 2003). The challenge is therefore to combine the two forms of actions as effectively as possible so they contribute to the reduction of poverty and social injustices.

To address this concern, Canadian researchers (Hamelin and Bolduc, 2003) have proposed the following fundamental actions:

- Use food security as an indicator of social development;
- Evaluate the impact of projects and initiatives concerning individual food security and social development;
- Distinguish between “food support” and “food security” actions, and review the distribution of government funding between the two; the first type can be considered as poultices that are useful, admittedly, but largely inadequate in the medium term for promoting individual autonomy, i.e. true food security.

In a three-tiered continuum of community food security (Figure D1, (Appendix D), McCullum *et al.*, 2005, cited by Dietitians of Canada, 2007; Kalina, 2001), the development and implementation of policies to correct structural problems that cause food insecurity are part of the actions in stage 3. This is the most advanced stage of food security. In stages 1 and 2, the actions are, respectively, assistance (relief of the symptoms of food insecurity) and individual and collective capacity building. It is the progression along this continuum that measures progress in terms of food security.

Since globalization contributes considerably to both wealth creation and poverty, an analysis of poverty *in the context of globalization* is one of the research priorities that may help in reducing food insecurity in Canada and elsewhere.

The last objective will be helpful in formulating recommendations concerning best practices, promising practices, and new relevant prospects for possible government measures aimed at improving food security in New Brunswick.

Objective 3. Identify measures to be taken with respect to Food Security in New Brunswick.

2. METHODOLOGY

Our interdisciplinary study brings together a team of researchers whose areas of expertise are complementary in that they cover the community, socio-economic, nutritional, and demographic aspects of community health in relation to food security. The methodology developed for our study therefore reflects this variety of expertise. It is a mixed methodology that combines qualitative and quantitative research methods and is based on a combination of several forms of data collection and complementary analyses in order to paint a picture of the situation that is as complete as possible.

We conducted a documentary search, a literature review, and an inventory of food aid and food security organizations (170) and food outlets (408) in the province, followed by an online survey (100 respondents) and focus groups (4 groups, 21 participants in all) with the heads of community organizations and initiatives involved in food security. These were complemented by visits to food aid organizations (13) and an analysis of a list of foods received by one food bank in order to evaluate the food aid's nutritional quality and safety.

This section provides a brief description of the various types of data collection and analysis methods used. We present a justification for the method, the population studied, and the sampling, if any, the data collection tools, the collection method, and the data processing. One section provides methodological details concerning the evaluation of the nutritional quality and safety of food aid.

2.1. LITERATURE REVIEW AND DOCUMENTARY SEARCH

A review of knowledge concerning several aspects of food security was carried out, e.g. public policies and programs related to this problem in New Brunswick.

The documentary search was done in French and in English using keywords related to the themes considered in various databases. We found additional information sources by analyzing bibliographical references in the documents reviewed or by speaking with stakeholders involved in food security and the fight against food insecurity in New Brunswick.

For the theme of nutritional quality and safety of food aid, the literature reviewed included studies on food aid quality, needs at different levels, common concerns, and existing recommendations, whether in New Brunswick, in other provinces, or in other industrialized countries sharing food insecurity similarities with Canada. The literature review made it possible to identify central themes relevant to the objectives of the study and of interest to the province, specifically to policy makers and other stakeholders in a number of sectors (e.g. agriculture, nutrition, public health, education).

2.2. INVENTORIES OF FOOD SECURITY ORGANIZATIONS AND FOOD OUTLETS

We began our data collection process by preparing a provincial inventory of 170 community food security organizations, initiatives, and measures. That inventory made it possible to paint an overall picture of the current situation in New Brunswick and served as a foundation for the data collection process to ensure the collection of data on the most recent community measures and initiatives, such as community gardens, community food mentors, and community kitchens.

Our community and research partners collaborated on this inventory and in other areas. These include the New Brunswick Association of Food Banks (NBAFB) and the New Brunswick Food Security Action Network (NBFSAN). The New Brunswick Association of Food Banks is a non-profit charitable organization made up of 59 member food banks and soup kitchens, organized into five geographical districts for food distribution and representation purposes. The mandate of the New

Brunswick Food Security Action Network is to facilitate networking among organizations and individuals involved in promotion, research, education, and community engagement with respect to food security across the province. It has 150 members representing a number of communities, departments, teaching institutions, and non-profit organizations.

The summary inventory of 408 food outlets was done on the basis of their public contact information available online. The results, which are not exhaustive, are presented in section 3.2 of this report. We then used the inventory to identify food outlets supportive of healthy eating, such as supermarkets, grocery stores, fruit and vegetable retailers (Robitaille and Bergeron, 2013). Convenience stores and other food outlets not supportive of healthy eating were excluded from the analyses. Corner stores are rarely supportive of healthy eating. Restaurants were not included given the difficulty in identifying which one are sources of foods supportive of a healthy diet. Last of all, we identified financially accessible food outlets that we defined, for lack of a better word, as supermarkets for analysis purposes. According to Robitaille and Bergeron (2013), supermarkets generally have two characteristics: they support a heathy diet and are financially accessible. However, this operating model does have some limitations because, even though many foods supportive of a healthy diet can be found in supermarkets, some of these foods tend to be expensive, so not necessarily financially accessible to everyone on a regular basis (Charlebois *et al.*, 2012, 2013, 2014, 2015; NBCFSJ, 2011, 2012; Milway *et al.*, 2010).

The food security initiatives and organizations and food outlets were then categorized on the basis of urban or rural location using the Statistical Area Classification of Statistics Canada. The urban community category corresponds to census metropolitan areas (CMA) and census agglomerations (CAs), while the rural community category takes in the other census subdivisions in the 2011 census. Statistics Canada defines a census metropolitan area and a census agglomeration as an "area consisting of one or more neighbouring municipalities situated around a core. A census metropolitan area must have a total population of at least 100,000 of which 50,000 or more live in the core. A census agglomeration must have a core population of at least 10,000" (Statistics Canada, 2012c).

The food security organizations and initiatives and food outlets were categorized according to the linguistic composition of their communities using the relative weight of individuals whose first official language was French or English in the census subdivision of the 2011 census. The categories of Francophone communities and Anglophone communities correspond to census subdivisions where the relative weight of this language was 80% or more. The bilingual community category takes in the rest of the inhabited census subdivisions.

The mapping was done using MapInfo software, which can be used to create, organize, and present all sorts of geographic information, including the production of maps.

2.3. SURVEY

An online survey was conducted with 100 respondents responsible for community food security organizations or initiatives in New Brunswick. Topics included in the survey were community leaders; food security organizations and initiatives; community food security services and activities; food aid, including foods normally distributed or served; food sources, including nutritional value and freshness; clients and participants; funding; engagement of local communities; strengths and challenges of organizations, including their best practices; and last, needs and priorities for improving and developing community food security. We had developed and planned get all another survey intended only for school programs in the province, but we are unable to the approvals from the Department of Education and Early Childhood Development. This explains

why the survey results concerning the few school activities that were nonetheless mentioned by respondents are not presented.

The survey questionnaire was designed and pretested for the purposes of the study. Prepared in both official languages, it was aimed at those heading up organizations offering food aid in New Brunswick and included several sections designed to collect a variety of information that met the study's objectives.

Access to the survey was limited to the heads of organizations who had received an email invitation from the researchers to participate in the survey. Those individuals had been identified during the inventory of food aid and food security organizations carried out at the start of the study. They were therefore recruited by email or telephone from a list of names put together during the inventory of different community organizations, initiatives, and measures. The research partners facilitated participation in the survey by promoting the research with their members. Respondents were able to take the survey over the phone if they wanted to.

Several sections of the survey were used to collect information about the nutritional quality and safety of food aid, including sections on food boxes (contents and amount of time each box was expected to last, frequency of distribution, etc.), meal services, and food sources of the organization providing food aid. Those sections included questions for determining the different categories of food items in the food boxes, along with side dishes and condiments served as part of soup kitchen meals. Other questions concerned the respondents' assessment of the nutritional value, freshness, and safety of the foods received by their organization. Yet others looked at the strengths, challenges, and opportunities identified by the respondents with respect to improving food security in their community. The focus groups and visits to organizations made after the survey was launched served to corroborate or expand upon some of the survey results concerning nutritional quality, freshness, and safety of the food aid offered.

The advantage of the survey is that it provides provincial data that are as representative as possible of the various community initiatives promoting community food security. The survey response rate was about 60%, with 100 people responding from among the 168 community organizations, initiatives, and measures identified in New Brunswick. The sample is not random per se, but for comparison purposes only, it should be noted that an equivalent random sample, i.e. 100 respondents in a target population of 168 organizations or initiatives according to the inventory, would yield results with a margin of error of ±6.2%, with a confidence level of 95%, 19 times out of 20.

A comparison of the sample with the target population provides an overview of how well it represents the characteristics of the population of New Brunswick, including urban/rural location and linguistic composition of the province's communities.

Table 2. Distribution of respondents, organizations identified, and population of New Brunswick by rural/urban location of communities

	Respondents	Organizations	Deviation	N.B. population		Deviation
	%	%		Number	%	
Urban	51.2%	53.5%	-2.3%	394,479	52.5%	1.0%
Rural	48.8%	46.5%	2.3%	356,692	47.5%	-1.0%
Total:	100.0%	100.0%		751,171	100.0%	

Source: Statistics Canada, Population, urban and rural, by province and territory (New Brunswick)

In the survey sample, about half of the respondents were from organizations located in urban (51.2%) and rural (48.8%) areas, which is very representative of the distribution of all the organizations included in our inventory, which differs only slightly (2.3 %). Furthermore, these distributions correspond to the distribution of the province's population. Our survey sample is therefore more representative of the realities of the organizations working in the rural areas of the province than the annual HungerCount of Food Banks Canada, since two-thirds of food banks and soup kitchens that participated in that survey were located in a rural area (Food Banks Canada, 2014).

Table 3. Distribution of respondents, organizations identified, and population of New Brunswick by linguistic composition of community

	Respondents	Organizations	Variation	N.B. population		Variation
	%	%		Number	%	
Anglophone communities	65.5%	61.2%	4.3%	430,605	57.3%	3.8%
Bilingual communities	16.7%	18.2%	-1.6%	164,965	22.0%	-3.7%
Francophone communities	17.9%	20.6%	-2.7%	155,450	20.7%	-0.1%
Total:	100.0%	100.0%		751,020	100.0%	

Source: Statistics Canada, 2011 Census

The distribution of the sample of survey respondents by linguistic composition of the communities in which their organization works was very representative of the distribution of all organizations included in the inventory. Respondents working in Anglophone communities are only slightly over-represented (4.3%), while respondents from bilingual (-1.6%) and Francophone communities (-2.7%) are only very slightly under-represented.

Table 4. Distribution of respondents, organizations identified, by rural /urban location and linguistic composition of New Brunswick communities

	Respondents		Organizations			
	Urban	Rural	Urban %	Rural %	Variation Urban	Variation Rural
Anglophone communities	47.3%	52.7%	51.0%	**49.0%**	-3.7%	3.7%
Bilingual communities	92.9%	7.1%	**90.3%**	9.7%	2.5%	-2.5%
Francophone communities	26.7%	73.3%	28.6%	**71.4%**	-1.9%	1.9%
Total:	51.2%	48.8%	53.5%	46.5%	-2.3%	2.3%

If we take into account both distribution by language and distribution by urban or rural location, we can see that the sample of survey respondents is still very representative of all organizations identified in New Brunswick. The absolute variations between the distribution of respondents and organizations are actually 3.7% or less.

2.4. FOCUS GROUPS

Four focus groups lasting about two hours each were held to broaden and refine our understanding of certain questions in the survey or arising from secondary data analyses also conducted during the course of this study. A total of 21 people participated in the focus groups (4 to 6 participants per group). They were the heads or managers of food banks, soup kitchens, collective kitchens, and farmers' markets, and people involved in the community food mentor program. They all worked in New Brunswick.

They were recruited by telephone or email from a list put together during the inventory of community organizations, initiatives, and measures. From that list, we removed participants who did not want to be contacted again after having answered the survey. The community partners facilitated the participation in the focus groups by providing us with contact information for their members who agreed to be contacted and by continuing to promote the research with their members.

The focus groups were held in three different communities in the province, three in urban settings and one in a rural setting. Two were held in English and two in French. Each meeting was facilitated by a member of the research team, with the help of a research assistant. A discussion guide was used to facilitate the discussion process. The topics covered concerned the challenges faced by community organizations and initiatives; the spinoffs of their activities and their impact on wellness; and best practices, promising approaches, and opportunities for sustainably improving food security in the province. An audio recording was made to complement note taking and then transcribed.

The analysis of the focus group results made it possible to identify the highlights of the discussions, which were grouped together under different themes. When the focus groups discussions were transcribed, the letter P (P1, P2, etc.) was used to identify the comments of each participant to protect anonymity. This coding is also used to present the results. The focus group results made it possible to look at this problem more deeply, but they cannot be generalized to include all organizations and initiatives in the province.

2.5. VISITS TO FOOD AID ORGANIZATIONS TO EVALUATE THE NUTRITIONAL QUALITY AND SAFETY OF FOOD AID

To evaluate the nutritional quality and safety of food aid, visits were made to food aid organizations in order to corroborate or complement certain information collected through the survey, the focus groups, and the documentary search (literature review). In all, 13 visits were made (9 food banks and 4 soup kitchens), but enough data were collected for the analyses of nutritional quality for 11 of the organizations visited (9 food banks and 2 soup kitchens) and the safety assessment of 9 organizations (6 food banks and 3 soup kitchens). They took place during the summer in different regions of New Brunswick. Eight organizations were located in urban areas and five, in rural areas. Seven were in an mostly Anglophone area and six, in a mostly Francophone area. In two cases, the food bank and soup kitchen were located in the same place. The consent of each organization was obtained prior to the visit. Two or three investigators, who were members of the research team, were present during the visits to facilitate data collection: note taking, observations, etc. One person representing the organization was present as well to guide the visit. With that person's consent, an audio recording of the visit was made and photos were taken (food items, food boxes, meal trays, premises). The notes on the visit were transcribed after each visit.

With respect to the collection of data on nutritional quality and food safety during the visits, two visitation guides were designed and used by the investigators: one for food banks, the other for soup kitchens. The observations made and the information collected concerned the characteristics of the food boxes or meal trays (e.g. composition of food boxes or meals, anticipated duration in number of days, number of people per box); food preparation procedures and preparation environment, including hygiene practices and sanitary facilities; and food storage areas and conditions (perishable foods and non-perishable foods). This information was accompanied by the photos taken (food items, food boxes, meal trays, premises, facilities). The evaluation of food safety practices was based on the observations made and the information collected. This information was also used to estimate the nutritional value of the food boxes and meals. A list of food items received from Food Banks Canada by one food bank in the province was collected as well.

The information collected during these visits was used to estimate the nutritional value of the food boxes and the meals served and to evaluate food-safety practices. For this part of the study, which is based on the information collected during the visits, the main limitations relate to the relatively small number of organizations that made up the visitation sample. The results presented do not claim to be exhaustive or generalized. It is important to consider them as complementary to the other results, the survey, focus group, and literature review results in particular.

With respect to the analyses of the nutritional value of the food boxes and the meals served (nutrient and energy content, and number of servings from each group in Canada's Food Guide), the results presented come from visits to nine food banks and two soup kitchens. For each organization visited, a single food box or a single meal was analyzed. For food boxes, the contents analyzed were those in one box assembled for the visit. These contents may not be exactly the same as those received by clients. Furthermore, the contents of the boxes may vary depending on the season. The visits made for this study took place during the summer, which could have influenced the results, particularly with respect to nutritional value. The complementary nutritional analyses were done using a list of foods commonly received from the National Food Sharing System of Food Banks Canada by one food bank.

With respect to the evaluation of safety-related practices, the results come from visual observations and other information collected during the visits (six food banks and three soup

kitchens). These visits were relatively short (they were not long enough to do a detailed examination of the site, premises, equipment, and current practices), and no samples or measurements were taken. In situ samples and measurements (e.g. storage and cooking temperature) would have been necessary to confirm that the observed practices were in compliance with current food safety standards.

2.6. ASSESSMENT OF NUTRITIONAL VALUE OF FOOD AID

Several sections of the survey were used to collect information about the foods generally distributed in boxes or served by soup kitchens. This information enabled us to do a preliminary assessment of the nutritional value of food aid. The visits to the organizations then took place. Nutritional value (food boxes, meals, and individual food items) was assessed during these visits. This was done in two ways: a) by determining the nutritional value of food boxes and meals; and b) by characterizing individually the food items received by one food bank, using complementary methods.

a) The nutritional value of food boxes and meals (one box or one meal per organization visited) was determined using two methods, based on information collected during the visits: 1) determination of nutrient and energy content, and 2) determination of number of servings for each food group in Canada's Food Guide.)

a.1. The nutrient and calorie content of food boxes and meals was determined using Food Processor® software (SQL v10.10, Esha Research, 2012), the Canadian Nutrient File (Health Canada, n.d.), and, if necessary, Nutrition Facts tables, based on the contents of food boxes and meal trays. These contents were expressed in kcal per day (or per meal) per person (for energy) and in g, mg, or μg per day (or per meal) per person (for nutrients). Since the energy value of the food boxes and meals varied considerably, nutrient density was calculated for each nutrient as well. This value expresses the quantity of nutrient associated with a given energy intake (e.g. 100 kcal or 2,000 kcal). It was expressed in g, mg, or μg/day/100 kcal. Nutrient density value is useful in comparing quantities of nutrients on the basis of similar energy intake. The higher the nutrient density is, the higher the foods are in the nutrient or nutrients in question.

The analyses looked at two categories of nutrients. Those in the first category (protein, dietary fibre, vitamin C, folic acid, calcium, and iron) were used as indicators of good nutritional quality. Those in the second category (sodium, saturated fats, added sugars) are those whose presence limits or reduces the nutritional quality of foods. To determine the extent to which nutrient and energy contents meet the daily nutritional requirements of beneficiaries, they were compared to the nutritional requirements of a fictitious beneficiary: a 30-year-old woman, moderately physically active, in good health. This comparison was expressed in the form of percentages: % of daily energy requirements (estimated at 2,000 kcal per day), % of recommended dietary allowance (RDA), % of tolerable upper intake level (UL) (for sodium), or % of total energy intake (for saturated fats and added sugars). The reference values used for the RDA, UL, and % of total energy intake are those of Health Canada (2010).

a.2. The characterization of boxes or meals by number of servings for each food group was done using the classification and servings in Canada's Food Guide (Health Canada, 2011) as a reference. The results were expressed in number of servings per day per person, for the food groups "Vegetables and Fruit," "Grain Products," "Milk and Alternatives," and "Meat and Alternatives," as well as the "Other" category, which was used for food and beverages not included in the other groups. The values obtained were compared with the requirements (number of recommended servings per day) for a female subject, aged 30 and moderately physically active.

b) The nutritional value of foods received by one food bank was determined using a list of foods received by this organization from Food Banks Canada. The food items on the list were characterized individually using two separate two classification systems: 1) SAIN-LIM, and 2) glycemic index.

b.1. The SAIN-LIM classification system is a way of expressing a food's nutritional quality according to its ability to promote nutritional balance (Darmon and Darmon, 2009; Darmon *et al.*, 2009). Two indicators are used: SAIN and LIM. SAIN is a score indicating how well nutritional recommendations are met, calculated on the basis of five nutrients (protein, dietary fibre, vitamin C, calcium, and iron), also called "SAIN nutrients." LIM is a score for nutrients to be limited from a nutritional standpoint, calculated on the basis of three nutrients (sodium, saturated fats, and added sugar), also called "LIM nutrients." The formulas used to calculate these two indicators are found in Appendix E.

For any given food, a SAIN score of >5 and a score LIM of <7.5 are considered good scores. This classification system can be used to rate four categories of foods according to their decreasing nutritional quality (Figure 2): 1) foods recommended for health (SAIN>5 and LIM<7,5); 2) neutral foods (SAIN<5 and LIM<7.5); 3) foods recommended occasionally, in small quantities (SAIN>5, LIM>7.5); 4) foods that should be limited (SAIN<5 and LIM>7.5).

According to this classification system, foods with a high SAIN score and a low LIM score have the best nutritional quality, that is, they meet nutritional needs the best. These are foods in category 1, for example, most fresh vegetables and fruit, milk, plain yogourt, natural legumes (little added salt or fat), fresh or low-salt canned fish, low-salt lean meat, and eggs. Conversely, foods with the lowest nutritional quality are those with a low SAIN score and a high LIM score. These are foods in category 4, for example, salted or sweetened crackers, sliced white bread, cream cheese, ground beef (15% fat), beef, veal, or pork bologna, salami, chips, pop, and some fruit juices (Darmon *et al.*, 2009). Processed foods with added sugar, salt, and/or fat are generally classified in category 3 or 4.

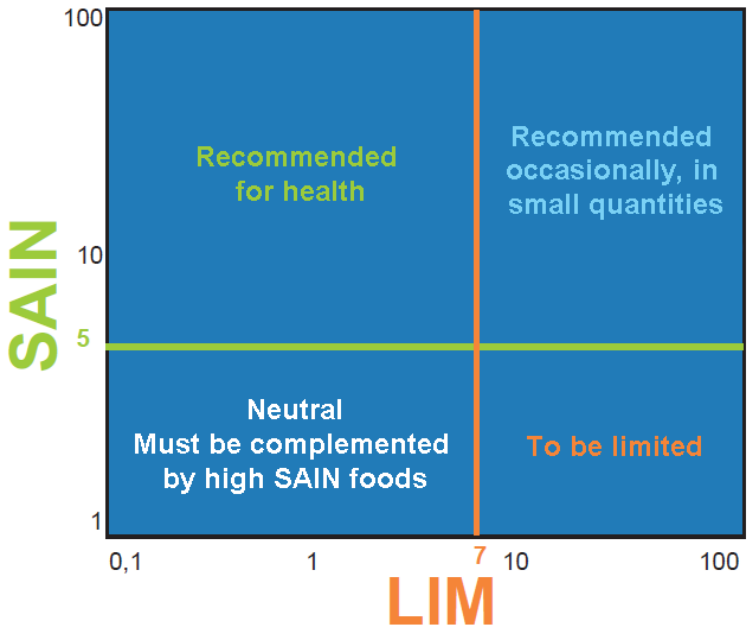

Figure 2. SAIN-LIM Food Classification System
(illustration from Georgé, 2011)

This classification system is particularly useful for comparing foods in the same group. For instance, a grain product like pasta falls into category 2 or 4, depending on its fibre, iron, saturated fat, sugar, and salt content.

It is similar to the classification system used in Policy 711 "Healthier Foods and Nutrition in Public Schools" of the New Brunswick Department of Education (Government of New Brunswick, 2008b), which identifies three categories of food according to their nutritional value, taking into account their fat, sugar, and salt content: "maximum nutritional value," "moderate nutritional value," and "minimum nutritional value" (Department of Education, Government of New Brunswick, 2008).[17] A correlation between these two classification systems can be established: maximum nutritional value: foods in category 1 under the SAIN-LIM classification system; moderate nutritional value: foods and categories 2 and 3; minimum nutritional value: foods in category 4.

b2. The glycemic index (GI) classification system is used to characterize foods according to the rise in glycemic levels they cause. The GI of foods on the list provided was determined using the table of Atkinson *et al.* (2008), which lists the GI values of a large number of foods. In this table, the GI values measured in subjects with normal glucose tolerance were used. For the few foods not included in this table, complementary tables were used.

With the GI classification system, carbohydrate foods can be divided into three categories: those with a low GI (≤55), those with a moderate GI (between 56 and 70), and those with a high GI (≤55). By convention, a value of 100 is assigned to glucose. Studies have shown that a diet consisting mostly of low-GI foods may be beneficial for health by reducing the risk for type-2 diabetes, cardiovascular disease, and certain cancers; by lowering the risk for obesity; and by better controlling blood glucose and improving cholesterol levels in people with diabetes (Marsh and Brand-Miller, 2008; Augustin *et al.*, 2002). The benefits are therefore just as preventive for people in good health or with pre-diabetes as they are therapeutic for people with a chronic illness such as diabetes.

A number of factors influence a food's GI value, including the amount and type of carbohydrates it contains and fibre, fat, and protein content. Cooking and processing methods also have an impact on GI value. Low-GI foods include most fresh fruits and vegetables, milk and dairy products, legumes, a few high-fibre cereals (e.g. traditional non-sweetened oatmeal), and whole grains such as barley and quinoa. High-GI foods include sweetened products (e.g. cookies, chocolate bars, soft drinks and some energy drinks), cereal products made from white flour (e.g. white bread, crackers, a number of commercially available breakfast cereals), instant rice, white rice, french fries, and baked potatoes. This classification system is useful for comparing foods in the same group. A cereal product that is high in fibre with little or no added sugar will have a lower GI that a cereal product containing added sugar and little fibre.

[17] These categories are defined as follows: "Maximum Nutritional Value:" Foods that are a good or excellent source of important nutrients and are low in fat, sugar and/or salt. There foods are considered nutrient dense relative to the energy they provide. These foods should be offered on a daily basis and comprise the majority of foods/beverages served in schools. "Moderate Nutritional Value:" Foods that are a source of nutrients but may be high in fat, sugar and/or salt. Relative to the energy they provide, these foods are not as nutrient dense as foods in the maximum nutritional value category. These foods can each be served up to a maximum of twice per week. "Minimum Nutritional Value:" Foods that provide few nutrients and are generally high in fat, sugar and/or salt. These foods are considered to have low nutrient density relative to the energy they provide. These foods should not be served in schools.

2.7. GENERAL ETHICAL CONSIDERATIONS

The research protocol was approved by the Human Research Ethics Committee of the Université de Moncton. The goal of the study and the nature of the participation were presented to potential participants. Participation was voluntary. The participants' free and informed consent was obtained either virtually (at the start of the online survey) or in writing in the case of the focus groups and visits to organizations. Those who did not refuse to be contacted again by a member of the research team after completing the online survey were later asked if they would agree to participate in one of the focus groups or to plan a visit to their organization. To guarantee anonymity (survey, focus groups, visits), a coding method was used to replace the names of people and organizations. Also, the results are presented in a way that guarantees anonymity.

3. RESULTS

This section of the report summarizes the results of the various types of data collections used in the study. The first section presents the findings of the documentary search and literature review (section 3.1), including an analysis of public policies and government measures concerning food security or insecurity that have been place in New Brunswick for 10 years. The other thematic literature reviews enable us to broaden our knowledge of best approaches and practices with a view to improving the quality of food aid and the effectiveness of food security actions.

The results of the inventory of food aid and food security organizations and initiatives, and food outlets in the province then provide a preliminary picture of the overall situation (section 3.2). This picture provides a description of the food security situation in New Brunswick in terms of access to food, specifically healthy affordable food for all residents, regardless of their economic situation.

Next, the results of the online survey (section 3.3) and the focus groups (section 3.4) with the heads of organizations and community initiatives involved in the food security sector are presented. These sections offer a description of the approaches and activities and the strengths and weaknesses of organizations seeking to increase food security in the different communities of New Brunswick. They also provide a description of the food security capacity of communities and an assessment of needs and priorities with respect to improving and developing community food security, including those related to nutrition knowledge and skills.

The last section (3.5) presents a number of results arising from the evaluation of food aid safety and nutritional quality based mainly on visits to food aid organizations and the list of foods received by one food bank. This evaluation also provides an overview of the results of all the data collections, which reveal a number of weaknesses in food aid quality in terms of nutrition and freshness and enable us to identify some avenues for increasing food security in New Brunswick. This evaluation also helps to define and measure some success criteria for food security initiatives and to assess the effect of existing approaches and practices on the access to healthy food.

3.1. LITERATURE REVIEW AND DOCUMENTARY SEARCH

The literature review enabled us to identify five central themes (Table 5) for which a systematic review was carried out. This section presents the analyses and thematic reviews for each theme.

The first theme pertains to public policies and government measures concerning food security and food insecurity. For themes 2 to 5, the reviews present the current knowledge about food aid quality (nutritional quality and safety) and public health issues related to food insecurity in Canada and other industrialized countries. In addition, these reviews provide an overview of recommendations being made in the scientific community and in the different practice environments concerned, in Canada mostly, to improve food aid quality. The improvement of nutritional quality is looked at mainly from the standpoint of preventing chronic diseases related to diet and lifestyle. Theme 6 seeks to identify the important components of food security best practices, i.e. those that contribute to effective promising actions.

Table 5. Themes that were the subject of analysis or thematic review in the report	
1.	Public policies and government measures concerning food insecurity and food security in New Brunswick
2.	Obesity and food insecurity
3.	Social inequalities related to diet
4.	Nutritional quality of food aid
5.	Safety of food aid
6.	Food security best practices

3.1.1. Public policies and government measures concerning food insecurity and food security in New Brunswick

This first section presents our summary analysis of public policies and government measures that have been put forward in New Brunswick over the past decade and concern food security or insecurity indirectly or directly.

One of the determining factors of food insecurity is the socio-economic situation of individuals and families. That is why initiatives aimed at reducing poverty have a direct impact on food security. When looking at initiatives for reducing food insecurity, we must therefore also take into account initiatives pertaining to poverty. This is the focus of the next subsection, which also looks briefly at the state of the community sector in New Brunswick and its relationship with the provincial government.

We then look at government initiatives more specifically concerned with food security, implemented by the Department of Healthy and Inclusive Communities (today part of the Department of Social Development), such as the Community Food Action Program, the New Brunswick Food Security Action Network, and New Brunswick's Wellness Strategy.

It should be noted that, in early 2010, the Department of Social Development funded a study on food aid services in the form of a survey of clients of food banks and soup kitchens in New Brunswick. That report has still not been released, and our formal requests to obtain it for inclusion in this study were denied.

We end this section with a summary of the findings that emerge from this preliminary analysis of New Brunswick's policies and measures concerning food insecurity or community food security.

3.1.1.a) Government initiatives concerning the community sector and poverty

In the second half of the 2000s, two large government initiatives were carried out in New Brunswick to better support the community sector and reduce poverty. In late 2006, the Shawn Graham government formed a task force to conduct consultations aimed at gaining a better understanding of the difficulties facing the community sector and finding solutions to overcome them. The broad consultation exercise carried out in connection with that study led to some findings about the community sector:

- Lack of funding and funding uncertainty, making it difficult to meet needs and plan future activities;
- Staff burnout, which increases as the number of volunteers decreases, and unappealing working conditions;
- Mismatch between the bureaucratic operating model and requirements in the field and excessive red tape when organizations deal with the government;[18]
- Lack of a spirit of cooperation and respect for community stakeholders on the part of government officials.

In 2008, the government responded to the task force's report by establishing a Secretariat of Community Non-Profit Organizations whose mandate was to improve relationships with the community sector and interdepartmental collaboration within government, as well as strengthen support for the community sector (Government of New Brunswick, 2008a). In addition, the government planned to offer multi-year funding, take measures to reduce red tape, improve partnership relations with the community sector, and promote a culture of volunteering in the province.

Although greater funding stability was planned, additional funding was not. This meant that nothing was in the works to improve wages for workers in the community sector.

The Secretariat created or managed a Provincial Advisory Committee, a Non-Profit Interdeparmental Committee, a non-profit insurance committee, and a committee of volunteer centers[19]. A Website, a data base, and a newsletter were created to provide information and promote the various programs and services offered to the non-profit sector. Some professional development courses for the government's staff were opened to non-profit organizations. Thanks to the creation of a multi-year financing framework, the Departments of Social Development, Health and Wellness and Culture and Sport signed multi-year financing contracts. Through the Assessment Reduction Program, there are now four categories of non-profit organizations that can receive a reduction of their assessed value. Before its dismantling[20], the Secreratiat was thinking about creating a provincial body and regional mechanisms to support the non-profit sector, as well as a program that would have provided interest-free loans for capital costs related to the acquisition, repair or renovation of property to be used primarily for service delivery activities. That program was also to encourage non-profit organizations to work together on capital projects that would result in co-renting or a more efficient use of space.

In the fall, the government launched a *public engagement initiative to fight poverty* with a view to developing a poverty reduction plan. The approach was to be based on collaboration among various sectors in society and shared responsibility between people living in poverty, the community non-profit sector, businesses, and the government in cooperation with citizens. "The public engagement process offers opportunities for dialogue, reflection and learning, and fosters a plan that meets the realities of poverty and social and economic inclusion."(ESIC, n.d).

The first poverty reduction plan, *Overcoming Poverty Together: The New Brunswick Economic and Social Inclusion Plan*, resulted from these consultation and public engagement processes.

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[18] Premier's Community Non-Profit Task Force (2007), *Blueprint for Action: Building a Foundation for Self-Sufficiency.*
[19] See Annuals Reports of the Community Non-Profit Organizations Secretariat. Retrieved from http://www1.gnb.ca/leglibbib/en/Resources.aspx/EDocs/Serials/26
[20]The Community Non-Profit Organizations Secretariat was abolished in 2012 by the David Alward government. The responsibility for the sector was then transfered to the new Department of Healthy and Inclusive Communities, which in turn was integrated into the Department of Social Development in 2015.

Adopted on November 13, 2009, the general objective was for the province to "reduc[e] income poverty by 25% and deep income poverty by 50% by 2015" (Government of New Brunswick, 2009a).

In April 2010, the plan was supported by legislation. The government passed the *Economic and Social Inclusion Act* under which it established the New Brunswick Economic and Social Inclusion Corporation (ESIC) whose mandate was to ensure the continued partnership of the citizens of New Brunswick in the implementation and evaluation of an economic and social inclusion plan. Also, the Act established the Economic and Social Inclusion Fund to cover the ESIC's expenses and amounts invested in the community inclusion networks. The ESIC funds networks for the purposes of "helping them implement the objectives of the Provincial Plan set out in their local plans."[21] The community inclusion networks (CINs) are based on collaboration among all sectors, as well as a sharing of resources and responsibilities to reduce poverty (ESIC, 2010-2011 annual report).

The ESIC's approach is based on the development of community and individual capacities and stakeholder empowerment to prevent "constantly relying on the various levels of government to eradicate poverty." Indeed, "the plan was designed so that communities and individuals can contribute directly and effectively to improve their situation" (ESIC, 2013).

A number of projects presented as success stories are aimed at increasing food security. Here are a few examples. The Greater Fredericton Community Inclusion Network plans to plant a garden beside the food bank.

These vegetables can then be added into the food boxes to feed families in need. And we'll get the students to grow the seedlings in the classrooms. And why not invite families at the food banks to volunteer to help? (ESIC, 2012).

The Northumberland Community Inclusion Network (NCIN) offers nutritional training. Twenty-three community food mentors (CFMs) received their diplomas at the NCIN's annual celebration. The Northwest Community Inclusion Network (RIC-NO) set up a school breakfast program (serving 5,700 students), and the Westmorland-Albert Community Inclusion Network (WA-CIN) started a gardening club at a local school.

The Kent CIN[22] has adopted an food security action plan, and it supports a long-term project being carried out by the Pays de Cocagne Sustainable Development Group (PCSDC) to set up the Kent community food centre network (PCSDG, 2012), based on the community foods centres(CFC),[23] model (Community Food Centres Canada, 2012). The role of this network is to develop a local, sustainable, fair food system that provides its users with knowledge about foods that are healthy, local, and produced and harvested sustainably (PCSDG, 2012, p. 5). This project got under way officially in 2011-2012 after it received funding from the Kent CIN. This initiative is particularly relevant given the linguistic, geographic, and socio-economic characteristics of Kent County. This county is located in a rural area where the unemployment rate and incidences of low income are among the highest compared with other counties in New Brunswick (Lebreton and Leclerc, 2007). In 2006, government transfers to that area were the highest, representing nearly 28% of total family income (RDÉE Canada, 2006). The situation that prevails in this county can be explained in part by its mostly seasonal jobs and an economy based on natural resources. In addition, residents

[21] *Economic and Social Inclusion Act* of New Brunswick, s. 33(1).
[22] The Kent CIN is number 11 on the map (Figure F1 in Appendix F).
[23] See La fondation de la famille J.W. McConnell, Montréal : http://www.mcconnellfoundation.ca/blog/fr/tag/community-food-centres-canada-fr)

often have to travel long distances to get to a food store or food bank. The mother tongue of the majority of residents (over 70%) is French.

A second poverty reduction plan was developed for 2014-2019 (ESIC, 2014). In this plan, food security gets more attention and is a key element of one of the pillars of the plan, i.e. social inclusion. While it continues to promote a partnership approach and rely on social networks, the Plan identifies four priority actions for increasing food security:

Priority actions

- Promote and support community-based initiatives related to food preparation, food safety and access to healthy food.
- Promote transition of food banks to community-based food centres.
- Encourage initiatives that address availability of nutritional food and food management and -coordination in emergency food programs.

Promote the establishment of community-based breakfast programs in all public schools.

The transition of food banks to community-based food centres () is intended to value users, help them build skills, have influence and make decisions, and create strong social connections (Economic and Social Inclusion Corporation, 2014, p. 18). The plan recognizes the determining role of poverty in food security: "The real long-term solution to food insecurity is the elimination of poverty and the implementation of initiatives that promote economic and social inclusion" (Economic and Social Inclusion Corporation, 2014, p. 17). The Plan provides for the annual indexation of the minimum wage. It also suggests exploring the concept of living wage, which must enable an individual or a family to "meet their basic needs, to maintain a safe and decent standard of living in their community and to save for future needs and goals" (p. 15) The Plan does not contain any specific, measurable objectives, but it does provide for an annual evaluation of actions by the Economic and Social Inclusion Corporation based on progress indicators.

3.1.1.b) Government initiatives more specific to food security

The Department of Healthy and Inclusive Communities (now integrated into the Department of Social Development) was then in charge of the food security portfolio. That Department had developed two definitions of food security, which reflected a two-tiered vision, i.e. households and communities.

Within a **household**, food security means having reliable and adequate access to the safe and nutritious food that is needed for an active and healthy life.

Within a **community**, food security is associated with a sustainable food system that maximizes healthy choices, community self-reliance, and equal access for everyone.[24]

Community Food Action Program

The Community Food Action Program is the main food security initiative of the Department of Healthy and Inclusive Communities. It uses the following definition of food security:

[24] http://www2.gnb.ca/content/gnb/fr/ministeres/csi/Mieux-etre/content/securite_alimentaire.html

A community is "food secure" when everyone obtains a safe and nutritious diet through a sustainable food system that maximizes healthy choices, community self-reliance and equal access for everyone.[25]

This program provides funding for projects that "increase access to healthy food, enhance food skills, and strengthen our communities (called community food actions).[26]

The program supports community projects aimed at improving food security, particularly for people living in poverty, seniors, youth, and persons with disabilities.[27] The project eligibility criteria show the vision that motivates stakeholders in the food security sector. Projects eligible for a grant must meet the following criteria:

- Increase food knowledge and skills in communities for all people involved in the program
- Increase access to healthy food
- Increase community capacity
- Build strong partnerships, including vision and work, as well as financial and/or in-kind contributions.[28]

Building community capacity means that the project must help "individuals and communities recognize their strengths, develop new skills and resources, and work together to reach their goals."[29] The objective is therefore to increase community and individual nutrition management through reliance on community resources and capacities and support for community initiatives already under way. The government's vision is therefore to provide a framework that encourages empowerment and community and individual nutrition management.

Another aspect of this vision is encouragement for partnership work. In the government's view, such work ensures continued community engagement. Partnership work makes it possible to promote and share community resources and capacities. The partnerships encouraged are those that are associated with networks put in place and supported by the government, i.e. "wellness networks, community inclusion networks, food banks, public health dietitians, and community food mentors."[30]

Establishment of the New Brunswick Food Security Action Network

The New Brunswick Food Security Action Network (NBFSAN) was established to "facilitate networking among organizations and individuals related to the promotion, research, education and community engagement of food security throughout New Brunswick."[31]

Through its actions, the Network seeks to foster food security research, community engagement, communication, education, and promotion.

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[25] http://www.gnb.ca/wcs-mecs/securitealimentaire/ProgrammeDActionCommunautaireEnAlimentation.asp
[26] http://www2.gnb.ca/content/gnb/fr/ministeres/csi/Mieux-etre/content/securite_alimentaire.html
[27] http://www2.gnb.ca/content/gnb/en/services/services_renderer.201277.Wellness_-_Community_Food_Action_Program.html
[28] Idem.
[29] Idem.
[30] Idem.
[31] http://www.nbfoodsecurity.ca/about-us-2/vision-mission-statement/

A number of steps preceded the official establishment of the New Brunswick Food Security Action Network in 2012.

- 2006: A group of people concerned with food security formed an informal food security network.
- 2008: First provincial conference on food security held at the Université de Moncton.
- 2009: Work day to structure the Network and schedule quarterly meetings.
- 2020: Second conference organized.
- 2011: Terms of reference defined to identify the mandate, vision, guiding principles, conditions for membership, and structure of the Network.
- 2012: Conference, hiring of a coordinator, strategic planning session.

The 2008 conference acknowledged the importance of adopting a strategy for addressing an issue as complex as food security (New Brunswick Food Security Action Network, 2008). This strategy was developed with input from stakeholders with complementary interests, working together to improve food security in the province. The Network seeks to promote such cooperation through its activities.

The Network promotes a number of programs related to initiatives aimed at improving food security:

- Community food mentors
- Community gardens
- Community kitchens
- *Farm to Cafeteria* programs
- Food boxes, community-supported agriculture, food co-ops, and bulk buying clubs
- Food banks/centres.

In 2010, a food mentor network was established in the province. Its aim is to bring people together so they can learn to meet challenges associated with food security.

The New Brunswick Food Security Action Network distributes tools, guides, and information to help stakeholders in the food security sector do their work.[32]

Wellness Strategy

New Brunswick's Wellness Strategy for 2009-2013 was based on four pillars associated with a healthy lifestyle: 1) mental fitness and resilience, 2) healthy eating, 3) physical activity, and 4) tobacco-free living.[33]

If we look at the healthy eating pillar, which closely concerns our study, the goal is as follows: "To increase the rates of healthy eating among New Brunswickers."[34] The indicators evaluated for children and adolescents are consumption of fruits and vegetables, breakfast consumption, and consumption of sweetened non-nutritious beverages.

To achieve the Wellness Strategy's goals, five strategic directions were identified:

1. Form partnerships and collaborate with stakeholders.
2. Build capacity for community development.
3. Promote healthy lifestyles.

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[32] See their tools here: http://www.nbfoodsecurity.ca/toolkits-and-manuals.
[33] *Live well, be well, New Brunswick's Wellness Strategy 2009-2013*, Government of New Brunswick (2009c).
[34] Idem, p. 13.

4. Develop and support healthy policies.
5. Conduct surveillance, evaluations, and research.

The provincial Wellness Strategy addresses the determinants of health through evidence-based means. This requires taking a comprehensive, multi-dimensional approach supported by partnerships, cooperation, and community engagement in a wide variety of sectors. The vision underlying the means used to achieve the goals is based on an approach whereby community stakeholders are engaged, recognize the strategic value of knowledge, take steps to mobilize that knowledge, and encourage stakeholder self-reliance. Another aim is to improve interdepartmental cooperation, since wellness is influenced by actions taken by other departments.

The new Wellness Strategy for 2014 to 2021 incorporates recommendations from the evaluation of the previous strategy. It seeks to "encourage action on all the dimensions of wellness and on all the determinants of health rather than limiting it through the four previous healthy lifestyle goals." (Government of New Brunswick, 2014). The emphasis is on building competence, autonomy, and relatedness, and identify two key goals:

1. Increase the number of New Brunswickers with the capacity to support healthy development and wellness.
2. Increase the number of settings that have conditions to support wellness.

Like the previous strategies, this strategy continues to involve all stakeholders, including individuals, families and informal groups, communities, educators, private-sector partners, and governments. The key outcomes arise directly from the goals.

1. Healthy and resilient people – the majority of New Brunswickers have optimized their capacity to support healthy development and wellness for themselves and others.
2. Healthy and resilient environments – conditions to support wellness are optimized in the majority of homes, schools, communities, workplaces, and other settings.

Although not an actual goal, healthy eating is mentioned several times in the strategy as one of many components of wellness and as a determinant of health. There is no specific goal with respect to food security.

Two indicators (self-rated general health and self-rated mental health) will show whether the strategy has worked. In fact, the strategy invites the partners to monitor and measure progress made using appropriate indicators: "Everyone shares responsibility to monitor progress towards that vision" (p. 27)

3.1.1.c) A collaborative and community turning point

In New Brunswick, the public policy approach to food security turned a corner in the 2000s. There seemed to be a desire to transition from a silo approach, based on charitable initiatives, to a more collaborative approach, based on a community development vision.

Also, there was reliance on networking, cooperation, and a multisectoral, interdepartmental, convergent approach. It was as if there were a willingness to mobilize communities (civil society and individuals) to become involved in a broad movement aimed at wellness. Individual and community autonomy, self-determination, and empowerment were encouraged.

In health and wellness, the focus was on a population health approach based on "evidence" and convincing data. Knowledge sharing played an important role.

This approach, which underlies all government actions within the community, had impacts on food security initiatives. Elements of this vision emerged from the meetings of the Food Security Action Network, held four times a year. At the start of each meeting, the members are asked to describe their vision of food security for that year, based on the projects under way. In addition to tangible projects promoting improved access to food, several members said they wanted to work collaboratively in order to share information, knowledge, and best practices among stakeholders more effectively.[35] Some hoped that people experiencing food insecurity could develop food knowledge and skills.

One member's vision of the Network was that there be less reliance on food banks and more of a community approach. Similarly, another Network's member wished that food banks move away from the charitable model towards a community capacity building model. Yet another member, this one representing the former Department of Healthy and Inclusive Communities (now part of the Department of Social Development), supported the vision of expanding the role of food banks and moving towards a community capacity building role.[36]

3.1.2. Obesity and food insecurity

"*Food insecurity and obesity are two sides of the same coin (…), people making trade-offs between food that's filling but not nutritious and may actually contribute to obesity.*"

(Comments by a stakeholder, quoted by McMillan, 2014, p. 78)

In the developed countries, the risk of obesity is estimated to be 20% to 40% higher among people experiencing food insecurity than among the rest of the population (Burns, 2004). The global problem linking obesity and food insecurity is the social inequalities in health as they related to food (see section 3.1.3 below). Obesity and most chronic diseases associated with malnutrition follow a steep socio-economic curve, but the social inequalities in obesity often draw attention for a number of reasons: the extent of the phenomenon, which has reached what are termed epidemic proportions; the many negative impacts on health; the paradoxical nature of the phenomenon (poverty having long been associated with undernutrition and underweight rather than the contrary) (Darmon and Darmon, 2009; Haering and Syed, 2009; Dinour *et al.*, 2007); and the difficulty of resolving this phenomenon.

In the industrialized countries, obesity and food insecurity share a determinant, namely, socio-economic status, which explains why these two problems are often observed simultaneously, even though this may seem paradoxical. This confluence of two problems is a particular concern in New Brunswick because, in addition to poverty and food insecurity indicators, which remain high, the province has an obesity rate that is among the highest in Canada and rising (adults and children). According to a recent study, by 2019, New Brunswick will have more overweight or obese adults than adults of normal weight (Twells *et al.*, 2014). A total of 26% of children and young people aged 12 to 17 in New Brunswick are overweight or obese according to the 2011-2012 CCHS (Statistics Canada, 2015). Children and youth are the most affected by obesity and other food-related to social inequalities in health. For that reason, the national framework for action to promote healthy weights in Canada (Public Health Agency of Canada, 2010) focuses on children and adopts food security concepts to curb child obesity.

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[35] Minutes, January 22, 2013, April 24, 2013, Meeting of Network members. Retrieved from http://www.nbfoodsecurity.ca/about-us-2/meetings/

[36] *Live well, be well, New Brunswick's Wellness Strategy 2009-2013*, Government of New Brunswick (2009c).

The results of studies done in North America and Europe on obesity and food insecurity point to a positive correlation between the presence of mild or moderate food insecurity and overweight or obesity in one or more household members (e.g. Grange *et al.*, 2013a, 2013b; Wilde and Peterman, 2006 and Kaiser *et al.*, 2004, cited par Haering and Sed, 2009). This correlation seems to be greater among women than among men (e.g. Wilde and Peterman, 2006; Townsend *et al.*, 2001, cited by Haering and Syed, 2009; Dinour *et al.*, 2007). In children, the results are inconsistent (Haering and Syed, 2009). The authors of a national study on food and the nutritional status of food aid recipients in France, conducted from 2011 to 2012, described the health status of recipients as particularly worrisome, given the very high prevalence of obesity, hypertension, diabetes, and certain nutritional deficiencies. They believed that priority should be given to strengthening prevention measures, particularly local ones, that target people receiving food aid (Grange *et al.*, 2013a. 2013b). Furthermore, an increasing number of health authorities are in favour of anti-food insecurity initiatives associated with the promotion of physical activity (Agence Régionale de Santé Midi-Pyrénées, 2014). This approach is intended to intensify obesity prevention and management in people experiencing food insecurity. It is one of the prevention priorities related to the promotion of physical activity and healthy eating.

Independently of food insecurity, obesity and overweight are associated with undernutrition with respect to several nutrients. Higher deficiency rates for folic acid, vitamin C, vitamin B_{12}, vitamin D, vitamin K, iron, zinc, and dietary fibre, for instance, have been documented for obese or overweight subjects than for normal-weight subjects (Ernst *et al.*, 2009; Markovic and Natoli, 2009; Kimmons *et al.*, 2006). These higher rates are attributed in part to a diet of poor nutritional quality, that is, one with high energy density and low nutrient density (Ernst *et al.*, 2009; Markovic and Natoli, 2009). All are likely to be aggravated by food insecurity.

In industrialized countries, the prevalence of obesity in adults and children is inversely associated with socio-economic status, whether measured by income or education level or by socio-professional category. Also, for a given level of corpulence, the health risk is greater in populations with low socio-economic status. Consequently, for obese people, the prevalence of hypertension, type 2 diabetes, and cardiovascular disease is higher among people with low socio-economic status than in other groups (Darmon and Darmon, 2009; Haering and Syed, 2009). Obesity is more common in disadvantaged populations because they exhibit most of the risk factors more frequently. These factors are present at birth, during childhood and adolescence, and throughout life.

For instance, at birth, not having been breast-fed and having been exposed too early to a protein-rich diet are risk factors for obesity that are amplified in low socio-economic status families (Darmon and Darmon, 2009). Breast milk and breastfeeding are often overlooked in food insecurity or food security initiatives. However, breast milk is a natural resource that is vital for food security (Dietitians of Canada, 2007; Agriculture and Agri-Food Canada, 1998). In addition to the health benefits for the infant and the mother, breastfeeding reduces dependence on commercial formulas that are unaffordable for low-income households (Delisle and Hamelin, 1997). During childhood, adolescence, and throughout life, being sedentary and dietary imbalances are often more pronounced in disadvantaged populations. These behaviours that are harmful to health (e.g. being sedentary, dietary imbalances) are themselves explained by structural, physical, economic, and sociocultural factors (Darmon and Darmon, 2009).

In addition to family and social environment are factors like geographic and economic barriers that limit access to foods of good nutritional quality,[37] as well as psychosocial factors; for instance, a strong social capital contributing to the transmission of knowledge about food, nutrition, and health may limit the risk of poor diet, whereas social vulnerability increases it. Furthermore, poverty may be accompanied by isolation, solitude, boredom, and/or depression, which may lead to more time spent in front of the television and, consequently, being more sedentary (Darmon and Darmon, 2009; Haering and Syed, 2009). Another consequence of more time spent in front of the television is increased exposure to advertising for foods of poor nutritional quality, implicated in the current obesity epidemic. Children are particularly vulnerable. Also, when it comes to household knowledge and skills with respect to nutrition, budgeting, and food management, observations point to the influence of media on consumption practices, which is accompanied by a loss of culinary and food knowledge (Raine, 2005).

There are two aspects to the causal relationship between socio-economic status and obesity: low socio-economic status encourages obesity to set in, and conversely, obesity may lead to stagnation or regression in social status owing to the discrimination that obese people may experience. For this reason, social inequalities in obesity – and also, more generally – in health tend to increase from generation to generation, unless adequate measures are taken to address them (Darmon and Darmon, 2009).

The development and implementation of effective measures remain a challenge in Canada in general and in New Brunswick in particular owing to the observed persistence, and in some cases, worsening, of social inequalities in health (National Collaborating Centre for Healthy Public Policy, 2010; National Collaborating Centre for Aboriginal Health, 2009, Government of New Brunswick, 2016). These findings should be looked at in relation to the increase in the income gap between the rich and less rich: in Canada, poverty and inequality rates have increased more than the average for the OECD member countries (OECD, 2008). According to the OECD, since the late 1990s, redistribution mechanisms are no longer enough to correct the increase in income inequalities in Canadian households. Not all age groups are affected equally since the low-income rate for seniors is about 6%, while that for households with one child is about 15% (OECD, 2008, cited by the Montreal Health and Social Services Agency, 2011). One of the issues in New Brunswick is therefore to break the vicious circle of persistent inequalities and poverty that contributes to ongoing food insecurity and obesity, including SIHs.

3.1.3. Food-related social inequalities in health

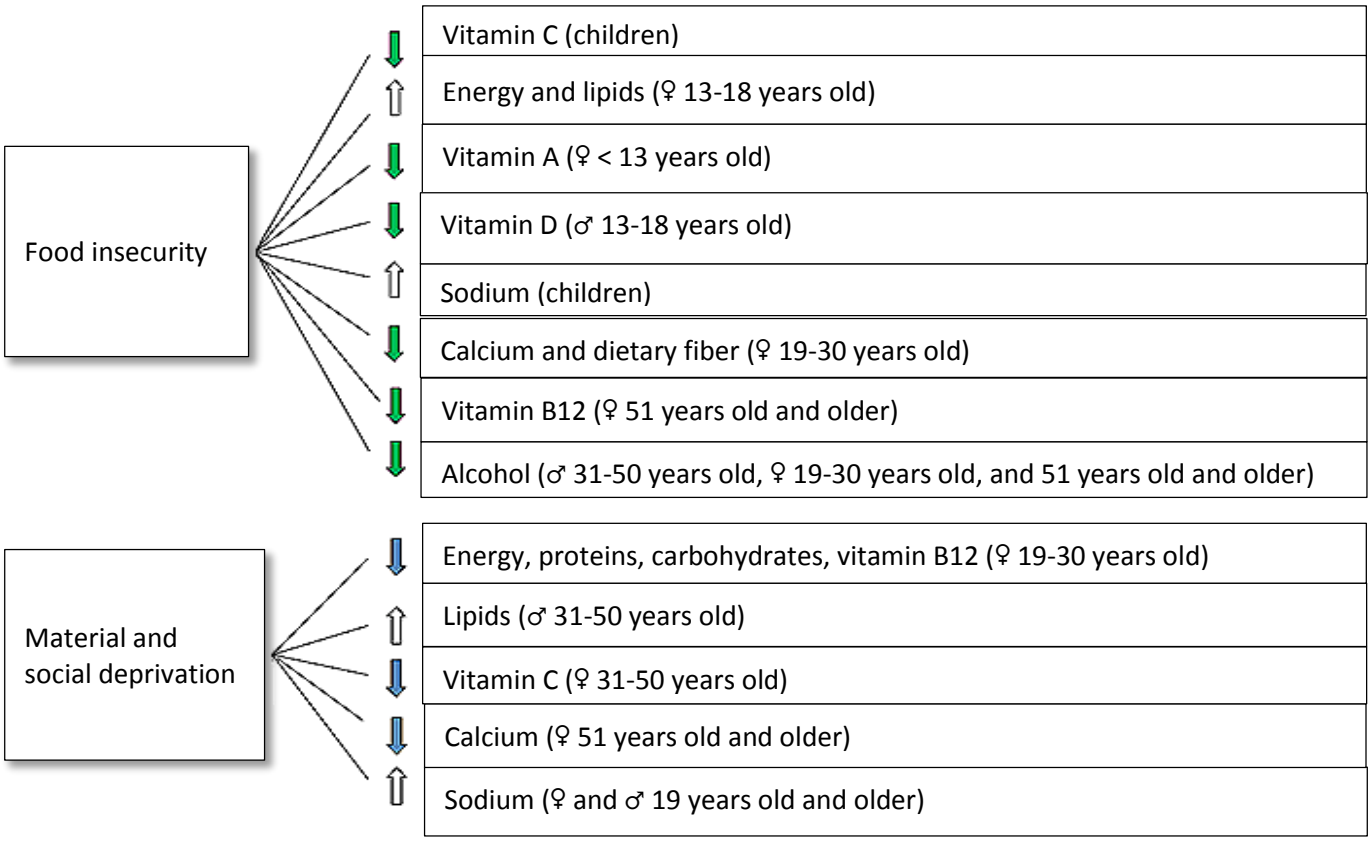
In countries like Canada, where there is plenty of food, people with modest incomes, and residents of certain communities or remote regions or of otherwise disadvantaged neighbourhoods are more likely to suffer the effects of a poor diet. For example, disadvantaged populations are observed to have a higher rate of chronic health problems related to nutrition, hypertension, obesity, type 2 diabetes, cardiovascular disease, and osteoporosis in particular.

These social inequalities in health can be explained in part by behaviours less favourable to health in the more disadvantaged socio-economic categories. There is, for example, a strong positive association between fruit and vegetable consumption and household income (Caillavet *et al.*, 2006; James *et al.*, 1997, cited by Darmon, 2007; Garriguet, 2007a, 2004). Among food aid recipients, the frequency of fruit and vegetable consumption is often very low (Grange *et al.*, 2013a,

[37] In this report, the terms "foods of good nutritional quality" and "nutritious foods" are used synonymously. However, we prefer the first term to the second. Since all foods have some nutritional value, they are all "nutritious" to some extent, but they are not all of good nutritional quality.

2013b). Also, the diet of disadvantaged people is often not particularly diversified and is based primarily on refined grain products – bread, pasta, cereal, baked good, etc. – and includes few fruits and vegetables, few dairy products, very little fish, and very few whole grain products. This explains why intakes of protective nutrients (dietary fibre, vitamin C, beta-carotene, folic acid, polyphenols, and calcium and potassium) that are abundant in unrefined plant products are strongly and positively associated with socio-economic status, while macronutrient intakes tend to be weakly differentiated socially (Arts *et al.*, 2001; Bates *et al.*, 1999; James *et al.*, 1997, cited in Darmon, 2007). On average, in Canada, overall dietary quality is poorer among people with lower socio-economic status than among the more economically advantaged (Garriguet, 2009, cited by Health Canada, 2013). Data in of the 2004 Canadian Community Health Survey (CCHS) indicate that food insecurity increases the prevalence of inadequate nutritional intake of protein, vitamin A, thiamin (vitamin B_1), riboflavin, vitamin B_2, vitamin B_6, folic acid, vitamin B_{12}, magnesium, phosphorus, and zinc in adults and adolescents, compared with those in an food security situation (Kirkpatrick and Tarasuk, 2008).

A study of the food security situation in Quebec households in relation to eating habits based on data in the 2004 CCHS indicated that people living in food insecurity households had consumed, the day before the survey, less fruit (in quantity and frequency), less yogourt, and sometimes less whole grain bread compared with people in food security households. Their consumption of foods in the "Other" category was higher in the year preceding the survey (Blanchet and Rochette, 2011). That study also showed that material deprivation, which reflects mostly education, average personal income, and employment, was significantly associated with reduced consumption of fruits and vegetables. Furthermore, it indicated that intakes of several nutrients differed significantly among people who lived in food insecurity households or were materially and socially disadvantaged and people who were better off or more advantaged (Blanchet and Rochette, 2011). As illustrated in Figure 3 below, intakes of vitamin C, vitamin B_{12}, vitamin A, vitamin D, calcium, and dietary fibre, for example, were lower for certain groups of individuals, while intakes of sodium and fat were higher



Source: Statistics Canada, CCHS cycle 2.2, Nutrition (2004) – Master file - person level weight - Women = ♀; men = ♂
* P value obtained by ANOVA, significant at the level of 0.05 for nutrients and groups presented.

Figure 3. Significantly different nutritional intakes by food insecurity and material deprivation, Quebec population aged 1 and over
(Blanchet and Rochette, 2011, p. 33)

In an food insecurity study done in the Gaspé and the Magdalene Islands involving 36 food-insecure adults, those who had to follow a strict diet for health reasons said they could not afford the diet recommended by their physician for financial reasons (Côté, 2007). Several suffered from fatigue and noted a relationship between their lack of energy (fatigue, apathy, blood sugar problems, dizziness) and their poor or inadequate diet. Some also noted a relationship between their difficulties in maintaining health or recovering from a health problem and the poor quality of their diet (Côté, 2007).

Impact of food costs

In highly industrialized countries, the nutritional quality of food is directly associated with its cost. A simple method such as that as the "Nutritious Food Basket" (Health Canada, 2008) can be used to measure this cost. In New Brunswick, the monthly cost of a Nutritious Food Basket, measured in 8 of the 12 community inclusion networks (CINs), shows that the cost of nutritious foods is relatively high ($264 to $275 per month for one person in 2011), no matter where one lives in the province (NBCFSJ, 2011). A subsequent study showed that this cost increased between 2010 and 2011, making foods already under-consumed by people with low social-economic status even less

affordable, particularly fresh fruits and vegetables and whole grain cereal products (NBCFSJ, 2012). These two studies show that a balanced diet is not within the financial grasp of people at the bottom of the income scale in New Brunswick.

The price of food is often seen by people with a low income as a barrier to achieving a balanced diet and eating fruits and vegetables (Dibsdall *et al.*, 2003; Giskes *et al.*, 2002). Indeed, for the same total energy intake, a diet rich in fresh fruits and vegetables is generally more expensive than a diet with few of these items (Schröder *et al.*, 2006; Drewnowski *et al.*, 2004, Darmon,& Briend, 2004). The high water content and very low energy density of fruits and vegetables make them expensive sources of energy (Darmon *et al.*, 2005). Darmon *et al.* (2004) showed that the same amount of energy costs less if it comes from a diet of low nutritional quality (i.e. diet with high energy density and low nutrient density) than from a diet of optimum nutritional quality. Studies using programming modelling have shown that cost constraint alone directs food choices towards a diet with a high energy density that is low in essential nutrients (Darmon *et al.*, 2006a, 2003, 2002). The significant increase in the number of products available in the categories of convenience foods (canned or dehydrated products requiring little preparation) and snacks and sweets, the variety of which is associated with adiposity and hypertension, weakens people on a low income in particular, because this variety is accessible to them financially, unlike fresh fruits and vegetables and other products of good nutritional quality (Milway *et al.*, 2010; Darmon and Darmon, 2009).

Other economic factors are involved in food choices that are unfavourable to health observed within disadvantaged populations. For instance, owing to the budget constraints they face, people with low socio-economic status are often more receptive to the financial (economic) benefit represented by large servings (price by weight decreases when serving size increases) (Darmon and Darmon, 2009). Increased serving size is directly related to the obesity epidemic, as is the increased number of inexpensive foods of poor nutritional quality. In addition, the disappearance of corner stores offering economic access to foods of good nutritional quality further penalizes poor people because purchasing these foods in a supermarket requires not only sufficient income, but also a means of transportation, some storage space, and appliances for conserving fresh or frozen products (Milway *et al.*, 2010; Côté, 2007).

A number of barriers related to the cost of food therefore partially explain the high prevalence of obesity and nutrition-related diseases in disadvantaged populations. Nutrition policies and aggressive interventions aimed at improving the physical and economic access of these populations to foods of good nutritional quality are therefore essential to making the right to a balanced diet a reality for everyone. Besides making these foods financially affordable, it is necessary to make them appealing, that is, they must be socially and culturally acceptable, and to fight against unfair competition with cheap foods of low nutritional quality. In this vast program of change, which requires the emergence of a new food culture, there are many, who like Riches (1999), emphasize the importance of community interventions and democratic debate to reaffirm the right of all Canadians to a balanced diet. In some ways, community food security initiatives have multiplied in response to the following questions: how can people with a modest income eat better affordably and how can a better diet be made available to everyone?

<u>Eating better cheaply: the importance of food literacy</u>

"*Most of the working poor don't have the time or the know-how required to eat well on little*" (McMillan, 2014, p. 79)

It is difficult to eat a balanced diet if one's food budget is just equal to the minimum necessary to meet nutritional recommendations, which we have estimated at $10 per day for an adult in New Brunswick, based on the cost of a nutritious food basket in 2011 (NBCFSJ, 2011). To eat a diet of good nutritional quality with a food budget of about $10 per day or less, use must be made of relatively inexpensive plant products of good nutritional quality, such as legumes, root vegetables, oleaginous fruits (e.g. avocado, olives, nuts, and grains), oranges, bananas, apples, cabbage, squash, celery, and onions, as well as frozen and canned vegetables and fruit juices (Darmon, 2007, Darmon *et al.,* 2006b).

Although this is theoretically possible, it assumes a very good knowledge of the nutritional composition of foods and of the nutritional recommendations, as well as the ability to prepare and conserve foods. For that reason, food literacy initiatives[38] (Conference Board of Canada, 2013a, 2013b; Government of Canada, 2010a, 2010b) are an important complement to food aid programs if the goal is to help people affected by food insecurity to regain their food autonomy. However, food education and food skills development programs must not be the priority to the detriment of food aid and actions on systemic causes of food insecurity, as it is often the case of the initiatives in public health, such as nutrition initiatives for low-income populations (McLaughlin, Tarasuk and Kreiger, 2003). There has been indeed some studies on the stereotypes that poor families lack the skills and the motivation to cook their meals at home with unprocessed products. Those studies question the efficiency of food skills to compensate for an insufficient income and to protect oneself from food insecurity, especially for the very poor households (McLaughlin, Tarasuk and Kreiger, 2003). These authors note indeed that women in severely food-insecure households prepare food in a simpler way, but not less often, than women in households where food insecurity is moderate. For that reason, we recommend that nutrition professionals, in their interventions, call for policy reforms to alleviate the financial pressures of poor households. Lack of food and culinary knowledge is not the only factor that needs to be considered here. The time factor and the food environment are also important, as noted by McMillan (2014, p. 79): "Often working multiple jobs and night shifts, most of the working poor tend to eat on the run. Healthful food can be hard to find in so-called food deserts – communities with few or no full-service groceries."

<u>Food quality and food environment</u>

Research showing that poor accessibility to foods of good nutritional quality by people with low SES is often based on the "deprivation-amplification" hypothesis. This is defined as a process by which "disadvantages arising from poorer quality environments (…) amplify individual disadvantages in ways which are detrimental to health" (Macintyre, 2007, cited by Health Canada, 2013a). At present in Canada, there is little evidence-based data to support this hypothesis. Most research on food access in Canada has been conducted in urban areas, and there are major gaps in what is known about food environments in northern, rural, and remote communities (Health Canada, 2013a). A few food deserts[39] have been identified in Canada, but there is no evidence of their widespread existence: 3 studies found evidence of food deserts in this country, whereas 10 others found lower SES areas to have as good as or better geographic access to nutritious foods than higher SES areas (Health Canada, 2013a).

These observations point to the importance of other factors for food quality, specifically, the cost of food and the knowledge and skills needed to eat well. As noted by Fielding and Simon (2011,

[38] Food literacy can be broadly defined as food-related knowledge, attitudes, and skills. It refers to an individual's ability to select and purchase nutritious foods and meals, safely store and prepare foods, interpret food labels and claims, and plan and budget for meals. (Conference Board of Canada, 2013b).

[39] Food deserts are defined as low-income areas where nutritious food sources are lacking (Health Canada, 2013a).

cited by Health Canada, 2013), adequate access to nutritious foods (for example, by placing a corner store or supermarket in an underserved area) may be a necessary but not sufficient condition to improve dietary quality. There must also be efforts to ensure that foods of good nutritional quality are priced affordably and that the education required for these foods to become the basis of an everyday diet is provided.

A recent report by the Conference Board of Canada (2013b) on food literacy[40] notes that nutritional education should be a priority in the schools. This recommendation is based on the report's highlights: "There are still significant gaps in Canadians' knowledge about food, nutrition, and health. Factors such as price, convenience, taste and availability compete with knowledge about nutrition and health when consumers are making food-related decisions" (Conference Board of Canada, 2013c). The findings and recommendations presented in that report and other recently published reports (Conference Board of Canada, 2013a; Government of Canada, Healthy Living Issue Group of the Pan-Canadian Public Health Network, 2010a) deserve special attention when it comes to the prevention and remediation of food insecurity in New Brunswick.

The importance of acting simultaneously on people's knowledge and skills and on the food environment (e.g. food supply, food advertising or marketing) is noted in many studies (Gouvernement du Quebec, 2008). For example, it seems advisable to set up various forms of food supply, such as the following:

- Implementation of affordable fresh fruit and vegetable delivery services, while trying to strengthen ties among citizens,
- Community-supported agriculture projects,
- Opening of small markets,
- Establishment of specialized stores associated with local producers.

An integral part of the food environment, the influence of the media, particularly the advertising of food of low nutritional quality that is relatively inexpensive, should also be considered since it can have a negative impact on food choices and practices and lead to a loss of culinary knowledge (Raine, 2005).

3.1.4. Nutritional quality of food aid

"*We wouldn't eat healthy at all if we lived off the food-bank food. Many foods commonly donated to – or bought by – food pantries are high in salt, sugar, and fat*" (comments of a food aid recipient, cited by McMillan, 2014, p. 79)

A number of studies have been done on the nutritional quality[41] of food aid offered in response to food insecurity in Canada and other industrialized countries. Most of those that we reviewed pertained to the aid offered by urban food banks, and a few looked at the nutritional quality of meals offered or prepared by other food aid structures (e.g. homeless shelters and community kitchens).

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[40] Food literacy can be broadly defined as food-related knowledge, attitudes, and skills. It refers to an individual's ability to select and purchase nutritious foods and meals, safely store and prepare foods, interpret food labels and claims, and plan and budget for meals. (Conference Board of Canada, 2013b).

[41] The term "nutritional quality" is defined in section 1.5.2 and in Appendix A on food security terminology. In this report, the terms "foods of good nutritional quality" and "nutritious foods" are used synonymously. However, we prefer the first term to the second. Since all foods have some nutritional value, they are all "nutritious" to some extent, but they are not all of good nutritional quality

These studies reflect growing concerns about the ability of food aid to meet the nutritional requirements of beneficiaries (e.g. Irwin *et al.*, 2007). This is a critical issue in Canada because many people depend on such aid as their main food supply source, whereas aid structures like food banks, although still the most common solution to food insecurity, were not designed to provide long-term aid or to be a main food source. Questions are being asked about their effectiveness in responding to chronic food insecurity (Loopstra and Tarasuk, 2012; McIntyre, 2011; Power, 2011; Tarasuk, 2001). A number of organizations, advocacy groups, and members of the scientific community are worried about this situation because food aid of sub-optimal quality could undermine the health of beneficiaries (York Region Food Network, 2013; Dinour *et al.*, 2007). Beneficiaries have expressed concerns about this as well (Côté, 2007; Verpy *et al.*, 2003; Hamelin *et al.*, 2002).

According to a study concerning a food bank in Ontario that assessed the content of 180 food boxes[42] meant to last for three days per person, 99% of the boxes did not make it possible to meet energy and nutrient needs for three days, particularly with respect to a number of vitamins and minerals – vitamins C, D, and A, folic acid, vitamin B_{12}, calcium, magnesium, and zinc – of which the "Vegetables and Fruit", "Milk Products", and "Meat and Alternatives" food groups are abundant sources (Irwin *et al.*, 2007). For these three food groups, the number of daily servings that an average food box could provide were below the recommendations in Canada's Food Guide.[43] The total amount of carbohydrates exceeded the nutritional recommendation, contrary to protein and lipids. Another study, which concerned 18 programs offering food boxes in Ontario, showed that a significant proportion of the boxes evaluated (n=85) did not make it possible to meet the daily nutritional requirements for a number of vitamins and minerals: the proportions were the highest for vitamins A and D, calcium, and zinc, followed by vitamins C, folic acid, and magnesium, which demonstrated the limited quantities of fresh vegetables and milk products, as well as the predominance of processed foods in the boxes (Teron and Tarasuk, 1999).

In British Columbia, the findings of a study of a food store that supplied food boxes to food banks were similar: for grain products, almost all refined (e.g. dehydrated noodle soups, pasta, canned pasta meals, soda crackers), the number of daily servings exceeded the Food Guide's recommendation. For the other three Food Guide groups, the boxes evaluated (n=5) did not provide the recommended number of servings, resulting in insufficient amounts of dietary fibre, vitamins A, C, and D, calcium, and zinc (Bunney, 2006)

A study concerning a large community organization in Quebec also showed that the content of the boxes made it possible to meet the quantitative recommendations (number of servings) for grain products but not for milk products. For vegetables and fruit and meats and alternatives, the number of servings varied greatly. The nutrients that fell short of quantitative requirements most often were vitamins A and D and calcium (Starkey, 1994). In New Brunswick, a study of one food bank showed that the boxes evaluated (n=50) contained no fresh fruits and vegetables, no red meat, chicken or fish, and no milk products except powdered milk, the quantity of which was adjusted to reflect the presence of children or a pregnant woman. When fresh vegetables and fruit were available, they were given only to pregnant women (Villalon, 1998).

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[42] In this report, the term "food box" is synonymous with "basket" or "food package" used in other studies.

[43] The 1997 version of Canada's Food Guide was used in the studies reviewed in Canada. In the revised version of the Food Guide (2007, then 2011), the recommended number of servings of vegetables and fruit was increased and that for grain products was decreased. On the basis of the revised recommendations, the mismatches concerning the quantities of vegetables and fruit (too low) and grain products (too high) in the food boxes are even more pronounced.

An American study on food aid distributed by the Oregon Food Bank, estimated to be in the millions of pounds per year (M), showed the strong predominance of grain products (10.02 M), meat and legumes (9.99 M), and vegetables (10.25 M), compared with fruit (5.85 M) and milk products (5.95 M). Sixty-six percent (66%) of the foods distributed belonged to one of the four food groups. The other food items (34%) belonged to the categories “condiments/baking supplies” (7%), “discretionary calories” (8%), “combination foods” (8%), and “variety/unknown” (11%) (Hoisington *et al.*, 2011).

A French study identified the characteristics of a food package that could be used as a nutritional reference (Darmon *et al.*, 2006b). This reference package or box meets nutritional recommendations, while being specific to food aid, because it puts priority on foods of good nutritional quality, such as fresh fruits and vegetables and fish, that food-insecure populations have trouble getting. That study established that, in comparison to this reference package, the food hampers and packages distributed by food aid structures in France were seriously lacking in fruits and vegetables (10% of the package weight instead of the recommended 33%) and contained too many sweetened or salty products (9% versus 2%) and too many starches (grain products, potatoes, legumes), mostly refined (40% versus 15%) (Darmon *et al.*, 2006b). The study showed the need to improve the nutritional quality of food donations and suggested the dissemination of recommendations based on food weight in order to specify minimum or maximum proportions for groups and subgroups of foods defined to offer balanced food aid.

A study conducted in 20 cities in the United States analyzed the nutritional quality of meals offered to homeless people on the basis of visual observations (The Urban Institute, 1989). Variety, evaluated on the basis of the number of food groups represented in each meal, was satisfactory for lunch and supper, with more than 50% containing almost all the food groups, but less so for breakfast: only 28% contained almost all the food groups. In terms of nutrients, an average meal provided over 50% of the nutritional requirements of women and men for 7 of the 11 nutrients looked at: protein, vitamin C, thiamin, riboflavin, niacin, vitamin A, and phosphorus. For vitamin B_6, calcium, and magnesium, an average meal provided only 50% or less of the requirements. Iron met 70% of the requirement for men but only 39% of the requirement for women. The average calorie content per meal was 38% and 51% of the daily recommendation for men and women, respectively (The Urban Institute, 1989, cited by Strasser *et al.*, 1991).

With the exception of the study by Darmon *et al.* (2006b), the other studies reviewed did not analyze the level of sodium or omega-3 essential fatty acids, found abundantly in marine products. For sodium, the levels contained in the food boxes likely exceeded recommendations owing to the predominance of non-perishable processed foods in the boxes. These foods contribute greatly to excessive intake of sodium and insufficient intake of magnesium.

Overall, the studies reviewed indicate that the food aid provided by charitable organizations like food banks cannot meet the nutritional requirements of beneficiaries all on their own. Two main deficiencies are observed: lack of variety in the foods offered and a considerable imbalance characterized by the predominance of non-perishable, highly processed foods at the expense of fresh or relatively unprocessed foods, which are often more costly to obtain and/or conserve. The result is that the aid provided is generally deficient in a number of essential nutrients (vitamins, minerals, dietary fibre mostly) and excessive in others (digestible carbohydrates, sodium).

This imbalance is not unique to food aid. It also characterizes the dietary intake of Canadians in general (Garriguet, 2007a, 2007b). However, the situation could be exacerbated by food aid that seems to accentuate the deficiencies observed in the general population. The studies available

clearly show the nutritional limitations of food aid. Consequently, unless it is complemented by other foods and/or other forms of aid in the medium and long terms, food aid does not currently meet all the nutritional requirements of people in good health. Furthermore, it is likely to worsen the health status of people who are overweight or have diagnosed or undiagnosed health problems (e.g. prediabetes, hypertension, hyperlipidemia, osteoporosis, depression).

Nutrient intakes and nutritional status of people using food aid

Two studies, one in Alberta (Fano *et al.*, 2004), the other in the cities of Montreal, Saskatoon, and Toronto (Engler-Stringer and Berenbaum, 2006, 2007), involving users of community kitchens, also called collective kitchens, noted that this form of aid made it possible to increase the variety of foods eaten by the participants, by enabling them to add fresh vegetables to a diet that normally consisted of non-perishable goods. In the study by Fano *et al.* (2004), the percentage of participants (n=79) who reported consuming at least five fruit and vegetable servings per day rose to 47% after they joined a community kitchen program, compared with 29% before. In the second study, the participants said they appreciated the higher quality of meals the community kitchen enabled them to prepare, compared with the foods of lesser quality they had previously received from food banks (Engler-Stringer and Berenbaum, 2007). That study also indicated that only programs making it possible to prepare more than 5% of a household's meals per month resulted in sufficient savings to improve the household's food security.

An assessment of nutrient intakes of people (n=50, mostly single mothers) receiving food hampers from a New Brunswick food bank showed that their overall average daily intakes were adequate during the first week of the month for the nutrients analyzed (protein, vitamin C, thiamin, riboflavin, calcium, iron). For vitamin C, thiamin, and riboflavin, the estimated intakes even exceeded the recommendation. During the fourth week of the month, energy and calcium intakes were lower and represented only 76% and 64%, respectively, of the recommended intakes (Villalon, 1998).

In Quebec, a study of food bank users (n=428) in an urban centre showed that their average daily intakes met or exceeded the levels recommended in Canada's Food Guide for grain products and meat and alternatives but not those for milk products. Women aged 18 to 49 were not consuming the recommended number of vegetable and fruit servings (Starkey and Kuhnlein, 2000). The authors noted that these nutrient intakes were no worse overall that those of the Quebec general population, although intake of milk products was lower. Also, the variability in number of servings (and, as a result, in estimated nutrient intakes) was very high, reflecting the sometimes very low intakes of certain beneficiaries. According to the same study, average energy intakes by age category, men and women, were comparable to those of food-secure people. Macronutrient intake was stable throughout the month (Starkey *et al.*, 1999). For all age categories, men and women, mean intakes of vitamin A, calcium, and zinc were below recommended levels. The subjects that used a food bank the most often had the lowest intakes of protein, vitamin C, folic acid, calcium, magnesium, and zinc, compared with other beneficiaries, owing to limited distribution of fresh vegetables and fruit and meat by food aid organizations. Intakes of thiamin, vitamin C, folic acid, and iron were negatively correlated with household size. Intakes of vitamin A, vitamin C, and folic acid were positively associated with education level. Vitamin C and folic acid were positively associated with country of birth. Subjects who smoked had lower intakes of protein, thiamin, vitamin C, folic acid, and iron (Starkey *et al.*, 1999).

According to the national data in the 2004 Canadian Community Health Survey (CCHS), food insecurity in Canadian households (all not receiving food aid) accentuates the prevalence of

inadequate intakes of protein, vitamin A, thiamin, riboflavin, vitamin B_6, folic acid, vitamin B_{12}, magnesium, phosphorus, and zinc in adults and adolescents. These inadequate intakes exist as well for the food-secure population, but they are amplified by food insecurity (Kirkpatrick and Tarasuk, 2008).

In France, a national study, the Abena study, was carried out in 2004-2005 and then again in 2011-2012, at the request of the Secrétariat d'état à la lutte contre l'exclusion as part of the nutrition and integration plan (2003), in response to the desire of food aid organizations to get to know their clients better in order to adapt the aid provided with a view to increasing the number of meals and food items distributed. The objectives were to describe the socio-demographic profiles, eating habits, and nutritional status (corpulence, blood pressure, biological markers) of recipients of food aid provided in various forms: food hampers, meals, food shelves, vouchers, cheques and/or refunds. The purpose of the 2011-2012 study was to update knowledge and describe changes since 2004-2005 (Grange *et al.*, 2013a, 2013b). It showed that intakes of fruits and vegetables and milk products remained under recommended levels. A significant proportion of the participants depended on food aid to procure food, and for some foods, that aid was the only source of supply. Their nutritional status showed elevated rates of nutrition-related pathologies: obesity, high blood pressure, diabetes, and certain vitamin deficiencies. The prevalence of the risk for folate deficiencies was 27.2%, with no difference according to sex. Beta-carotene and retinol (vitamin A) deficiencies affected 26.6% and 15.1% of the subjects, respectively. The prevalence of severe vitamin-D deficiency was 45.9%, and 98.2% of subjects were deficient in this vitamin. Anemia (low hemoglobin level) and iron-deficiency anemia (associated with depletion of iron reserves) affected 7.2% and 3.8% of the subjects, respectively, with higher prevalences (9.9% and 5.9%) in women (Grange *et al.*, 2013).

The 2004-2005 results showed that prevalences of obesity, overweight, and hypertension had increased. In men, the prevalence of hypertriglyceridemia had increased as well. The risk for folate and beta-carotene deficiencies remained stable. For vitamin A, a significant increase in retinol deficiency was observed, particularly in women. The prevalence of anemia and iron-deficiency anemia and severe vitamin-D deficiency had decreased, mostly in women, but, in men, the prevalence of iron deficiency and iron-deficiency anemia had increased (Grange *et al.*, 2013, 2013b).

Although food aid is not necessarily the main cause of the inadequate nutrient intakes (too low for certain nutrients, too high for others) observed in these studies, it may contribute to them because its nutritional quality is generally sub-optimal. This is a worrisome situation because it traps food aid recipients in a vicious circle of sub-optimal nutrient intakes associated with the development of a number of chronic health problems, including obesity, hypertension, type 2 diabetes, cardiovascular disease, osteoporosis, depression, and other mental health problems. For women, food insecurity is also associated with an increased risk for fetal malformations, including spina bifida, which is associated with folic acid deficiency during and before pregnancy (Carmichael *et al.*, 2007).

This is a worrisome situation when it comes to mental health problems as well because a number of nutritional factors are involved in their development, specifically insufficient intakes of essential omega-3 fatty acids, B-group vitamins (e.g. vitamin B_6, vitamin B_{12}, folic acid), and zinc (Rao *et al.*, 2008). The studies we reviewed indicate that the nutritional quality of foods offered as food aid is insufficient to provide adequate intakes of all these nutrients, particularly those that are abundant in fresh fruits and vegetables, whole grain cereal products, and fish and seafood.

Improving the nutritional quality of food aid and other foods available to food-insecure people: an imperative

The nutritional deficiencies of food aid can be explained in part by the fact that most organizations offering this aid are facing the same economic and structural constraints as their beneficiaries. Like them, they depend on donations and have problems, for example, obtaining and conserving food, fresh products in particular, which makes it difficult to improve the nutritional quality of the aid distributed. A study of 73 Canadian food banks showed that almost 90% of them could increase access to food and improve services within their communities by adding such basic resources as freezers and storage space (Kraft Foods, 2012). Of the food banks surveyed,

- 100% were facing capacity issues such as lack of storage space, food preparation facilities, cleaning equipment/supplies, and vehicles/transportation;
- 99% felt that, while most people are aware that food banks are in need of food donations, they may not be aware that they also have capacity needs (equipment, supplies, storage space, shelves, etc.;
- 85% reported that their food bank's capacity needs prevented them from serving everyone who needed help in their community.

Kraft Foods (2012) reports as well that over half of the banks in the "Kraft Food for Families" program said that, apart from food, their most urgent concern was lack of storage space, equipment, and supplies.

The nutritional deficiencies identified can also be explained by the fact that, historically, food aid organizations were meant to be temporary back-up solutions. From a short-term, back-up perspective, the nutritional quality of the foods distributed can be considered satisfactory. However, such is not the case if this aid is provided on a long-term basis and is the main source of food supply, which is true for many beneficiaries today in Canada.

The current imperative is therefore to adapt the food aid offered, with consideration given to the following two contextual trends:

(i) Ongoing and sometimes growing demand for food aid in the medium or long term; and
(ii)Increasing prevalence of nutrition-related chronic health problems.

In this context, improving the nutritional quality of food aid is essential, not only to improve the nutritional status of the people who receive it and to ensuring their nutrition security,[44] but also to lend credibility to the preventative nutrition messages intended for these people and for the general population.

To improve the nutritional quality of food aid, the overview of the situation provided in the previous section suggests some possible responses. We present a few of them here, and they are complementary. Their links to all of the community food security strategies, activities, and indicators are clearly shown in the conceptual categorization of McCullum *et al.* (2005) (Figure D1, Appendix D). These possible responses are echoed in a number of recent recommendations concerning food security/food insecurity, including those of the Heart & Stroke Foundation (2013) and the Public Health Agency of Canada (2011).

These indicate the relevance of models such as local agriculture (e.g. collective or community gardens, community supported agriculture, local markets, food co-ops, stores associated with local producers, mobile vending of fresh products, collective or community kitchens, and

[44] The difference between food security and nutrition security is explained in Appendix B.

community food centres for improving the nutritional quality of food aid in that they increase the availability and accessibility of fresh foods, as well as their use by and acceptability to beneficiaries. The establishment of community food centres and a number of initiatives supported by their national organization (Community Food Centres Canada, CFCC), such as Community Action, Community Gardens, Community Cooking, Drop-in Meals, and Healthy Food Bank, are examples of this approach. The Community Food Centres Canada has also adopted a strategy for evaluating the impact of community food centres.[45]

However, it should be kept in mind that most of these initiatives do not intend the causes of food insecurity, only the symptoms, and that the most disadvantaged people benefit from them relatively little (Bidwell, 2009; Engler-Stringer and Berenbaum, 2007; Power, 1999). The strengths and limitations of the main models for fighting against food insecurity in Canada and other countries were discussed by Bidwell (2009).

The possible responses presented below pertain specifically to improving the nutritional quality of food aid in Canada in general and in other countries (i.e. not only in New Brunswick). They are particularly important for improving the nutrition security of people experiencing food insecurity (see Appendix B and H).

#1. Increase the proportion of fresh or frozen products (vegetables and fruit, dairy products, fish) in food aid as well as in other foods available to people experiencing food insecurity; #2. Reduce the proportion of salty and sweetened products; #3 Increase the proportion of whole grain products.

For organizations like food banks that distribute food, specifications based on food weight that identify minimum or maximum proportions of each food group and subgroup to be included to ensure balanced food aid could help to improve nutritional quality (see study by Darmon *et al.*, 2006). For some nutrients like salt, establishing benchmarks might be a useful complementary measure. For example, the target could be for at least 50% of foods in food boxes to have a low or reduced salt content. These benchmarks could be used to evaluate actions aimed at improving the nutritional quality of foods available to food-insecure people.

With respect to donations and supplies from Food Banks Canada, the implementation of incentive, disincentive, and even coercive measures is also important in order to decrease donations of foods and beverages that are high in salt, sugar, or fat and to increase donations of foods of good nutritional quality (i.e. high nutrient density and low energy density). Setting benchmarks could help with that: for example, donations where 40%, 50%, or more of the foods are of good nutritional quality and donations where 40%, 50%, or more of the foods have a low or reduced salt content.

Establishing a simple point or classification system, such as the Food Report Card,[46] that gives foods a rating (e.g. a letter from A to D) based on nutritional quality (e.g. SAIN-LIM score) could be useful in more easily identifying foods of good/poor nutritional quality and helping to increase/decrease their proportion in food aid.

These suggestions are based on recommendations in several studies (e.g. Dinour *et al.*, 2007; Darmon *et al.*, 2006b), the Heart & Stroke Foundation (2013), and the Public Health Agency of Canada (2011) that noted the need to put more emphasis on nutritional quality in the context of food insecurity and food aid. Also, some mentioned that clear public policies on this need to be

[45] Community Food Centres Canada (CFCC). *Evaluation strategy.* http://cfccanada.ca/evaluation-strategy
[46] *Nonperishable Food Report Card.* Retrieved from http://pantryparatus.com/blog/nonperishable_food_report_card

established (e.g. Heart & Stroke Foundation, 2013; Loopstra and Tarasuk, 2012; Darmon, 2007; Kirkpatrick and Tarasuk, 2008) because good intentions are not enough ensure the quality of foods offered to disadvantaged people.

#4. Non-perishable goods: Increase the proportion of foods high in essential nutrients (vitamins, minerals, dietary fibre, protein, omega-3 essential fatty acids), with little added salt, sugar, or fat; for example, canned fish, powdered milk, 100% pure fruit juice, compotes and soups with a guaranteed vitamin content, vegetable or freeze-dried fruit purées, dried fruit, nuts and seeds, precooked dishes (vegetables/fish, vegetables/meat).

This strategy may be useful for implementing strategy #1 above concerning fresh or frozen products. Indeed, non-perishable foods may be better suited to the living conditions of beneficiaries and/or the operating conditions of food aid organizations that do not always have sufficient financial and material capacity to purchase and store fresh foods (Irwin *et al.*, 2007; Darmon *et al.*, 2006b). A certain amount of non-perishable foods must therefore be provided, but with priority on those having the best nutritional quality. Setting benchmarks for such foods would help increase their proportion in food aid.

#5. Implement nutrition awareness and education actions (food literacy) aimed at donors, volunteers, and beneficiaries.

Several studies (for example, Darmon *et al.*, 2006b; Verpy *et al.*, 2003) identified the need for nutrition education actions for those three audiences.
Awareness and education activities aimed at donors (individuals, businesses, Food Banks Canada) are important for increasing donations of foods of good nutritional quality (see recommendations #1 to #4 above). The use of a simple point system (e.g. Food Report Card) for categorizing foods according to their nutritional quality could be useful for donors, as could the use of food lists or practical guides specifying the nutritional qualities sought. These practical tools might encourage donations of good quality foods.

For beneficiaries, nutrition education and food literacy help to make these foods acceptable and accessible in terms of taste and preparation. The knowledge and skills to teach here are not only of a culinary and nutritional nature. They also include food budget management, time management (e.g. planning what groceries and other food supplies to buy, planning meal preparation), and how to take advantage of the food environment, even if it is not optimal (e.g. identifying affordable sources of foods of good nutritional quality [e.g. community-supported agriculture], and contributing to their development).

In terms of nutrition, it should be noted that a growing number of health officials are promoting anti-food insecurity initiatives that include the promotion of physical activity (e.g. Agence Régionale de Santé Midi-Pyrénées, 2014). The aim of this approach is to intensify obesity prevention and management among the food insecure, with emphasis on initiatives that include not only nutrition education, but also the promotion of physical activity.

#6. Make it easier for food aid organizations to access adequate infrastructures (premises, equipment) for transporting, preparing, and storing fresh products safely.

Ensuring a stable supply of fresh fruits and vegetables and other perishable foodstuffs is often a considerable challenge for charitable organizations. Financial and management constraints coupled with a lack of adequate infrastructures (premises, equipment mainly) for storing these foodstuffs (Kraft Foods, 2012) often explain why these items are under-represented in the aid distributed (Irwin *et al.*, 2007; Darmon *et al.*, 2006b) or are lacking freshness (Teron and Tarasuk,

1999). To increase the proportion and quality of the fresh products distributed, it is therefore important to increase the capacity of food aid organizations for storing and handling perishable goods, such as by facilitating access to the following resources: freezers, refrigerators, storage space, food preparation facilities, cleaning equipment and supplies, and delivery vehicles.

#7. Implement programs to help purchase fresh products of good nutritional quality (fresh vegetables and fruit, dairy products, fish in particular).

Programs to help purchase fresh products of good nutritional quality are an approach that has been used successfully to improve access to such products, particularly fresh fruits and vegetables (e.g. British Columbia Ministry of Health, 2011; Herman *et al.*, 2006; Dollahite *et al.*, 2005; McCullum *et al.*, 2005). This type of help, which can take the form of food vouchers/coupons or refunds, makes it possible to increase the food budgets of food-insecure individuals or households.

British Columbia, for instance, implemented the Farmers' Market Nutrition Coupon Program to increase access by people with a low income to fruits and vegetables and other locally produced foods (Epp, 2011).[47] This program, an initiative of the Association of Farmers' Markets in partnership with farmers markets and community organizations, who's supported financially by the provincial government (British Columbia Association of Farmers' Markets, 2013; British Columbia Ministry of Health, s.d.), is one of the promising practices of the province's Ministry of Health to support local agriculture and community food security[48] (British Columbia Ministry of Health, 2011). There is a program with similar objectives in the United States called the *Farmers Market Nutrition Program* – its results are presented in the article by Dollahite *et al.* (2005).

A similar program, bringing together the provincial government, agricultural producers and farmers' market associations, and other civil society organizations, could be developed in New Brunswick to increase access to the categories of foods that are often deficient in the nutritional intake of people experiencing food insecurity: mainly fresh fruits and vegetables, dairy products, and seafood products. To break the vicious circle of food insecurity and the nutritional imbalances that contribute to the development of a number of chronic health problems, it is important, as noted by Dinour *et al.* (2007), that these aid programs be used solely for the purchase of foods of good nutritional quality and accompanied by nutrition education actions (see recommendation #5).

#8. Adopt one or more policies designed to improve access to foods of good nutritional quality for disadvantaged populations or groups.

The need to establish clear public policies for fighting more effectively against food insecurity in Canada was identified by a number of researchers and organizations (e.g. Heart & Stroke Foundation, 2013; Loopstra and Tarasuk, 2012; McIntyre, 2011; Kirkpatrick and Tarasuk, 2008). The goodwill demonstrated by civil society does a great deal to reduce food insecurity, but it is not enough to ensure sufficient aid from a qualitative and quantitative perspective, or to offer equitable access, without distinction as to income or socio-economic status, to foods of good quality. To ensure that disadvantaged people have access to these foods, appropriate policies must be implemented, along with a regulation, standards and/or appropriate incentives. These could be nutrition, food, agricultural, social and/or health policies.

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[47] This reference provides a scan of food security approaches developed by each province and territory in Canada.

[48] The other promising practices identified by this Ministry to support local agriculture and community food security are farmers' markets, mobile fruit and vegetable vending, Farm to School programs, urban agriculture, and gleaning programs (British Columbia Ministry of Health, 2011).

Agricultural, food, nutrition and/or health policies have an impact on the availability of foods of varying nutritional quality at an affordable price. They may, for example, promote the sale of and access to foods of good nutritional quality in disadvantaged or remote neighborhoods; limit the sale of and access to cheap food of poor nutritional quality, including fast food and junk food, in these neighborhoods; limit the proportion of foods of poor nutritional quality in food aid; or limit advertising of foods of poor nutritional quality.

When it comes to nutrition or food policies, it is vital to set benchmarks and standards for certain categories of foods and certain nutrients (see recommendations #1 to #4) in order to correct the significant nutritional deficiencies that characterize food aid and the nutritional intakes of people experiencing food insecurity. In all cases, setting appropriate, mandatory nutrition standards might be useful for improving the nutritional quality of food aid and foods offered to people experiencing food insecurity.

#9. Assure better integration and coordination of the different plans or frameworks aimed at increasing access to foods of good nutritional quality, and ensure that the impacts are evaluated.

The Canadian health system in general suffers from a lack of integration, and this weakness is also present in initiatives concerning food security and food insecurity and in existing policies. There is still a shortage of policies that address food insecurity/food security, poverty, agriculture, and health in a concerted manner (Heart & Stroke Foundation, 2013; Epp, 2009). From a strategic and operational standpoint, it would be important to specify how the various strategies and frameworks for action that already exist (e.g. in New Brunswick, *The Public Health Nutrition Framework for Action 2012-2016*, the *Federal, Provincial and Territorial Framework for Action to Promote Healthy Weights*, *Wellness Strategy, Economic and Social Inclusion Plan*) will result in synergistic actions for improving the nutritional quality of foods and their accessibility to the population as a whole.

One of the policy priorities of the *Framework for Action to Promote Healthy Weights* is "Looking at ways to increase the availability and accessibility of nutritious foods." One of the recommendations in this framework is to "Support actions to improve the availability and accessibility of nutritious foods in urban, rural, remote and northern communities, particularly among vulnerable populations" (Public Health Agency of Canada, 2010, 2011). But the measures taken to achieve this goal have not been clearly established, nor have the responsibilities and level of engagement of the different stakeholders, particularly those in the food system, in terms of achieving goals that have been set. Since food aid is an integral part of this system and the food environment that contributes to the obesity epidemic (adults and children), it would be a good idea to define more clearly the measures that will be taken to ensure that this aid contributes more to the strategies proposed by the government. Public health strategies all assume **stable (rather than occasional) access to foods of good nutritional quality**. It would therefore be logical for widespread, consistent, and strong measures to be taken in this regard, including the elimination of unfair competition with foods of low nutritional value. It would also be necessary to specify the roles and responsibilities of the various stakeholders (government officials, civil society organizations, industry) when it comes to achieving the anticipated nutritional security[49] and public health results.

A number of researchers have looked at the role played by food aid in the development of obesity and other common health problems. The conceptual framework proposed by Dinour *et al.* (2007) (Figure D2, Appendix D) is interesting because it looks at this role from two angles: the aggravating

[49] See Appendix B.

role and the preventive role. To ensure the predominance of the second, these authors are among those who have noted the importance of reforming the food aid provided by focusing on better nutritional quality, i.e. moving away from foods with a high energy density. This conceptual framework is also interesting because it associates two public health problems (food insecurity and obesity) that are often looked at separately. To reverse the obesity trend among people experiencing food insecurity, Dinour *et al.*, (2007) also noted the importance of evaluating the food insecurity-related programs that are offered, including nutrition education programs.

In New Brunswick, an umbrella leadership structure could be put in place to coordinate the efforts of the various stakeholders and sectors more efficiently (government, food and agriculture industry, civil society). At present, there is a lack of integration and focus, and results do not always meet expectations in the areas of food security and public health. Developing a concerted food policy and/or provincial food security reference framework might facilitate cooperation and help in coordinating intersectoral and intergovernmental actions. Two provinces have developed interesting approaches to this: Quebec, with its *Cadre de référence en matière de sécurité alimentaire* (Gouvernement du Québec, 2008), and British Columbia, with the *Food Security Core Program* (Government of British Columbia, 2006) and some very interesting practical and operational documents[50].Their approaches explain the roles of food security partners, specifically that of the Ministry of Health with respect to coordination, assistance, and financial support, practical guides for community stakeholders (Watson, 2013; Kalina, 2001), and Food Policy Councils. These initiatives, along with all of the food security approaches developed by the provinces and territories, were reviewed by Epp (2011, 2009). According to Epp (2011, 2009), British Columbia may be the province that has been most successful so far in elaborating approaches that address food security, poverty, health, agriculture, and the environment.[51]

#10. Ensure regular evaluation of strategies, programs, actions, activities, and services aimed at improving the availability and accessibility of foods of good nutritional quality, and ensure dissemination of the results and sharing of knowledge.

The need to pay greater attention to the evaluation of these actions and to the dissemination of the results has been noted in a number of studies (e.g. British Columbia Ministry of Health, 2011; Dinour *et al.*, 2007; Government of British Columbia, 2006). It is important that this evaluation be done within the overall framework of food security, health, and poverty reduction, which assumes better integration of initiatives: policies, strategies, programs, etc. (recommendation #9). These evaluations should include indicators concerning nutritional quality, diversity, and cost of the foods offered. The benchmarks proposed in previous recommendations #1 to #4 are possible indicators. Additional indicators were proposed by MacCullum *et al.* (2005, adapted by Dietitians of Canada, 2007). [52]

#11. Use food diversity indicators (qualitative diversity of foods distributed as food aid or otherwise accessible to people experiencing food insecurity, diversity of household food) to monitor actions aimed at increasing food security.

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[50] See *Implementing Community Food Action in BC: Criteria for Success and the Role of the Health Sector* (Government of British Columbia, 2006) and *Implementing Food Security Indicators* (Government of British Columbia, 2010),

[51] About the role and the organization of food networks in that province and several others, see Levkoe *et al.* (2012), Perkins (1999), and Riches (1999).

[52] See also *Implementing Food Security Indicators* used in British Columbia (Government of British Columbia, Provincial Health Services Authority, 2010).

There is an association between food security and food diversity. Below a certain income, e.g. in an food insecurity situation, households maximize the energy density of their food using only a few staples, but their diet is not very diversified and has a low nutritional density. This combination (high energy density, low nutritional density) contributes to the rapid spread of obesity. It is only when income starts to exceed a certain level that households start to diversify their diet. This phenomenon is known as Bennett's law (Bennett, 1941). It is partly responsible for the social inequalities in health associated with diet.

A review of the recent literature on best practices for measuring food security concludes that, overall and compared with other categories of indicators, food diversity indicators are those that are most effective for evaluating food security and its corollaries (e.g. economic situation, malnutrition) (Heady and Ecker, 2013). These indicators are sensitive to crisis situations. We therefore often observe a decrease in the diversity of foods eaten when there is decrease in livelihood (e.g. a significant reduction in family income). They are also relatively inexpensive to measure.

#12. Continue advocacy actions promoting the right to a balanced diet for food-insecure people.

Advocacy actions reaffirming the universal right to a balanced diet are among the needs identified for improving the quality of foods available to food-insecure people in Canada (e.g. Dietitians of Canada, 2007; Bunney, 2006; Riches, 1009). These actions help to inform and raise awareness among the general public and policy makers. They are necessary because vulnerable individuals do not generally have the means or the influence required to assert their rights or be heard by government authorities, policy makers and legislators who establish the characteristics of the food supply. The implementation of food policy councils, such as those in Toronto, Kamloops, and Vancouver, contribute to political and advocacy work. In a three-tiered community food security continuum (McCullum *et al.*, 2005; Kalina, 2001) (Figure D1, Appendix D), these actions and the implementation of policies for correcting the structural problems that cause food insecurity are included in the actions in stage 3. Actions in stages 1 and 2 are assistance actions (relief of the symptoms of food insecurity) and capacity building, respectively. Movement towards the highest level measures progress with respect to food security.

3.1.5. Food aid safety

All parties involved have many concerns about the safety[53] of foods distributed as food aid (Inman, 2013; Hamelin *et al.*, 2002, Health Canada, 1999; Kennedy *et al.*, 1992). In addition to the risks inherent in food and food handling (e.g. contamination, storage at improper temperatures), there are risks associated with beneficiaries who may be more vulnerable to the risks of food poisoning owing to age (e.g. children, seniors) or pregnancy or to health status (e.g. people with one or more chronic diseases, nutritional deficiencies, or a weakened immune system) (BC Centre for Disease Control, 2006a). The literature indicates that the health status of people experiencing food security is not as good as that of the general population (Grange *et al.*, 2013a, 2013b; Haering and Syed, 2009). For food banks that do not prepare or serve food, the risks are greater for perishable items (e.g. dairy products, eggs, frozen meat, fresh or frozen fruits and vegetables, bread), which make up about 38% of the food distributed by these establishments in Canada (Food Banks Canada, 2013). For all food aid organizations, limited resources (sometimes insufficient quantities of food available, lack of certified premises or adequate equipment, limited number of volunteers with food hygiene and safety training) are other factors that accentuate the risks because, when resources are scarce, organizations must juggle two sometimes contradictory objectives, i.e.

[53] The term "food safety" is defined in section 1.5.2 and in Appendix A.

distributing as much food as possible and offering food that is healthy and safe, which is not always easy.

Few studies have looked at safety in the context of food aid, and published reports (e.g. inspection reports) are rare. It is therefore difficult to accurately assess the situation. A study done of food bank beneficiaries in the Toronto area to find out how they felt about the quantity, quality, and safety of the food distributed showed that most were willing to accept visibly substandard food as long as it was considered edible (Teron and Tarasuk, 1999). More than half said they had at some time received food they believed was unfit for consumption. Most said they had discarded it, but some had eaten it anyway, despite the known risk. This study also assessed the contents of the food hampers of 85 participants to note any visual damage to foods and the expiry dates of dairy products. Seventy-eight percent (78%) of the 85 hampers contained at least one damaged or outdated item. These foods accounted for 9% of all of the foods. Another study, conducted in Quebec with a group of people experiencing food insecurity, indicated that they were concerned mostly about the monotony of their diet, as well as the safety and freshness of the food they received and its lower nutritional value (Hamelin *et al.*, 2002). Similar concerns about food safety and freshness were reported in a study done with food shelf clients in an urban area of the United States (Verpy *et al.*, 2003).

Declared cases of food poisoning attributed to foods distributed by charitable organizations are quite rare, but documented. There might be other cases, for example individual cases that were never declared. In 2012, in Denver, United States, 60 people were hospitalized after eating a supper served by a homeless shelter, the largest case of food poisoning affecting this type of institution in the United States in 10 years. In 2010, 26 people got food poisoning after eating a meal served by a soup kitchen in Tennessee (Inman, 2013). In 2009, a soup kitchen in Connecticut was officially investigated after serving foods prepared by an unlicensed kitchen (*The Middletown Eye*, 2009). The issue of licensing is sometimes controversial because some charitable organizations say they could not operate if they had to rely solely on licensed premises and staff (*The Middletown Eye*, 2009; *Lawrence Journal World*, 2003).

According to Teron and Tarasuk (1999), the problems of food quality, which is often poor, and limited selection are not unique to certain food banks in particular: they are inherent in the nature of this secondary food system. This is one of the arguments used by those who, like Power (2011), think that food banks should be abolished. According to Teron and Tarasuk (1999), concerns about food aid safety have been compounded in Canada by the enactment in several provinces of "Good Samaritan" [54] laws, which provide that people who help others (this is the principle by which charitable food aid organizations operate when they appeal for donations) cannot be held responsible for damages their action may cause. This legal provision definitely does not encourage best practices in terms of food aid safety or nutritional quality, unless this aid is subject to mandatory regulations concerning safety and nutritional quality standards. Some regulations do exist pertaining to food aid safety and nutritional quality, but they are not very stringent.

Following the increase in the number of charitable food aid organizations in the 1990s, the regulations governing their activities were gradually tightened. In Canada, these organizations must comply with local health and safety regulations, which vary by province. The local authorities may be a health unit, a regional health authority, or a municipal or provincial agency or department that regulates the activities of the food facilities in the area (Health Canada, 1999). In

[54] See for example the *Charitable Donation of Food Act* of New Brunswick: https://www.gnb.ca/0062/acts/RS-2011/124.pdf

1999, Health Canada published guidelines for food safety in food banks. These guidelines do not apply to the other categories of food aid organizations (e.g. soup kitchens, collective kitchens) that process foods before they are eaten on the premises. They reflect the unique characteristics of food bank operations and the special issues characterizing their activity, in particular, the diversity of food supply sources, the fact that the place of origin and the duration of storage and storage conditions for foods are not always known (making it difficult to trace foods, which is important in ensuring their safety), and the significant turnover of staff and volunteers making it difficult to ensure adequate food hygiene and safety training for all staff (Health Canada, 1999).

These guidelines are meant to help food banks strike a good balance between quantity- and quality-related objectives concerning the food distributed. They are a reference tool for guiding food bank operations, and they direct these organizations to local authorities responsible for enforcing health and safety regulations in their community. They are complemented at the national level by the Safe Food Handling Program offered by Food Banks Canada. Developed with input from the food bank sector, the Canadian Food Inspection Agency, and the agri-food industry, this program is designed to ensure that food bank employees and volunteers take appropriate steps to safely handle the foods distributed (Food Banks Canada, n.d.). It provides information and resources concerning needs assessments and staff training.

At the provincial level, a number of provinces and municipalities have developed their own guidelines by adapting the national guidelines to provincial characteristics, including local regulations and local authorities. British Columbia has prepared separate guidelines for food banks (British Columbia Centre for Disease Control, 2006a) and soup kitchens (British Columbia Centre for Disease Control, 2006b). The municipality of Holton, Ontario (Halton Region, 2011) used the British Columbia document to prepare its own food bank guidelines. Alberta uses a document entitled *Guidelines for the Distribution of Donated Food* (Alberta Health Services, 2010). In Quebec, the *Guide d'application du règlement sur les aliments. Formation obligatoire en hygiène et salubrité alimentaires* (Gouvernement du Quebec, 2009) sets out the obligations of the various food aid establishments in the province. In New Brunswick, a Health Canada (1996) publication entitled *Building Collective Kitchens in New Brunswick* contains a short section on food safety.

In New Brunswick, food aid organizations have been subject to the *Food Premises Regulation* (Regulation 2009-138) under the *Public Health Act* (Government of New Brunswick, 2009b) only since 2009. This regulation sets out requirements for premises where food is processed, prepared, stored, handled, displayed, transported, sold or offered for sale, or all of the above (Government of New Brunswick, 2013a). It defines three classes of food premises licences. The premises of food aid organizations are included in Class 3 or 4. In Class 3 premises, which include food banks, there is no actual food preparation, while there is food preparation or processing in Class 4 premises, which include soup kitchens and collective kitchens. Under this new legislation, which is being implemented gradually, all food premises must be licensed. The sectors in which licences have not yet been implemented include Class 3 and 4 premises. Implementation dates vary between 2013 and 2014, depending on the public health risk, the resources available, and other limiting factors (Government of New Brunswick, 2013). One of the requirements of Regulation 2009-138 relates to the training and certification of food handlers: in Class 4 premises, when food is being prepared, there must always be at least two people, including the manager, with a food handling certificate. The Department of Health (Government of New Brunswick, Department of Health, 2012c) is responsible for inspecting food premises (Government of New Brunswick, 2013a).

3.1.6. Best practices in food security

What information can be extracted from the literature about best approaches or good practices, i.e. those that contribute to effective and/or promising actions for increasing food security? The literature reviews that we just presented indicate that a wide variety of coordinated actions must be taken simultaneously to increase food security in a sustainable manner. We demonstrated this in the preceding sections. It also appears that few evidence-based results are achieved with any particular action or type of actions, which is understandable since food security involves numerous and varied dimensions of diet and the food system (Gouvernement du Québec, 2008).

Effectiveness should therefore not be sought in any one particular type of action but rather in a combination of several actions (Gouvernement du Québec, 2008). These actions:

- Mobilize individuals, communities, and a number of activity sectors, both public and private;
- Improve living environments, living conditions, and livelihoods,[55] i.e. strengths and categories of capital (human, natural, financial, social, and physical/material) that people and communities can draw on to build capacity;
- Influence the food supply and improve it qualitatively and quantitatively;
- Have some influence over social, economic, agricultural, food, nutritional, health, and environmental policies;
- Provide people with knowledge, skills, and the capacity for independence.

It is therefore necessary to act in multiple, complementary ways that are mutually reinforcing if food security is to be improved in a sustainable manner. Furthermore, there is broad consensus that any solutions put in place will be more effective and have more impact if they arise from concerted actions, implemented at several levels, with the input (engagement) of numerous partners.

Acting on the individual and collective determinants of food security

The determinants of food security mirror the determinants of health: biological factors, socio-economic determinants, healthy environments and food, lifestyles and behaviours, and public policies and services. Any actions taken on these common determinants will have a greater chance of producing results if they are synergistic and continued over the long term, with focus on the following (Gouvernement du Québec, 2008, Figure 4 below):

- Physical and economic access to sufficient healthy foods, i.e. of good nutritional quality;
- Maintenance of buying power;
- Access to simple, reliable information for making informed choices;
- Personal knowledge and skills;
- A sustainable agri-food system.

To be effective, actions must address both the individual determinants and the collective determinants of food security. The first relate to the individual, the second to the community. The individual determinants of food security include income level, education, household composition (number of people, single parenthood), and belonging to a minority ethnic community. Collective determinants include aspects of the context that influence food security, specifically, the interpersonal and social environment; the physical environment, including the food environment; and public policies and services.

[55] On livelihoods, see Appendix C.

Actions must therefore not be centred solely on individuals. They must also have an impact on improving living environments and conditions, livelihoods, the food supply, and the implementation of public policies promoting food security.

Improving living environments includes setting up various food supply structures that offer foods of good nutritional quality at affordable prices, such as corner stores associated with local producers, mobile vending of fresh products, collective gardens, educational and collective kitchens, and fresh fruit and vegetable delivery services. Non-food actions are necessary as well, e.g. providing transportation to facilitate physical access to foods of good nutritional quality and regulating the sale and advertising of foods and restaurants that offer foods of poor nutritional quality. These actions are essential in establishing a food environment favourable to food security.

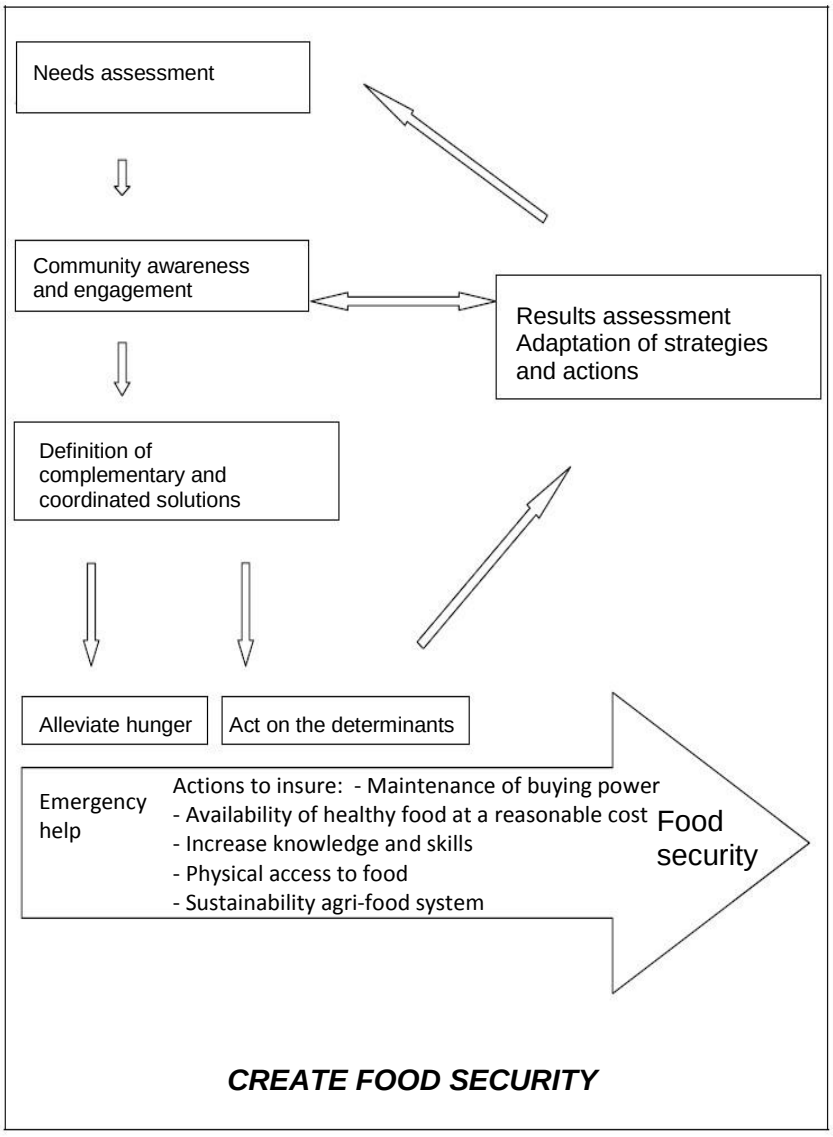


Figure 4. Overview of actions for achieving food security in a community
(Government of Quebec, 2008, p. 27)

Food aid (or support) versus food self-sufficiency

Effective food security action programs generally have two main components or categories of actions: food aid actions (emergency), intended to provide temporary food support, and actions intended to develop food self-sufficiency at different levels, from the individual to the collective (e.g. community, local, regional).

The level of effort to be directed at either of these categories varies and depends on needs. The challenge is finding a good balance between the levels of effort and the resources allocated to them, making it possible to achieve food security objectives and reduce poverty.

This distinction is important for programmatic action because these two categories of action do not have the same objectives or the same impacts even though they both contribute to food security. Aid actions provide temporary food support; they address the lack of food but have little impact on the determinants of food security and do not guarantee food security. In comparison, actions aimed at developing food self-sufficiency are long-term actions; they act on the determinants of food security and therefore contribute more to social and community development.

Both types of actions are necessary, but their development is not equally desirable. Although a food system must always have emergency food activities, these should be available on demand and be quite limited in number. When demand for this type of aid increases or becomes widespread, it is a sign of upstream problems, such as structural problems, that must be fixed if the root causes of food insecurity are to be addressed. Supporting food security initiatives targeting food autonomy and focusing on the determinants of food security means that an attempt is being made to address the root causes of food insecurity, whereas supporting food aid is treating only the symptoms. Consequently, the development of food aid and dependence on this type of aid should not be encouraged, especially since, in many cases, as indicated the literature reviewed, it is insufficient or inadequate for ensuring a balanced and varied diet.

For example, the Gouvernement du Québec[56] makes a clear distinction between the two categories of action in its latest *Cadre de référence en matière de sécurité alimentaire* (Gouvernement of Québec, 2008). The aim of this framework is to establish conditions favourable to a healthy diet that is accessible to everyone so as to improve community food security community through public health investments in this sector. It includes three objectives relating to food security:

1. Establish conditions favourable to the development of food security in the province;
2. Act on the determinants of food security;
3. Respond to emergency food needs;

That framework also includes three corresponding policy orientations:

1. The actions implemented must be in line with the community development strategy. Coordination and complementarity of initiatives are essential.
2. Seventy-five percent (75%) of the budgetary envelope for food security must be used to fund food self-sufficiency initiatives by targeting the determinants of food security.
3. The remaining 25% of the budget is to be used for emergency food activities.

[56] Along with Saskatchewan and Ontario, Quebec is one of the provinces with the lowest food insecurity rate in Canada. It no doubt has best practices and interesting approaches (e.g. Food security reference framework).

This framework clarifies the definition of food self-sufficiency: food self-sufficiency refers to the control that people and communities have over their food. It includes actions that promote an entire community's access to a healthy food supply from a sustainable development perspective (Gouvernement du Québec, 2008, p. 25).

It is based specifically on the following:

- An assessment of food support needs and interventions;
- Stakeholder cooperation and collaboration;
- Support for sustainable development projects;
- Community education and awareness.

Cooperation, coordination, integration, information and experience sharing, evaluation

Cooperation and coordination are part of a set of elements that make up the so-called "pragmatic" approach. Basically, this approach seeks to improve the quality of work in the field (Scholms, 2005), a concern that can be explained by the diversity and complexity of the factors and stakeholders influencing food security. Although the diversity of stakeholders and actions is a strength, it is also seen as a structural weakness that may limit the achievement of objectives or the impact of the actions that are carried out. Another structural weakness relates to the often limited ability of organizations to evaluate their own actions and analyze their results and the impact on social and community development.

Coordination of actions is therefore a central element of the pragmatic approach, along with the adoption of shared approaches and the development of mechanisms for cooperation and the exchange of information and analyses. These practices help to increase the coherence of actions.

Cooperation is important for promoting engagement (individual, collective, intersectoral), increasing the complementarity of actions, and developing synergies among those actions. It is important at all stages of the actions, the needs assessment, and the results assessment. It can be defined as a relatively formal voluntary decision-making process for sharing analyses of and solutions to recognized problems. It is used to bring together stakeholders who are seeking consensus on a shared problem in order to develop and implement, for example, economic and social strategies and policies (Institut national de santé publique, 2002). According to the Institut national de santé publique (2002), cooperation is one of five elements underpinning interventions centred on community development: citizen participation, empowerment, cooperation and partnership, reduction of inequalities, and harmonization and promotion of public policies favourable to health. In addition, numerous studies have looked at the impact of cooperation on social development.

Concerted intersectoral action helps to increase the coherence of actions, as well as their synergies and scope. This is a strategy known to be effective in health promotion (Jackson *et al*, 2006), and it should fully incorporate food security-related actions (Dietitians of Canada, 2005a, 2007). Such integration is particularly important for improving the nutrition security[57] of beneficiaries. It is essential, for example, to create linkages and synergies with priority public health initiatives and interventions, particularly those that target chronic disease prevention and management. In this field, the fight against the social inequalities in health (SIHs) should be one of the leading actions, with a focus on concerted actions targeting obesity prevention and management. Lack of integration, i.e. actions carried out in a compartmentalized manner, is to be avoided.

[57] On nutrition security, see Appendix B.

In the fight against food insecurity, it is vital to act on nutrition (diet and physical activity), for instance, by focusing on actions that combine improving food supply with nutritional education (food literacy) and actions that include promotion of physical activity, e.g. collection, gleaning, and gardening. With respect to the nutritional aspects of food security (prevention of malnutrition associated with food insecurity), better integration of actions concerning the health and food sectors should be targeted as well.

The evaluation must make it possible to incorporate the actions taken into an ongoing results improvement process, ensuring the development of food security. It must be seen as a tool for adapting actions to community needs, to evolving contextual elements, and to the effectiveness of the actions in place. It is essential for refocusing the action in order to achieve the desired results. It should not be carried out in isolation but rather should contribute to the sharing of experiences, information, and analyses. Indeed, we cannot under-estimate the importance of such sharing for strengthening the foundation for future action and supporting awareness and engagement in the long term.

Figure 4 illustrates how these elements interact in the food security development process within a community (MSSS, 2008).

Policies favourable to food security

A complement to the pragmatic approach, the political approach (or politicization) gives a political orientation to the actions undertaken. The promoters of this approach believe that actions for developing food security and reducing poverty need political weight to achieve their goals.

These goals cannot truly be achieved unless they become a social project that has a number of similarities with the social and community development projects with which it is often associated. The social and collaborative economy often plays a major role in such projects, but this role remains under-valued compared with other economic actions and rarely receives legal recognition, which is the case in New Brunswick (Forgues *et al.*, 2002).

Political action therefore helps to reestablish a context favourable to the development of food security. Political engagement, action, and leadership are important not only for achieving food security goals and reducing poverty, but also for consolidating what has already been achieved. For instance, harmonizing public policies favourable to food security in different sectors may promote cooperation and improve coherence and targeting of actions. It may also increase the scope and impact of actions by facilitating the implementation of effective systemic or structural measures.

Combining the two approaches – pragmatic and political – may therefore be a powerful lever for action aimed at increasing food security.

According to Barrett (2010, p. 827),

The greatest food security gains typically come not directly from feeding programs, but rather indirectly, through policies that promote poverty reduction through employment creation and productivity growth among the poor, as well as safety nets to safeguard the vulnerable non poor.

Enhanced control over productive assets and access to the technologies and markets necessary to sustainably use them to generate a stable livelihood are especially crucial to reducing vulnerability to food insecurity and facilitating the escape from poverty traps.

The viability of the actions taken, particularly their contribution to sustainable development, should also be incorporated into these policies. As noted by the Department of Health and Social Services (Gouvernement du Québec, 2008, p. 32), the search for sustainable solutions for building food security must allow actions undertaken in recent years to continue, while incorporating into them emergency food solutions and solutions designed with a view to a sustainable agri-food system.

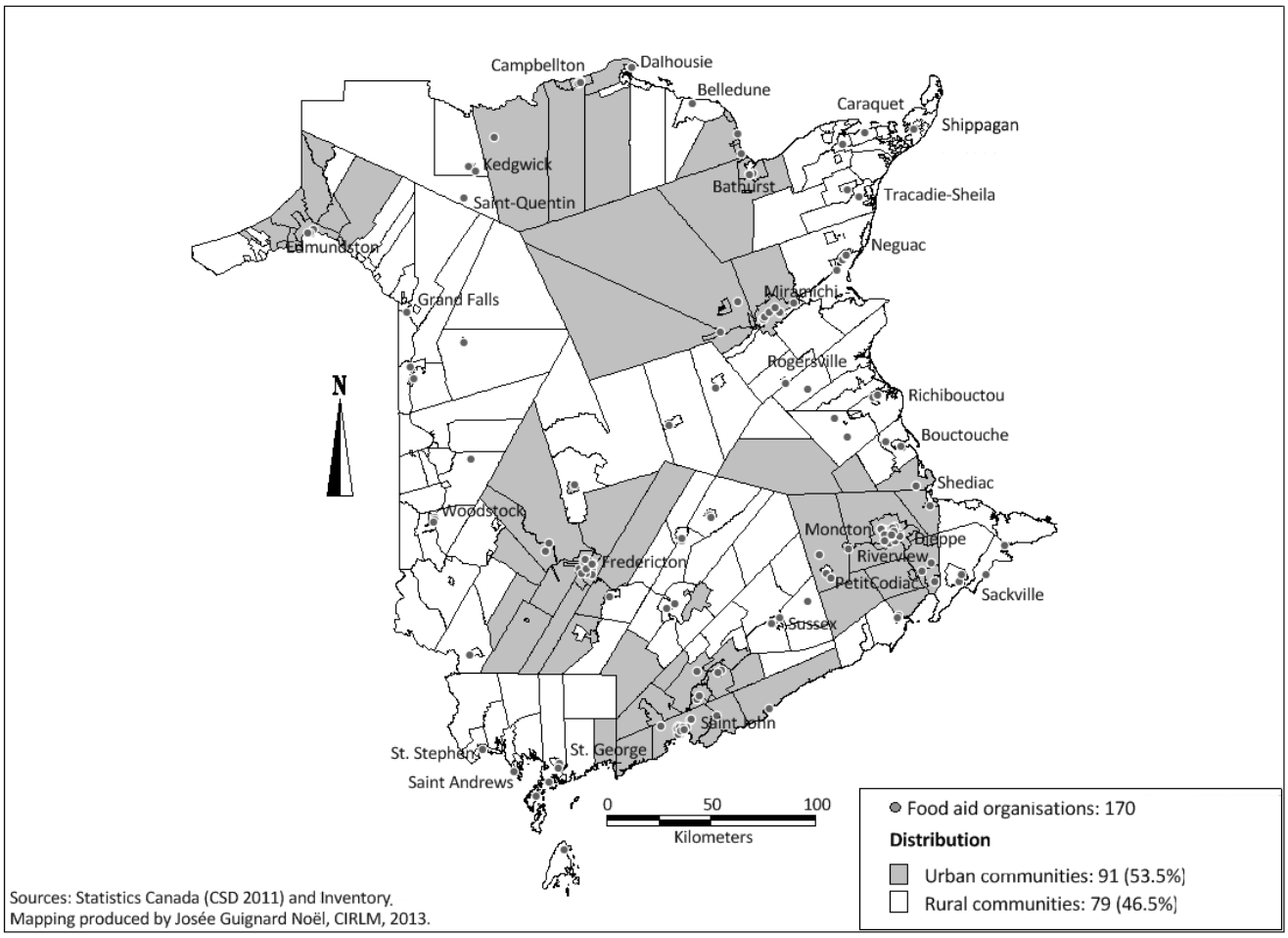
Indicators for measuring food security

Reliable, relevant indicators are essential for monitoring food insecurity, evaluating the effectiveness of actions taken, and tracking the evolution of food security. A review of recent literature on best practices for measuring food security shows that, compared with other classes of indicators, dietary diversity indicators are generally the most effective for evaluating food security and its corollaries (e.g. economic status, malnutrition) (Heady and Ecker, 2013), and they are sensitive to shocks. We therefore often see a decline in the diversity or variety of foods consumed when there is a reduction in livelihood (e.g. decrease in family income). They are also relatively cheap to measure.

3.2. PORTRAIT OF FOOD SECURITY ORGANIZATIONS AND FOOD OUTLETS

This results section provides an initial portrait of food security in New Brunswick. It is based on two inventories that were used, first, to identify the various community-based food security organizations, initiatives, and measures and, second, to identify the chief food outlets in the province. In order to summarize and illustrate our results, we present them on maps of the province.

The first inventory enabled us to identify 170 organizations and initiatives engaged in food aid or food security activities in New Brunswick. Map 1 shows that the organizations were distributed across the province. However, there were slightly more of them in urban communities (53.5%) than in rural communities (46.5%), just like the distribution of the population.

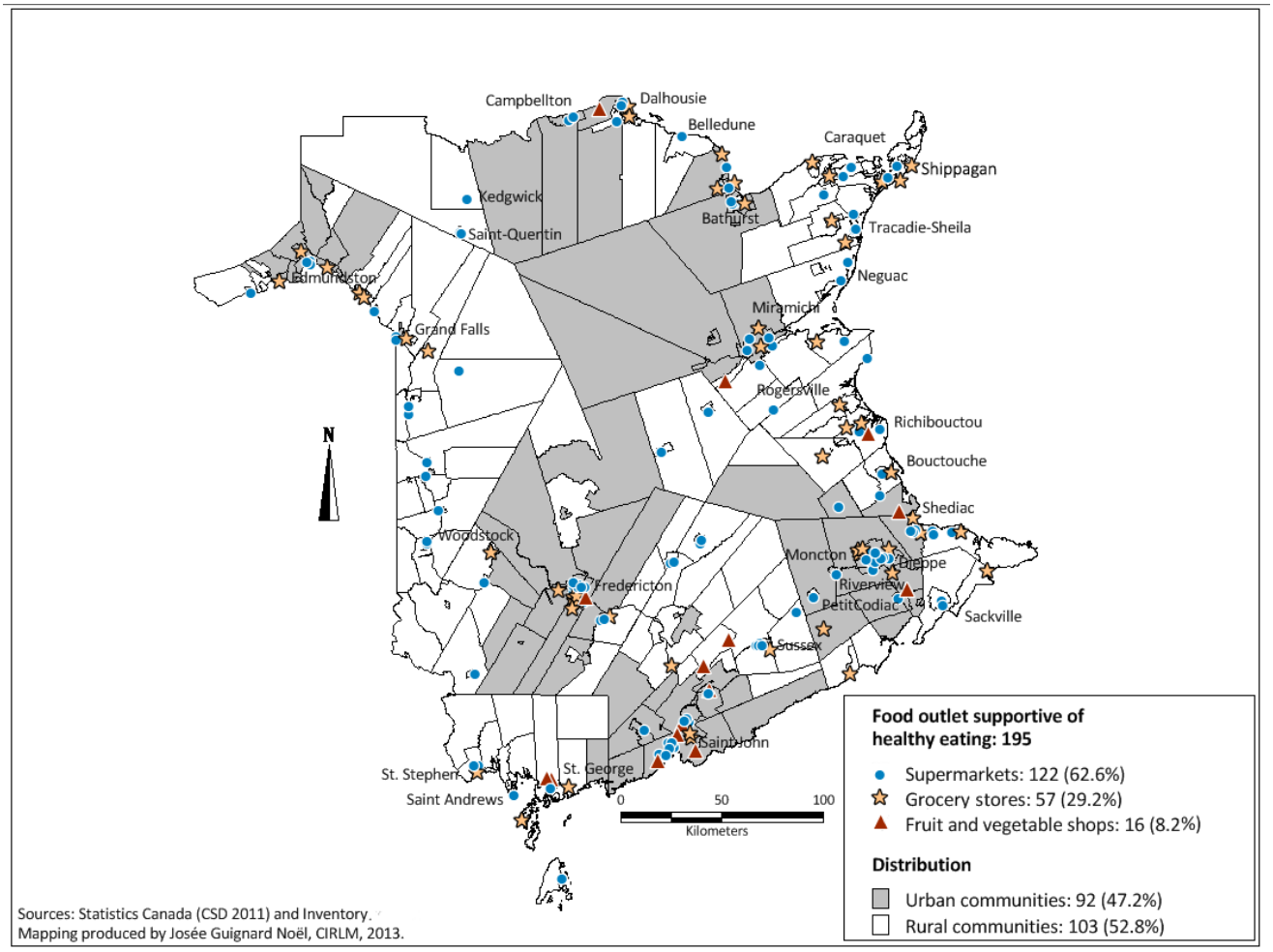


Map 1. Food aid organizations by urban and rural communities, New Brunswick, 2013

Almost half of the organizations were therefore located in rural areas (46.5%), where they are farther away from centres and clearly farther away from one another. This greater distance suggests more travel and less access in rural areas. In urban areas, the organizations are closer together geographically in large cities, such as Moncton, Saint John, and Fredericton, but also in Miramichi and Bathurst.

Our portrait of food security in the province was therefore concerned with the first aspect of food accessibility: the availability of food sources, which refers to the number and type of food outlets and restaurants in a given region (Robitaille and Bergeron, 2013, p. 4).

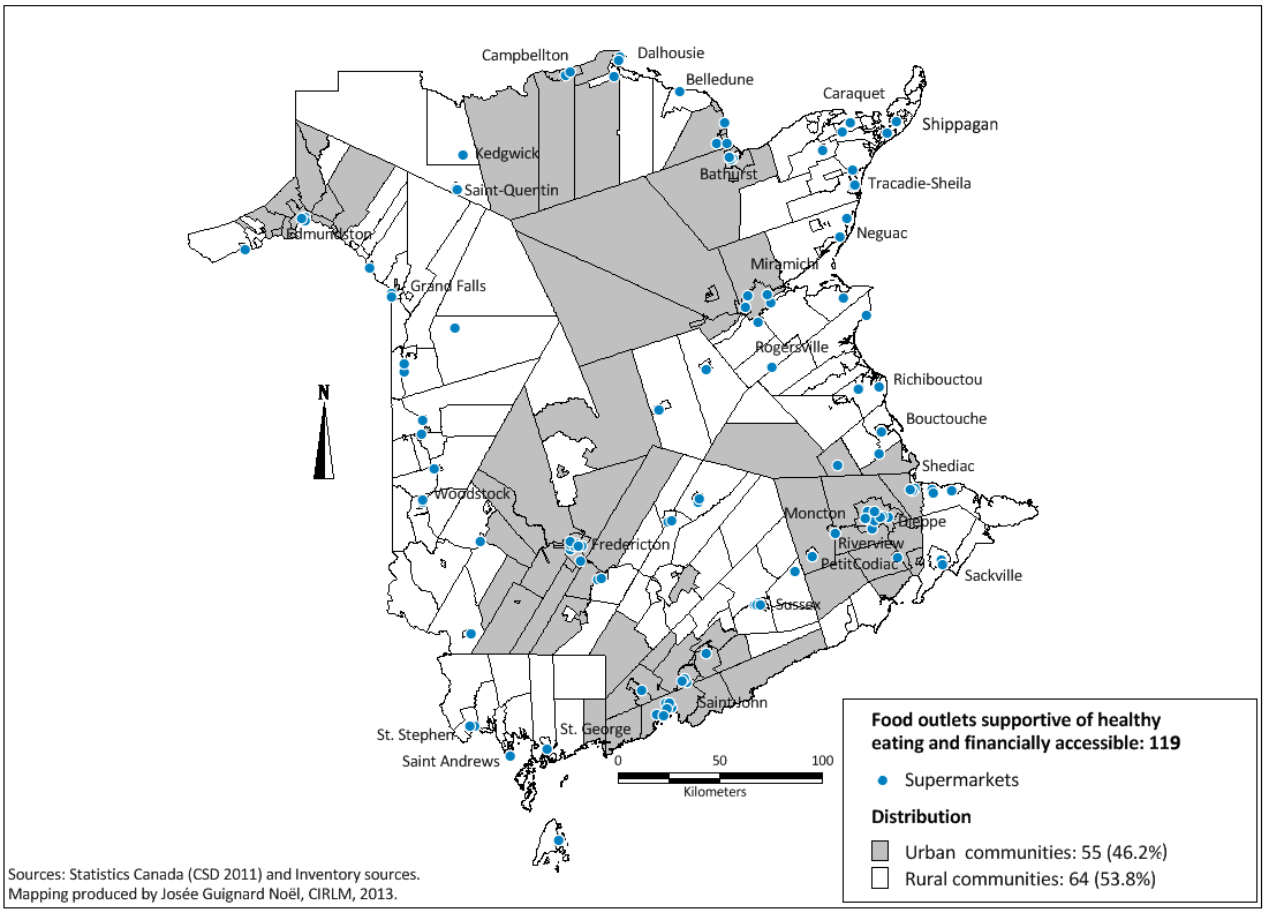
The second inventory enabled us to identify 408 food outlets in New Brunswick. Of that number, only 195 were considered sources of food supportive of healthy eating (Robitaille and Bergeron, 2013), or about half (47.8%) of the province's food outlets. For the purposes of this study, there are basically 122 supermarkets (62.6%), 57 grocery stores (29.2%), and 16 fruit and vegetable shops (8.2%). Note that restaurants could not be included, given how difficult it is to identify those that offer foods supportive of healthy eating.



Map 2. Food outlets supportive of healthy eating by type and distribution in rural and urban communities, New Brunswick, 2013

Map 2 shows the location of the three types of food outlets supportive of healthy eating and their distribution within urban and rural communities. Supermarkets (in blue) have a strong presence in urban areas but are also found in rural areas. Grocery stores (in yellow) are found in urban areas although mainly in rural areas, and along the province's coastline in particular. Fruit and vegetable shops (in red) are present in urban areas (Fredericton, Saint John, and other urban areas), with few in rural areas. Last of all, food outlets supportive of healthy eating were slightly more present in rural areas (52.8%) than in urban ones (47.2%), the opposite of the rural (47.5%) and urban (52.5%) distribution of the province's population (Statistics Canada, 2012b, Census, 2011).

In order also to take into account the economic accessibility dimension in food accessibility, we then refocused the analysis, keeping only food outlets supportive of healthy eating but also affordable. Certain locations offer less availability of sources of healthy, quality foods at affordable prices, such as supermarkets, and have a larger concentration of convenience stores, fast-food restaurants, and other food source less supportive of healthy eating. This is what we wanted to check by doing a brief examination of the distribution of supermarkets, for want of anything better, in urban and rural settings across the province of New Brunswick.

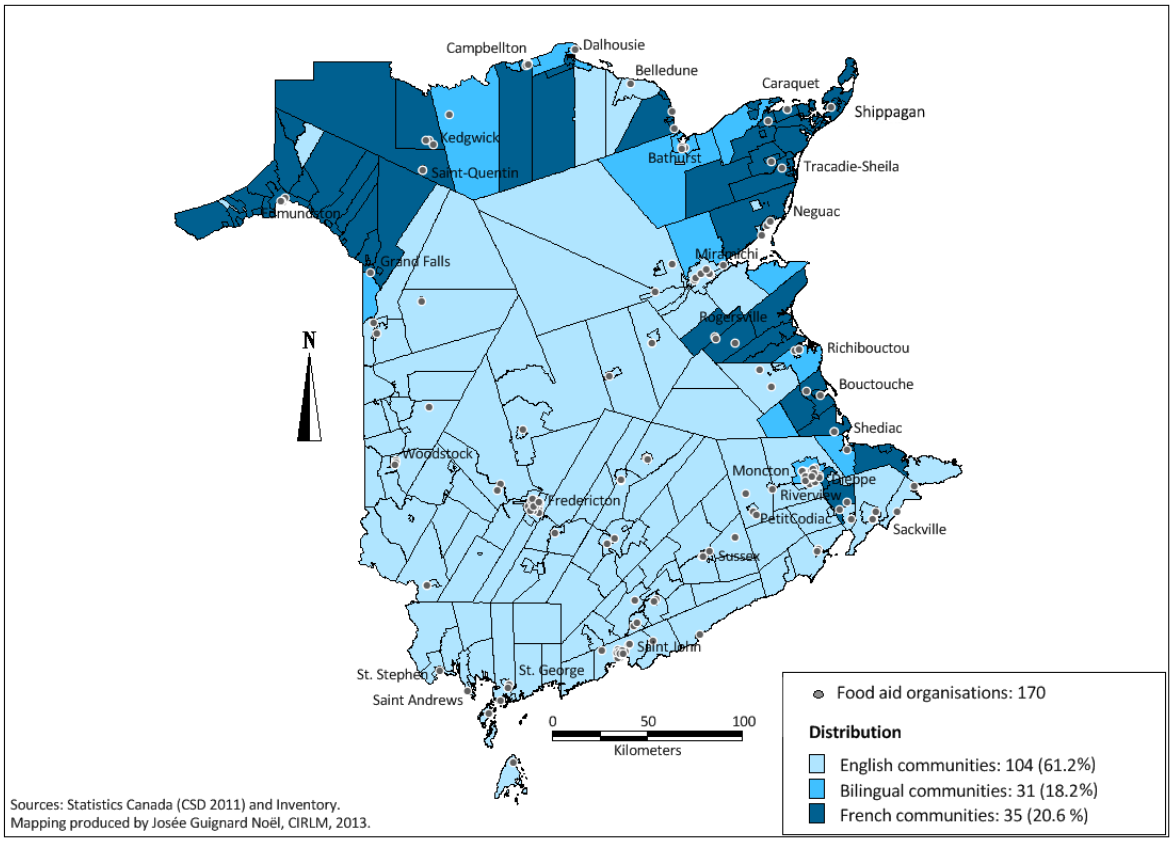


Map 3. Food outlets supportive of healthy eating and financially accessible, by distribution in rural and urban communities, New Brunswick, 2013

Map 3 above shows the distribution of food outlets supportive of healthy eating and financially accessible, mostly supermarkets, by urban and rural community. The 119 supermarkets were slightly more present in rural areas (53.8%) than in urban ones (46.2%). Here again, this distribution is the opposite of the distribution of the province's population. There do not seem to be – at this level of analysis, anyway – large differences in food accessibility, at least in terms of availability and economic accessibility.

More detailed analyses would be needed to take into account the distances people must travel to gain access to these food outlets or food aid organizations, particularly in disadvantaged urban neighborhoods or suburban and rural areas. Further research would make it possible to broaden the geographic analysis of food accessibility by looking at another of its dimensions: spatial accessibility (Robitaille and Bergeron, 2013). This would help, for instance, in identifying possible "food deserts," i.e. urban or rural areas where there is no supermarket within 0.8 km (0.5 mile) (Robitaille and Bergeron, 2013). The aim of this definition is to estimate spatial or geographic accessibility to a variety of foods of good nutritional quality when methods of transportation are limited, for example, for households without a car and no access to public transportation or people with reduced mobility.

Most food aid organizations and food security initiatives were located in communities with a high concentration of Anglophones, and they were three times less numerous in communities with a high concentration of Francophones and in bilingual communities.



Map 4. Food aid organizations by Anglophone, bilingual, and Francophone communities, New Brunswick, 2013

Maps 4 above shows the distribution of food aid organizations by Anglophone, bilingual, and Francophone communities. About three organizations or initiatives in five (61.2%) are located in communities with a predominantly Anglophone population, while about two organizations in five are located in bilingual communities (18.2%) or predominately Francophone (20.6%) communities.

If we take into account both distribution by language and distribution by urban or rural location (see Table 4 in methodology section), we can see that about 70% of organizations in Francophone communities are in rural areas, while those in Anglophone communities are almost equally distributed between urban (51%) and rural (49%) areas. Note that the organizations in communities designated bilingual are mostly an urban phenomenon (90%).

The more rural nature of organizations located in Francophone communities may be one source of the challenges faced, as we will see in the upcoming sections.

3.3. SURVEY OF COMMUNITY FOOD SECURITY INITIATIVES

The survey results provide a description and a general assessment of local community food security measures in New Brunswick.

The main themes covered by the survey were community leaders; food security organizations and initiatives; community food security services and activities; food aid, including the foods typically distributed; sources of food, including nutritional value and freshness; clients and participants; funding; local community engagement; organizations' strengths and challenges, including best practices; and needs and priorities with respect to improving and developing community food security.

The following subsections present and on comments briefly on the results for these main themes. The results will be discussed and interpreted in more detail in section 4 of this report. Only the most informative charts will be presented here.

3.3.1. Community leaders

The roles of those in charge of community food security initiatives who participated in the survey were mostly those of executive director, supervisor, coordinator, or manager (79%). Some were also President or Treasurer of their organization or held another position on the Board of Directors (19%). Only 6 respondents in 10 (62%) were paid for their role within the organization, and nearly 4 in 10 (38%) were volunteers.

Almost three-quarters (74%) of the respondents were in the labour force owing to their employment status within the organization or elsewhere. The vast majority held a permanent position (86%) rather than a contract one (14%). They were mostly employed full time (53%), sometimes part time (16%), and more rarely were self-employed (5%). One-quarter (26%) of the respondents were retired (19%), at home (3%), students (1%), or unemployed but looking for a job (1%). These percentages do not take into account those who did not answer this question.

The respondents' main motivations towards their food security organization or initiative were, in order of importance, as followed: helping people in need reduce food insecurity and poverty (58%), promoting healthy eating through education (21%), promoting local food self-sufficiency (20%), and improving general wellness and quality of life in their community (19%). As shown in the following chart, other motivations included fulfilling a religious mission (5%) or promoting their clients' personal independence (3%).

Table 6. Personal motivations of community leaders

(What are your main personal motivations towards this organization or initiative?)

Response	Graph	Percentage	Number
Helping people in need reduce hunger and poverty		58%	46
Promoting healthy eating through education		21%	17
Promoting local food self-sufficiency		20%	16
Improving quality of life in the community		19%	15
Fulfilling a religious mission		5%	4
Promoting personal independence		3%	2
Other		4%	3

A total of 81 respondents answered this question.

Total may be greater than 100% because respondents could indicate more than one motivation.

As might be expected, the survey shows that the heads of food security organizations and initiatives in the province are mostly women. About 8 respondents in 10 were women (81%), and only 2 in 10 were men (19%). This result reflects the overrepresentation of women in this community sector.

If we exclude the small number of respondents who preferred not to give their age, we can see that nearly two-thirds (64%) were aged 25 to 54 and one-third (34%) were aged 55 or over. It is worth noting more specifically that, of 10 community leaders, 4 (40%) were aged 25 to 44, 4 (41%) were aged 45 to 64, and just under 2 (17%) were aged 65 or over. Only 1 person was under 25.

According to the survey, more than half (57%) of the respondents had a high school or college diploma, nearly one-quarter (23%) had an undergraduate university degree, and one-fifth (20%) had some graduate or postgraduate university education. These percentages do not take into account the small number of respondents who preferred not to answer this question.

Last of all, the mother tongue of two-thirds (65%) of the respondents was English and that of the other third (34%) was French.

3.3.2. Food security organizations and initiatives

The main reasons reported for the creation of the food security initiatives and activities was, as followed, to help low-income people living in poverty (34%), provide access to fresh local foods (23%), or meet a specific demand in the local community (23%).

The results show that a significant proportion of the food security activities of the organizations that participated in the survey had started relatively recently. In one-third (34%) of the cases, activities had started no more than three years before the survey, as shown in the following table. Almost another third (32%) were started up in the 2000s and a tenth (10%), in the 1990s. A quarter (25%) of the organizations had begun their activities in the 1980s (21%) or earlier.

Table 7. Year in which food security initiatives began

(Do you know when the food security-related activities of your organization or initiative began?)

Response	Graph	Percentage	Number
1960s		1%	1
1970s		2%	2
1980s		21%	17
1990s		10%	8
2000s		32%	26
2010s		34%	28
	Total responses	100%	82

Food security initiatives in New Brunswick took various forms, although the legal status reported most often was non-profit organization (NPO) (42%), followed by registered charities (22%). Some community initiatives were unregistered (12%) or were government measures associated with a public program (12%). A few religious organizations (6%) and businesses (5%) answered the survey, as well. Most (71%) of the initiatives had an official mandate or at least an explicit mission.

The results show that two-thirds (67%) of the community food security organizations or initiatives that participated worked either in English only (39%) or mostly in English (29%), and a third (33%) worked in English and French equally (16%), mostly in French (17%), or in French only (4%).

Table 8. Language of work of food security initiatives

(In what language does your organization or initiative usually work?)

Response	Graph	Percentage	Number
English only		39%	32
English mostly with some French		29%	24
English and French equally		16%	13
French mostly with some English		13%	11
French only		4%	3
	Total responses	**100%**	**83**

3.3.3. Community food security services and activities

The primary services or the main activities of the one hundred or so food security organizations and initiatives that responded to the survey are very diversified. More than 15 types of services were offered in New Brunswick by these organizations, as shown in the following table.

Table 9. Services and activities of organizations and initiatives

(What are the primary services or the main activities of your organization or initiative?)

Response	Graph	Percentage	Number
Food boxes (food bank)		40%	40
Community or collective garden		34%	34
Information and education about nutrition		31%	31
Emergency food aid services (food and/or food vouchers)		23%	23
Clothing store		22%	22
Collective kitchen		16%	16
Prepared meals (soup kitchen or community kitchen)		15%	15
Breakfast, lunch and/or snacks in a school setting		12%	12
Representation and advocacy		12%	12
Job seeking help		12%	12
Community-supported agriculture (CSA)		10%	10
Food buying club		7%	7
Accommodations/shelter		4%	4
Tax assistance		3%	3
Other		5%	5

A total of 100 respondents answered this question.
Total may be greater than 100% because respondents could choose more than one answer.

Although these services and activities are not all food-security related, all of the organizations and initiatives surveyed offered at least one community food security service. Most offered more than one. Almost two-thirds (63%) offered more than one service: one-quarter (25%) offered two services, another quarter (25%) offered three or four, and a few (13%) offered five to eight. However, more than a third (37%) offered only one service.

It might be useful to divide these services into three main types: food aid, other food security services, and related non-food community services. This is illustrated in the following figure, which also shows the percentages of organizations and initiatives offering these services.

More than half (55%) organizations offered food aid and two-thirds (65%) offered other food security services. Note that one-fifth (20%) offered both types of services (3%), more often than not in combination with other related community services (17%). Almost 4 food security organizations in 10 (39%) also offered other related non-food community services.

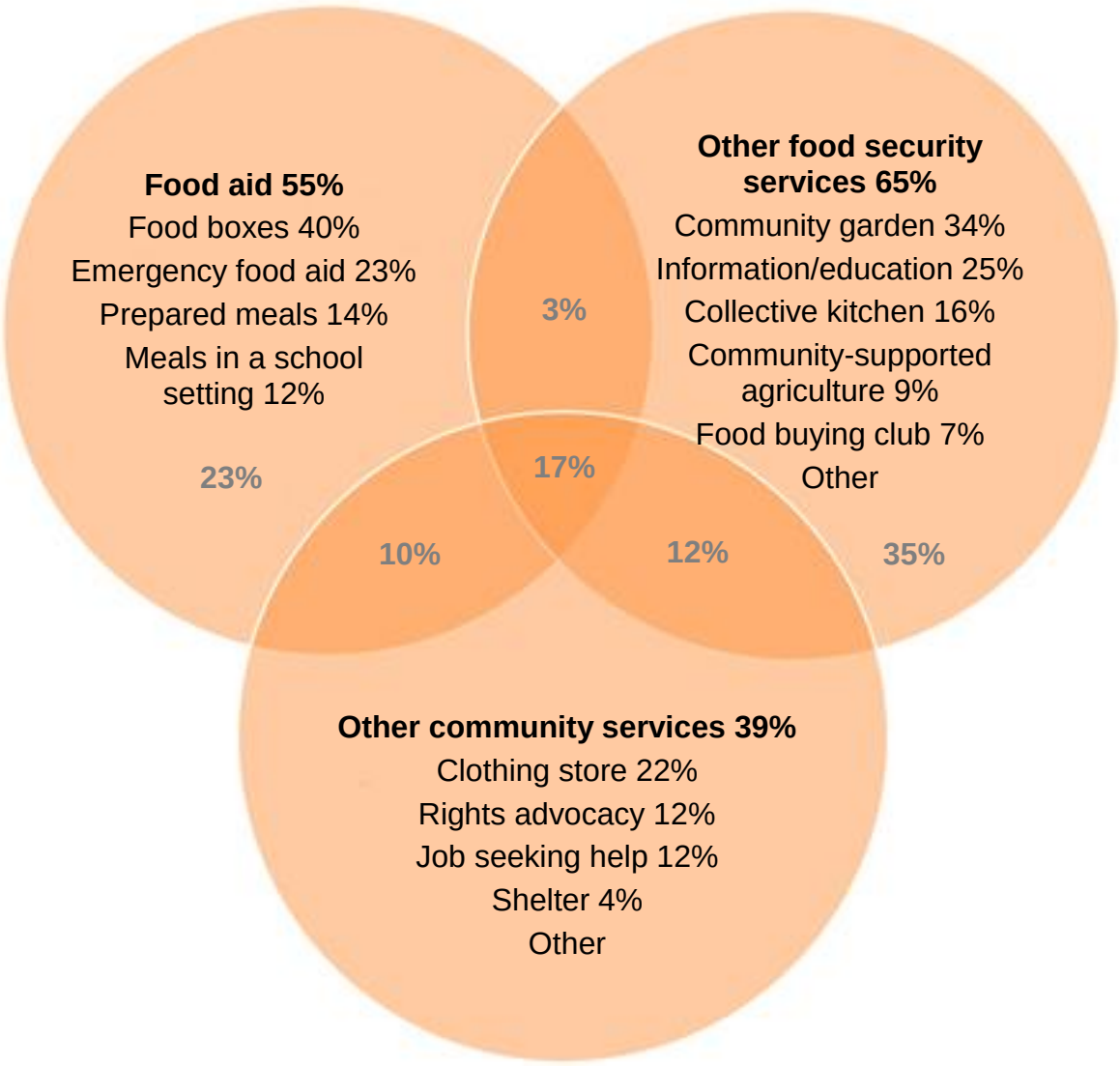


Figure 5. The Three Types of Community Food Security Services

The organizations can also be characterized according to the two typical approaches: food aid and food security. The first approach consists of different forms of temporary emergency food aid (23%) (food boxes, meals, emergency aid), with or without the presence of non-food community services (10%), such as clothing stores. This was the approach of one-third (33%) of the participating organizations, particularly traditional charities. The second approach, which involved alternative food security actions aimed at long-term food self-sufficiency, was taken by one-third (35%) of the organizations, which used this approach exclusively, while the last third (32%) offered the three types of services (17%), related non-food community services (12%), and more rarely, food aid (3%).

Just over half (58%) of the organizations specialized in one of these two types of approach, while 42% offered more than one type of service, an approach that approximates the community food centre model.

It is interesting to note that, although more than half (55%) of the organizations than responded to the survey offered food aid, only just over a third (37%) had participated in the 2013 HungerCount conducted by Food Banks Canada. The reason for this is that Food Banks Canada delegates the administration of the survey to the New Brunswick Association of Food Banks, which sends it only to its members. Besides providing access to the National Food Sharing System for food aid typically distributed by food banks and soup kitchens, HungerCount offers an annual portrait of the provincial and national situation. The survey results therefore confirm that food aid services in New Brunswick, as elsewhere in Canada, are even more numerous than HungerCount indicates.

3.3.4. Food aid

The most common direct food aid activities were the distribution of food boxes by food banks and the preparation and serving of meals by soup kitchen-type organizations. The results concerning food banks, including the food content of the boxes distributed, are presented in this section, while the results concerning meals served by soup kitchens are presented on an indicative basis in the appendix, since they are based on only 10 respondents.

Food bank capacity in terms of number of clients reported during the survey varied considerably, from just 20 clients to about 6,000 per month. Approximately one-fifth of food banks were of very small capacity and served fewer than 50 clients per month, about a quarter were of small capacity, with 50 to 150 clients per month, about one-third were of moderate capacity, with 250 to under 750 clients, and one-fifth distributed food to 1,000 to 2,500 clients per month, and even to as many as 6,000 in the case of one very large food bank. The very large capacity food bank alone served nearly one-third of the clients of all food banks that responded to the survey.

Most food banks said they offered food aid to their clients only once a month, while some offered it twice a month or, in one case, every month and a half. Almost half the food banks that participated in the survey distributed food boxes meant to last for a few days (3 to 4 days) and the other half distributed food boxes meant to last for a week (5 to 6 days). Only a few food banks offered food boxes meant to last for about two weeks (10 to 13 days).

The quantity of food in the boxes could vary, depending on surpluses and shortages for two-thirds of the food banks or surpluses only for nearly one-quarter of them. Only 1 food bank in 10 said it was always able to distribute the same amount of food to its clients. That result clearly indicates a problem with supply instability and therefore with access to food aid.

However, all of the food banks that responded to the survey indicated that the quantity of food could also vary depending on the clients' needs and a number of criteria. The criteria mentioned most frequently by the respondents were number of people in the household, presence of a child or infant, and the health needs of the recipients (Table 10).

Table 10. Criteria influencing the quantity of food items in food boxes

(Which of the following criteria may influence the quantity of food items in clients' boxes?)

Response	Graph	Percentage	Number
Number of people		100%	29
Presence of an infant		76%	22
Health-related needs (e.g. allergies, diabetes)		69%	20
Presence of a toddler		69%	20
Presence of school-age children		69%	20
For a pregnant or breastfeeding woman		45%	13
Financial needs		38%	11
For an elderly person		31%	9
In the case of a person living alone		24%	7
In the case of a single-parent family		21%	6
For a woman		17%	5
For a man		17%	5
Other		3%	1

A total of 29 respondents answered this question.

Total may be greater than 100% because respondents could choose more than answer.

Similarly, three-quarters of the participating food banks indicated that the types of food in the food boxes distributed could vary depending on the clients' needs. Several criteria are involved here as well. Those mentioned most frequently were the presence of an infant, the number of people in the household, health needs, and the presence of a child (Table 11).

Table 11. Criteria influencing the types of food in food boxes

(According to what criteria can the type of food in clients' or beneficiaries' boxes vary?)

Response	Graph	Percentage	Number
Presence of an infant		79%	19
Number of people		75%	18
Health-related needs (e.g. allergies, diabetes)		75%	18
Presence of a toddler		75%	18
Presence of school-age children		71%	17
For a pregnant or breastfeeding woman		46%	11
Financial needs		38%	9
For an elderly person		29%	7
For a woman		25%	6
For a man		25%	6
In the case of a single-parent family		21%	5
Other		4%	1

A total of 24 respondents answered this question.

Total may be greater than 100% because respondents could choose more than one answer.

Contents of food boxes

This section pertains to the food generally distributed in food boxes, as reported by the food banks that responded to the survey (32 respondents for this section).

For the category Grain Products and Other Starches, the top five foods generally distributed were uncooked pasta, macaroni and cheese, white bread, ready-to-eat cereal, and uncooked rice (Table 12). Note the high number of responses (>85 %) for pasta and macaroni and cheese. Also note the lower number of responses for uncooked oat-based cereal and whole wheat bread, even though these are nutritious products, may contain more fibre and less sugar than ready-to-eat cereal.

Table 12. Grain products and other starchy food usually distributed in food boxes

(What grain products and other starchy foods are most often included in a food box for a single person?)

Response	Graph	Percentage	Number
Uncooked pasta (e.g. macaroni, spaghetti)		97%	31
Macaroni and cheese (e.g. Kraft Dinner)		88%	28
White bread		78%	25
Cereal		78%	25
Uncooked rice		72%	23
Hot cereal (e.g. oat bran, oatmeal)		56%	18
Spaghetti or ravioli with sauce (e.g. Alphagetti, Chef Boyardee)		53%	17
Whole wheat bread		53%	17
Hamburger Helper, SideKicks		38%	12
Pancake mix		38%	12
Flour		28%	9
Bagels		16%	5
Rice cakes		3%	1
Other		16%	3

A total of 32 respondents answered this question.

Total may be greater than 100% because respondents could choose more than one answer.

For the Vegetables and Vegetable Juices category, the top five foods were tomatoes, vegetable soup, peas, potatoes, and corn niblets (Table 13). Note the high number of responses (72%, 23 out of 32 respondents) indicating canned or dried vegetable soups. These foods generally contain a lot of sodium (salt) and do not offer all the benefits of fresh vegetables. Also note the low number of responses (<20%) for vegetables often used in the fresh state, rather than canned, such as cucumbers and turnips.

Table 13. Vegetables and vegetable juices usually distributed in food boxes

(What vegetables or vegetable juices are most often included in a normal food box for a single person?)

Response	Graph	Percentage	Number
Tomatoes (fresh or canned)		75%	24
Vegetable soup (canned or dried)		72%	23
Peas (canned or frozen)		66%	21
Potatoes (fresh, canned, or frozen)		59%	19
Corn niblets (canned or frozen)		59%	19
Green/yellow beans (fresh, canned, or frozen)		56%	18
Carrots (fresh, canned, or frozen)		44%	14
Tomato juice		41%	13
Onions		28%	9
Mixed vegetable juice (canned or frozen)		25%	8
Cucumbers		19%	6
Mashed potatoes		9%	3
Turnips		6%	2
Squash		6%	2
Mixed vegetables		6%	4
Other		28%	4

A total of 32 respondents answered this question.
Total may be greater than 100% because respondents could choose more than one answer.

For the Fruit and Fruit Juices category, the top five foods were mixed fruit, fruit juices, fruit cocktail, peaches, and pears (Table 14). There were fewer responses (<60 %) in this category than for other food categories. This suggests that fruit and fruit juices are included less often in food boxes. Among those most often included are fruit juices and fruit cocktail. These products (juice and cocktail) generally contain a lot of sugar and do not offer all the benefits of fresh fruit. Their consumption is associated with a high prevalence of obesity, particularly among children. Note the low number of responses (<20 %) for fruits generally used in the fresh state, such as oranges, apples, bananas, and grapes, that can be snacks of good nutritional quality, particularly for children and adolescents.

Table 14. Fruits and fruit juices usually distributed in food boxes

(What fruits and fruit juices are most often included in a normal food box for a single person?)

Response	Graph	Percentage	Number
Mixed fruits (canned or frozen)		59%	19
Fruit juices (100% pure juice, no sugar added)		53%	17
Fruit cocktail (fruits with sugar added)		34%	11
Peaches (fresh, canned, or frozen)		28%	9
Pears (fresh, canned, or frozen)		25%	8
Oranges, mandarins, or other citrus fruits		19%	6
Apples		16%	5
Bananas		9%	3
Dried fruits (e.g. raisins or mixed fruits)		9%	3
Grapes		6%	2
Fruit compote		6%	2
Prunes (canned or dried)		3%	1
Other		22%	7
None		12%	4

A total of 32 respondents answered this question.

Total may be greater than 100% because respondents could choose more than one answer.

For the Meat, Eggs, and Substitutes category, the top five foods were beans with pork, peanut butter, meat-based soups, eggs, and chicken or turkey (Table 15). Note the high number of responses (>60 %) for beans with pork and meat-based soups. These canned foods generally contain a lot of sodium. Beans with pork are high in protein, dietary fibre, and iron but also contain a lot of salt. Note the low number of responses (<20 %) for other legumes (e.g. lentils and chickpeas) and nuts (nuts, almonds, etc.). The inclusion of other legumes and nuts could help to diversify the foods distributed. There are less salty and less expensive alternatives to canned legumes that might help reduce the salt content of the foods distributed.

Table 15. Meat, poultry, eggs, and alternatives generally distributed in food boxes

(What meats, poultry, eggs, and substitutes are most often included in a food box for a single person?)

Response	Graph	Percentage	Number
Beans with pork		78%	25
Peanut butter		66%	21
Meat-based soup (e.g. chicken noodle, beef stew)		62%	20
Eggs		53%	17
Chicken or turkey (fresh, frozen, or canned)		50%	16
Ham (fresh, frozen, or canned)		44%	14
Lentils, beans, chickpeas		38%	12
Beef (fresh, frozen, or canned)		34%	11
Other canned meats (e.g. Spam, Klik)		31%	10
Sausages (fresh or canned)		28%	9
Meatballs (canned or frozen)		16%	5
Nuts, hazelnuts, almonds, peanuts		9%	3
Other		12%	4
None		3%	1

A total of 32 respondents answered this question.
Total may be greater than 100% because respondents could choose more than one answer.

For the Fish and Seafood category, the top food item was canned tuna (Table 16). For this category, note that the foods distributed were much less diversified than in the other categories. Also, other fish and seafood were less prevalent, despite the maritime character of the province, which could contribute to the acceptability of these foods. The inclusion of other canned fish – sardines, mackerel, or salmon, for example – would help diversify the foods distributed. These fish are good sources of omega-3 essential fatty acids (polyunsaturated fats), which are very important for adults and children (development of cognitive functions, etc.). There are less salty, cheaper versions of these foods that might help reduce the salt content of the foods distributed.

Table 16. Fish and seafood generally distributed in food boxes

(What fish and seafood are most often included for a single person?)

Response	Graph	Percentage	Number
Tuna (canned)		78%	25
Sardines (in water, oil, or other sauce)		34%	11
Salmon (canned or frozen)		34%	11
Clams (canned)		16%	5
Other		12%	4
None		12%	4

A total of 32 respondents answered this question.
Total may be greater than 100% because respondents could choose more than one answer.

For the Dairy Products and Substitutes category, the top food by far was milk (Table 17). As with fish and seafood, the foods distributed were much less diversified than in the other categories.

Yogourt and cheese, for example, were not usually distributed. It would be good to include a wider diversity of dairy products and alternatives in the boxes, but this would require sufficient refrigerated storage capacity. These foods are good sources of calcium, a number of vitamins, and protein and are very important for people of all ages: children, adolescents, adults, and seniors. There are versions of these foods that are less salty and lower in sugar and/or fat that might help improve the nutritional quality of the foods distributed.

Table 17. Dairy products and alternatives generally distributed in food boxes

(What dairy products are most often included for a single person?)

Response	Graph	Percentage	Number
Skim, 1%, 2%, or whole milk (fresh, canned, or powdered)		72%	23
Yogourt		31%	10
Cheese (sliced, block, grated, cream, cottage, etc.)		22%	7
Baby formula		19%	6
Soy milk, almond milk		9%	3
Coffee cream, cereal cream, etc.		6%	2
Other		6%	2
None		12%	4

A total of 32 respondents answered this question.

Total may be greater than 100% because respondents could choose more than one answer.

For the Fats and Oils category, the top food by far was margarine (Table 18), followed by salted spreads, ready-to-use salad dressings, and vegetable oil. Note the small number of responses for butter (3%). With the exception of oil, the fats mentioned most often by the respondents generally contained a lot of sodium.

Table 18. Fats generally distributed in food boxes

(What fats and oils are most often included for a single person?)

Response	Graph	Percentage	Number
Margarine		75%	24
Salted spreads (e.g. Cheez Whiz, dips, etc.)		31%	10
Ready-to-use salad dressings		19%	6
Vegetable oil (canola/colza, sunflower, olive, other)		16%	5
Butter		3%	1
Other		6%	2
None		9%	3

A total of 32 respondents answered this question.

Total may be greater than 100% because respondents could choose more than one answer.

For the Sweet or Salted products category, the top five foods were crackers; cereal, chocolate, or fruit bars; sugar; jam; and Jell-O puddings (Table 19). Note the high number of responses (>80 %) for crackers. Also note the diversity of foods in this category that may be included in food boxes,

even though their nutritional value is relatively low and they tend to contain a high amount of sodium.

Table 19. Sweeten or salted products generally distributed in food boxes

(What sweet or salted products are most often included in a normal food box for a single person?)

Response	Graph	Percentage	Number
Crackers		81%	26
Cereal, chocolate, or fruit bars (granola bars)		62%	20
Sugar		41%	13
Jam		41%	13
Pudding, Jello		41%	13
Sweet drinks (e.g. colas, sweetened fruit juices, sweetened tea, chocolate drinks (e.g. Quik))		28%	9
Baked goods (e.g. muffins, waffles, donuts)		22%	7
Chips, pretzels, etc.		22%	7
Ketchup, relish, mustard		22%	7
Confectionary (e.g. candy, chocolate)		12%	4
Pickles		9%	3
Other sweet spreads (e.g. Hazelnut-chocolate, Nutella, Marshmallow Fluff, syrup, caramel)		9%	3
Other		12%	4

A total of 32 respondents answered this question.

Total may be greater than 100% because respondents could choose more than one answer.

For the Other Food Products category, the top food item generally distributed was pizza (Table 20), followed by ready-to-eat prepared dishes. These ready-to-eat foods generally contain a fair amount of sodium.

Table 20. Other food products generally distributed in food boxes

(What other various food products are most often included in a box for a single person?)

Response	Graph	Percentage	Number
Frozen pizzas, pizza pockets or other		63%	20
Ready-to-eat prepared dishes		28%	9
None		25%	8

A total of 32 respondents answered this question.

Total may be greater than 100% because respondents could choose more than one answer.

3.3.5. Food supply

The next section of the survey pertains to the food supply for community food security initiatives. It looks at the different sources of supply, the regularity and accessibility of these sources, as well as the nutritional value, freshness, and food safety by source of supply.

This section of the survey was intended only for organizations and initiatives offering one or more food aid services. Such services include food boxes distributed by food banks, emergency food aid, and prepared meals offered by soups kitchen or schools. Remember that the many initiatives

focused only on food aid in the province's schools were not included in the survey sample. However, a few organizations reported that their activities included such services.

The sources of supply were varied, but the three most common were local grocery store purchases for the vast majority of organizations (82%), food donations by individuals (64%), and food from the National Food Sharing System of Food Banks Canada (61%) (Table 21).

Table 21. Sources of supply of food aid organizations or initiatives

(What are your main sources of food?)

Response	Graph	Percentage	Number
Grocery store purchases		82%	27
Food donations by individuals		64%	21
Food Banks Canada (National Food Sharing System)		61%	20
Food donations from businesses		39%	13
Agricultural producers (e.g. orchards, farms)		18%	6
Community or collective gardens		12%	4
Other		6%	2

A total of 33 respondents answered this question.
Total may be greater than 100% because respondents could choose more than one answer.

Food donated by local businesses was a source of supply for 4 in 10 organizations (39%) offering food aid, while local agricultural producers were a lesser source for fewer than 2 in 10 (18%). Note that community or collective gardens were a source of supply for the equivalent of only 1 organization in 10 (12%).

Half (53%) of the organizations offering food aid reported using at least three main sources of supply. Some (22%) even reported five or more.

Among the three main food sources of the participating organizations were local grocery store purchases for the vast majority (87%), as well as food donations from individuals (69%) and food from the National Food Sharing System of Food Banks Canada (67%) for more than two-thirds. Note that very few organizations reported using community or collective gardens (8%) or local agricultural producers (3%) as one of their three main food sources.

We also assessed the regularity of the various food sources. The sources considered somewhat regular or very regular were again local grocery store purchases (92%), the National Food Sharing System of Food Banks Canada (76%), food donations from individuals (70%), and food donations from local businesses (62%). Community or collective gardens (75%) and local agricultural producers (67%) were considered somewhat irregular or very irregular sources of supply.

Two aspects of the accessibility of food sources were included in the survey: economic accessibility (food prices) and geographic accessibility (distance and transportation). When considering the distance separating them from their food sources and the transportation that was required, about 9 food aid organizations in 10 rated as somewhat or very accessible local grocery stores (92%), food donations by individuals (90%) or local businesses (85%), and the National Food Sharing System of Food Banks Canada (88%). Community or collective gardens (75%) and local agriculture producers (60%) seemed to be relatively less accessible geographically.

The economic accessibility of the various food sources differed slightly from their geographic accessibility. About 9 respondents in 10 rated as somewhat accessible or very accessible foods from the National Food Sharing System of Food Banks Canada (93%), donations by individuals (93%), and donations from local businesses (88%). Products from community or collective gardens (75%) or local agricultural producers (75%) seemed to be relatively less accessible economically. Purchases from local grocery stores were considered the least accessible in terms of price (68%), with nearly a third (32%) of the participating organizations considering them somewhat inaccessible.

The nutritional value of food received from the National Food Sharing System of Food Banks Canada was considered somewhat poor or very poor by half (53%) of the respondents using this food source. More than 9 food aid organizations in 10 rated as somewhat good or excellent the nutritional quality of food from local grocery stores (96%) and food donations from individuals (95%) or local businesses (92%). However, the food aid organizations surveyed unanimously rated products from community or collective gardens (100%) and local farmers (100%) as being of excellent nutritional quality.

The freshness of food received from the National Food Sharing System of Food Banks Canada was described as somewhat poor by 4 out of 10 (40%) organizations using this supply source. However, this result must be tempered by comparing it to almost half (53%) who rated its freshness as somewhat good, and even excellent (7%). More than 9 out of 10 respondents rated as somewhat good or excellent the freshness of food from local grocery stores (96%) and donations from individuals (100%) or local businesses (92%). As might be expected, the food aid organizations that participated in the survey were unanimous in rating the freshness of products from community or collective gardens (100%) and local agricultural producers (100%) as excellent.

However, again, it is necessary to have access to fresh foods and the capacity to store them properly. Almost all (94%) of the organizations and initiatives offering food aid reported difficulties in ensuring the freshness or safety of foods offered to clients.

Table 22. Difficulties in ensuring the freshness and safety of food aid

(What are the difficulties faced in trying to ensure the freshness and safety of the food offered to clients?)

Response	Graph	Percentage	Number
Lack of funds to buy fresh food		64%	21
Expired food donations		61%	20
Lack of adequate storage space		45%	15
Inadequate building or work space		24%	8
Improperly stored food donations		15%	5
Lack of adequate means of transportation to get or distribute food		15%	5
Lack of staff or volunteers to get or distribute food		15%	5
Lack of staff or volunteer training on hygiene or food safety		3%	1
Vermin problem (rodents, insects)		3%	1
None		6%	2

A total of 33 respondents answered this question.
Total may be greater than 100% because respondents could choose more than one answer.

Nearly two-thirds of the organizations said that they simply did not have the money to buy fresh food (64%) or that they received food donations that were already expired (61%) or had been improperly stored (15%). It is important to note that nearly half of the organizations (45%) reported that they did not have adequate storage space or, to a lesser extent, an adequate building or work space (24%) to ensure the freshness or safety of the foods distributed.

A few respondents mentioned lack of adequate means of transportation (15%) or lack of staff or volunteers (15%) to get and distribute food. Very few respondents reported lack of hygiene or safety training for staff or volunteers (3%) or vermin problems (3%).

As a result of these difficulties, half (53%) of the participating food aid organizations and initiatives said they were concerned about the freshness or safety of the foods offered to clients.

3.3.6. Clients

Nearly two-thirds (64%) of the organizations said their clients or participants had to meet certain criteria to be eligible for their services or activities, compared with one-third (36%) that had no eligibility criteria because they were open to everyone, no questions asked.

More than half of the organizations that had eligibility criteria served only people in need (60%) living in their coverage area (56%).

Table 23. Eligibility criteria for community food security services

(What are the main eligibility criteria for your services or activities?)

Response	Graph	Percentage	Number
Be in need		60%	26
Be a resident in your territory of service or activity		56%	24
Be below the low income cut-off		37%	16
Be going through a situation of emergency (fire, illness, etc.)		33%	14
Be a social assistance beneficiary		23%	10
Be a member of our organization, religious community, or club		9%	4
Be a student		9%	4
Fee		7%	3
Other		7%	3

A total of 43 respondents answered this question.

Total may be greater than 100% because respondents could choose more than one answer.

About a third of the organization served people living below the low income cut-off (37%) or going through an emergency situation (33%). Nearly a quarter targeted people on social assistance (23%), and a few served only members of their organization or religious community (9%). Note that few organizations (7%) charged a fee for their food security services.

About 6 organizations in 10 (59%) felt they were able to fully meet the demand, and 4 in 10 (41%) said they could not fully meet the demand from the public.

The organizations that could not fully meet the demand estimated that, on average, they met about half of the demand (52%). They would then adopt different strategies. Most often, they would have to rationalize their services (39%) by increasing the wait time or decreasing frequency of service, reducing food quantity or quality, prioritizing specific clienteles, such as families with children, or following the “first come, first served” rule. Other prioritized their actions according to their or the community’s organizational capacity. Some tried to refer people to other services or sought more donations to meet the demand (32%). A few had to turn down requests that

exceeded their capacity (14%) or tried to expand in order to increase their overall capacity (14%). However, these results must be interpreted with caution, because they are based on the responses of only 25 organizations.

According to the respondents, an average of 72% of their clients, beneficiaries, or participants relied on food aid on a regular basis to meet their food needs, while 24% used them only occasionally.

Last of all, almost half (48%) of the respondents estimated that their clientele was less than 20% Francophone, while a quarter (25%) said their clientele was between 20% and 80% Francophone and 27% said, 80% or more.

Table 24. Proportion of Francophone community food security clients

(What proportion of your clients or participants do you think are Francophone (percentage)?)

Response	Graph	Percentage	Number
0		15%	8
1% to less than 20%		33%	17
20% to less than 80%		25%	13
80% to 100%		27%	14
	Total responses	**100%**	**52**

3.3.7. Funding

Nearly half of the participating organizations reported that their sources of funding included donations from individuals (49%) and the provincial government (47%).

Table 25. Sources of community food security funding

(What are your main sources of funding and donations for your food security-related activities?)

Response	Graph	Percentage	Number
Individual food, monetary, or service donations		49%	38
Provincial government		47%	36
Business food, monetary, or service donations		38%	29
Religious organizations		34%	26
Municipal government		25%	19
Charitable foundations		25%	19
NB Sharing Program		25%	19
Food Banks Canada - National Food Sharing System		22%	17
Federal government		13%	10

A total of 77 respondents answered this question.
Total may be greater than 100% because respondents could choose more than one answer.

Also, donations from businesses (38%) or religious organizations (34%) were funding sources for more than one-third of the respondents. A quarter mentioned their municipal administration (25%), charitable foundations (25%), the NB Sharing Program (25%), and the National Food Sharing System of Food Banks Canada (22%). Only 13% mentioned the federal government as one their main funding sources.

The value of funding or monetary, food, or service donations from the organizations' funding sources averaged $13,754 annually but varied considerably from one funding source to the next.

Table 26. Proportion of Francophone community food security clients

(Specify the annual value of your sources of funding and donations for your food security-related activities.)

Response	Graph	Percentage	Average
Business food, monetary, or service donations		235%	$32,375
Provincial government		193%	26,581
Food Banks Canada		145%	19,993
- National Food Sharing System			
Individual food, monetary, or service donations		122%	16,778
Charitable foundations		71%	9,703
Religious organizations		42%	5,830
Municipal government		40%	5,531
Federal government		34%	4,700
NB Sharing Program		17%	2,297
		Source average	**$13,754**

A total of 77 respondents answered this question.

The average value of business donations ($32,375) and provincial government funding ($26,581) was about twice as much as the funding source average. The average value of food from the National Food Sharing System of Food Banks Canada ($19,993) and individual donations ($16,778) was above the average, while the average value of other sources of funding was below the average: charitable foundations ($9,703), religious organizations ($5,830), municipal administration ($5,531), the federal government ($4,700), and the NB Sharing Program ($2,297). Note that the value of funding provided by the same source varies considerably from one organization to the next.

Yet this funding and these monetary, food, and service donations do not meet all of what more than half (58%) of the organizations and initiatives need to carry out their food security activities.

Because of this underfunding, 40% of the organizations must hold additional fundraisers, solicit donations, look for new grants, or hold additional funding activities.

Table 27. Consequences of underfunding for community food security

(What do you do when your funding and donations are insufficient?)

Response	Graphique	Percentage	Number
Seek funds, donations, grants, or activities		40%	28
Make do with they have/find alternatives		19%	13
Cut staff or food, halt activities		14%	10
Work with community, partners, or other		7%	5
Request volunteers		4%	3
Not experiencing any problems		7%	5
Other		10%	7

A total of 70 respondents answered this question.

Total may be greater than 100% because respondents could choose more than one answer.

Others had to try to make do with their insufficient means and seek alternatives (19%) or cut back on, or even discontinue, their services (14%). A few turned to the community (7%) or looked for other volunteers in their community (4%). Note that very few of the participating organizations had no funding problems (7%).

In general, about a third (36%) of the responding organizations did not need to hold fundraisers or food drives, while another third (36%) had to hold between 1 and 4 per year and nearly a third (29%) held from 5 to more than 15 annually.

Table 28. Number of activities held annually to fund community food security

(How many fundraisers or food drives does your organization normally undertake each year?)

Response	Graph	Percentage	Number
None		36%	25
1		16%	11
2 to 4		20%	14
5 to 10		12%	8
11 to 15		9%	6
More than 15		7%	5
	Total responses	**100%**	**69**

The reason for the "None" response is that such funding activities are not necessary, that other funding sources are available, or that the nature of the activities does not permit it, as in the case of government measures, for instance.

3.3.8. Engagement of local communities

Half (49%) of the responding organizations considered their local and surrounding community to be very engaged (31%) or extremely engaged (19 %) in supporting their food security activities. The other half (51%) felt the community was moderately engaged (31%), little engaged (17%), or not engaged at all (3%).

Table 29. Local engagement towards community food security organizations

(Is the local and surrounding community engaged in supporting your food security activities?)

Response	Graph	Percentage	Number
Extremely engaged		19%	14
Somewhat very engaged		31%	23
Moderately engaged		31%	23
Somewhat little engaged		17%	13
Not engaged at all		3%	2
	Total responses	**100%**	**75**

The respondents said this level of local engagement was based on community solidarity with respect to food security needs (40%), their earlier encouraging results for the community (14%), or the desire to offer fresh, local food (8%).

Table 30. Explanation of local engagement in community food security

(What do you think explains this level of engagement?)

Response	Graph	Percentage	Number
Community solidarity with respect to needs		40%	29
Earlier encouraging results		14%	10
Lack of support, communication, and information		11%	8
Desire to offer fresh, local food		8%	6
Lack of interest and engagement		7%	5
Weak economy and small community		3%	2
Other		7%	5
Don't know or unsure		10%	7
	Total responses	**100%**	**72**

In contrast, they attribute a low level of engagement in their activities to lack of support, communication, and information (11%), lack of interest and engagement (7%), or a weak economy and small community (3%).

The participating organizations and initiatives said they recruited an average of about 50 (51) volunteers annually for their community food security activities.

Table 31. Number of volunteers working for community food security organizations

(How many volunteers work for your organization's food security activities each year?)

Response	Graph	Percentage	Number
None		13%	8
1 to 10		25%	15
12 to 25		22%	13
30 to 50		20%	12
75 to 200		17%	10
500		3%	2
	Total responses	**100%**	**60**

Here again, this average hides a wide variation between the different organizations. Nearly half (47%) had between 1 and 25 volunteers. Others had between 30 and 50 volunteers (20%), and even 75 to 200 volunteers per year (17%), while a few had about 500 (3%). Some initiatives reported having no volunteers (13%), which may be explained by the nature of the initiatives, as in the case of government measures, for example.

3.3.9. Strengths and challenges of organizations

Four in 10 (42%) of the responding organizations said their strengths included the engagement of their volunteers and their community. One-third (36%) considered their food security services or their facilities to be their strong points.

Table 32. Strengths of community food security organizations

(What would you say are the strong points of your organization or initiative when it comes to food security?)

Response	Graph	Percentage	Number
Volunteer and community engagement		42%	31
Services provided or facilities		36%	26
Information and education		19%	14
Openness, friendliness, participation		16%	12
Partnerships with businesses and organizations		12%	9
Funding (fundraisers, food drives)		12%	9
Organization (pooling of resources)		7%	5

A total of 76 respondents answered this question.
Total may be greater than 100% because respondents could choose more than one answer.

The other strong points mentioned by the respondents were information and education (19%), openness, friendliness, or participation (16%), partnerships with businesses and other organizations in the community (12%), funding activities (12%), and efficient organization (7%). Nine respondents in 10 (90%) said they were willing to share their strong points with other organizations elsewhere in the province in order to improve community food security in New Brunswick.

The challenges faced by the responding organizations and initiatives were mainly difficult, inadequate, or irregular fundraising or donation collection (42%) and insufficient volunteer recruitment, retention, or renewal (29%).

Table 33. Challenges of community food security organizations

(What challenges does your organization or initiative face in its regular activities?)

Response	Graph	Percentage	Number
Funding or monetary donations		42%	31
Volunteers		29%	21
Local engagement or food donations		14%	10
Human resources		14%	10
Lack of space, storage, equipment		12%	9
Client participation		10%	7
Distances and transportation		7%	5
Clients with special needs		7%	5
Food prices, variety, and safety		4%	3
None		4%	3

A total of 75 respondents answered this question.
Total may be greater than 100% because respondents could choose more than one answer.

The other challenges mentioned were inadequate local engagement or insufficient food donations from the community (14%), non-existent or insufficient human resources, and staff retention or burnout (14%), followed by problems related to the premises or the facilities, such as lack of space, storage, or adequate equipment (12%) and problems related to low or inconsistent client participation or their lack of interest and stigmatization (10%).

Distance and transportation also posed challenges in terms of access to services or to perishable and frozen foods, mostly in rural areas (7%). Clients with special needs, such as disadvantaged people and those on a special diet, and language barriers were also mentioned by some (7%), while a few reported high prices and food variety and safety (4%).

3.3.10. Community food security needs and priorities

In general, the respondents felt that improving food security required information, awareness, and education (48%), better funding and facilities (23%), and improved access to fresh and local products (16%).

Table 34. Community food security needs

(What do think could be done to improve food security?)

Response	Graph	Percentage	Number
Information, awareness, and education		48%	35
Better funding and facilities		23%	17
Improved access to fresh and local products		16%	12
Better collaboration (organizations, communities)		8%	6
Job creation, job seeking help, and raising minimum wage		5%	4
Food buying club		5%	4
Improving existing programs		3%	2
Other		14%	10

A total of 75 respondents answered this question.
Total may be greater than 100% because respondents could choose more than one answer.

A few of the organizations wanted to see better collaboration between organizations and communities (8%), job creation or job seeking help, an increase in the minimum wage (5%), or the establishment of a food buying club (5%).

In order to improve food security, the chief needs of the organizations and initiatives were funding (41%), information and education about nutrition (21%), and better equipment, space, or facilities (12%).

Table 35. Help needed to improve community food security

(What help would you like to have that would assist you in improving food security in your community?)

Response	Graph	Percentage	Number
More funding		41%	31
More information and education about nutrition		21%	16
Better equipment, space, or facilities		12%	9
Better collaboration and partnerships		9%	7
More volunteers		8%	6
Better access to food		3%	2
Other		8%	6
No help at the moment		4%	3

A total of 75 respondents answered this question.
Total may be greater than 100% because respondents could choose more than one answer.

Next came the need for better collaboration and partnerships (9%), more volunteers (8%), and better access to food (3%).

The priorities of the organizations for improving their services included offering more initiatives, projects, or collaboration (24%), more local support or engagement (20%), more space, equipment, or facilities (15%), more fresh and varied foods or prepared meals (13%), more funding and resources (12%), and more information and education about nutrition (7%).

Table 36. Priorities for improving community food security

(What would you like to do to improve your services or activities?)

Response	Graph	Percentage	Number
More initiatives, projects, or collaboration		24%	18
More support and local engagement		20%	15
More space, equipment, or facilities		15%	11
More fresh, varied foods or prepared meals		13%	10
More funding and resources		12%	9
More information and education about nutrition		7%	5
Other		5%	4
No improvement		5%	4

A total of 75 respondents answered this question.
Total may be greater than 100% because respondents could choose more than one answer.

Last of all, priorities for the development of food security in communities were collective gardens (31%), information and education about nutrition (31%), collective kitchens (26%), and food buying clubs (23%).

Table 37. Priorities for developing community food security

(What other activity do you wish to develop next to improve food security in your community?)

Response	Graph	Percentage	Number
Community garden/collective garden		31%	24
Information and education about nutrition		31%	24
Community kitchen		26%	20
Food buying club		23%	18
Community food centre based on Toronto's "The Stop Community Food Centre"		14%	11
Representation and advocacy		10%	8
Job seeking help		9%	7
Emergency food aid services (food and/food vouchers)		9%	7
Mutual aid and idea sharing		6%	5
Other		6%	5
None		5%	4

A total of 78 respondents answered this question.
Total may be greater than 100% because respondents could choose more than one answer.

A few organizations identified other activities that were priorities for their communities, such as a community food centre (14%), client representation and advocacy (10%), job seeking help (9%), emergency food aid (9%), or mutual aid and idea sharing (6%).

3.4. FOCUS GROUPS WITH THOSE IN CHARGE OF ORGANIZATIONS OR INITIATIVES

Four focus groups brought together those in charge of community food aid or food security organizations, initiatives, and measures in various communities in urban and rural areas and of different linguistic composition. The results of the discussions make it possible for instance to better understand the communities' approaches to increase food security and their impacts on their well-being. They also help better understand the challenges and the opportunities related to community development, including the optimal practices and the innovative and promising approaches in food security and well-being that are found in the province.

The three main issues the focus groups looked at were sharing responsibility for community food security, the challenges and barriers faced by community organizations and initiatives in their actions aimed at improving local food security, and best practices with respect to community food security, including those related directly to client well-being.

3.4.1. Responsibility sharing

"I think everybody has a piece of it; I mean I think in essence, as humans, we're responsible for our nutritional well-being." (P11)

The issue of sharing responsibility for community food security includes the themes of community engagement, client engagement, the role of local food outlets, the role of the provincial government, and collaboration and coordination of actions.

<u>Community engagement</u>

Community engagement is the core of food security initiatives. It is both a strength and a challenge: a strength because a high level of engagement enables organizations to continue working; a challenge because volunteers seem to be aging and becoming increasingly rare.

Some participants said they had no problem with volunteering. " Except for money, of course. (…) We've never had a problem with getting support from the community. Never. Really, everything we've ever asked for (…), they give us what they can" (P18). Despite this, aging or lack of volunteers is a concern for the majority of stakeholders. "Our oldest volunteer is ninety-six years old. (…) Three youngers are in their lower nineties" (P15). In fact, committed volunteers seem to be a "dying breed" (P6), and "there is no one coming along to take over" (P20).

In this regard, a few best practices were shared during the focus groups. To address the lack of volunteers, several stakeholders had formed partnerships with local schools or universities and received help from at least one student for a few hours every week (P4, P18, and P13). One food bank manager even receives vegetable seedlings from students at the local school. For P6, the solution lies in government employment programs like Youth Employment or the Student Employment Experience Development (SEED) program. Others mentioned the annual contribution of trainees (P10).

<u>Client engagement</u>

A number of participants said they liked the idea of having clients participate more actively in community food security initiatives. However, some disagreed. P13, the manager of an urban food bank, gets help from two clients, but she discourages the practice of having her clients participate.

"We've found that once they saw what we had on the other side of the counter, they thought that they could take more home with them. (…) Basically, our rule is that we do not have people from both, you know, that are recipients." Another food bank manager had asked her clients to help prepare Christmas boxes in 2012. She needed help and wanted her clients to contribute. "Hey, we prepared everything for them. We put things in boxes and bags. The only thing left was, 'sign your name and leave with the box'. So at that point I said, 'Whoa!' (…) Here, take the boxes, take the bags, prepare your food, then here, now, we need some help'. That system works" (P18). Another participant engaged in gleaning during the summer of 2013 and asked her clients to help out. Out of 250 clients, she managed to recruit 24 volunteers to work "8.5-hour days in the fields picking vegetables" (P7). The other participants in this focus group admired her initiative, which led to the creation of jobs for three of her client-volunteers.

In general, client engagement seems to be perceived as a practice that might not only help organizations run more smoothly but might also help clients overcome their dependence on food banks (P6) or at least accept food aid with more dignity. " Some of them are proud of being able to help" (P19).

Role of food outlets

The contribution of food stores is essential for food banks. Food stores can offer them good prices, food donations, or the opportunity to solicit food or funds from the people who shop there. One participant mentioned a Co-op store that provided seeds and tools for a community garden (P19). The big chains like Loblaw's or Wal-Mart have partnerships with Food Banks Canada and donate food to some food banks.

However, the participants noted major barriers that make the contribution of large food stores less efficient and equitable. For instance, a partnership between Food Banks Canada and Wal-Mart matches Wal-Marts up only with food banks in the urban centres in which they are located, excluding smaller organizations on the outskirts of these urban centres.

According to the participants, a great deal of food that could contribute to community food security is wasted. Tim Horton's, for example, refuses to donate its products (including yogourt with fruit) at the end of the day, for fear of ruining their "always fresh" reputation. Also, some food stores throw out products because of Public Health policies.

Role of the provincial government

While the government seems to be seen mainly as a source of grants, the participants also value it as an agent of social change through its implementation of policies.

The sphere of action of the stakeholders consulted was often limited owing to the fact that funding is a constant challenge for them. The grants provided by the provincial government are essential to them. Many of the food bank managers consulted told us about the annual funding they receive from the Province, and each food mentor received training through a provincial grant. Also, a few participants mentioned worthwhile initiatives funded by the government, including a portable kitchen used in community kitchen courses (P3, P18). However, a few stakeholders lamented the short duration of some of the projects funded. "For us, it's (…) ongoing funding to continue our work. We get (…) contracts for maybe three months, or small amounts of money, then we start doing something and then we have to wait several months until we can continue" (P9).

By adopting or modifying policies, the provincial government also has the ability to bring about social change. Some stakeholders called for the implementation of policies to improve food security and precipitate changes in eating habits at the societal level. "I hate that word, "policy," I

almost wish it was driven by, by, community desire and community interest but I think sometimes … you have to set tones every once in a while, like, the school nutrition policy was certainly not well embraced by the schools or by the province when it first came in, but, but there's a relevance to it, if we want a healthy community in the long run" (P11).

Last, certain provincial social policies on social assistance and minimum wage have a more direct impact on people's food security. These policies determine the monthly income of most of the clients of the stakeholders we consulted. The idea of a guaranteed living wage was mentioned by a few participants. "Access to food is such a critical concern but part of the biggest challenge is, is, you know people aren't having enough income to be able to adequately meet their needs, their food needs" (P11). A few participants suggested re-evaluating the policy on household income so that people on social assistance could keep a larger portion of their earned income (P13).

Collaboration and coordination of actions

"Just in here with five of us, we've learned so many things from each other in … an hour" (P14)

In each focus group, we noted a feeling of gratitude of participants for the opportunity to get together and learn about the different initiatives in their region. Overall, the discussions highlighted the need for a more concerted effort to taclke food insecurity. Many participants did not know about the New Brunswick Food Security Network and the Community Inclusion Networks or did not understand their roles. The persons responsible for the food banks did not seem to be well informed about the new initiatives related to the community food security model.

For instance, in the excerpt below, P1 is a food mentor, P2 manages a teaching kitchen program, and P4 is the manager of a food bank.

- P1: But also there's another layer there, the Community Inclusion Network, are you, are you … connected to those?
- P4: Community Inclusion … ?
- P1: Network.
- P4: Network.
- P1: Yes.
- P4: And that's different than the New Brunswick Food Security Action Network?
- P2: Oh, it's … confusing (laughs).

The participants said they wanted to improve communication and cooperation among the various initiatives in the same region. Also, such coordination would probably be more effective if it went from the bottom up. A few participants were concerned about the incoherence that exists between the work of the community inclusion networks and the realities in the field for those who manage food security initiatives (P9, P5). "The thing is … people, most people [involved in the CINs] have gone through things that [name of participant 10] is going through, that [name of participant 8] is going through, that you've gone through, [points to participant 7], that – you really have to go through these things to really get it. The ones who were in charge of each, um, the organization that was there, I think they didn't really see what was going on. Then, "Ah! We'll keep that, we'll do this, we'll do that" (P5).

3.4.2. Challenges

The focus groups enabled us to collect a great deal of information about the challenges facing food security organizations and initiatives, some of which are mentioned above. The other important concerns that were discussed are related to regulations and policies, funding and food

supply, food quality, lack of education about nutrition, inadequate storage space, rural characteristics, prejudices and stigmas associated with food aid, and dependence on food aid.

Regulations and policies and food wastage

"Laws are important, they have to be followed. Public health is important. But …" (P10).

When they receive fresh foods, food bank managers may find themselves trapped by policies. Many participants told us that, when harvest time comes, for example, they would like to be able to can certain foods when they have the chance to receive them in large quantities and then distribute them to their clients. That said, Public Health regulations that prohibit the distribution of canned items (unless a permit has been obtained) are seen as barriers to what is considered a possible solution to farm surpluses and community food insecurity.

There are other regulations for the private sector that frustrate stakeholders, specifically, policies that prevent stores or restaurants from donating certain food items they are going to throw out. "Once, I met with the manager of the Co-op (…). He told me, "we have good food, fresh food, that we could give you, but we're blocked by regulations" (P10). These laws can be frustrating for those in charge of food banks. P18, the manager of a food bank, notes that the local Tim Horton's throws out its yogourt with fruit every day. "*It doesn't make any sense. But, we always have to fight for our… for what we should have, instead of throwing out that food in the trash."*

Funding and food supply

The precarious financial situation of food security organizations was a headache for all the respondents. Short-term government funding for projects does not guarantee the continuity of an initiative, whether it is an excellent one or not. This means interrupting initiatives that might benefit community food security.

Also, since they receive very few food donations, food banks must often buy food, qui represent a heavy burden. Some food banks cannot meet the demand with the financial resources they have. "We had to close our food bank for the month of November because of a lack of resources, especially a lack of financial resources" (P18). In an effort to survive, food banks have to hold fundraisers. In urban areas, they have to be creative because "tout l'monde s'arrache la piastre" (P8).

Food quality

"Three weeks ago we got a truckload of potatoes, in big 4x4 bins. But sometimes in the middle of those potatoes some of them are mouldy, so you have to sort them." (P6)

The food sent to food banks via business donations to the National Food Sharing System is often damaged or expired. Also, organizations that are a bit farther away from distribution centres say they do not receive any fresh foods at all through this system. Several even told us that they had received shipments containing only crackers (P18, P2, P3) or vinegar (P8, P9). To make up for the nutritional deficiencies of donated food, food banks often buy the bulk of the foods they distribute, but the lack of refrigerated space is a major barrier that prevents them from storing fresh foods. It is often impossible for food banks to offer products like fresh milk or eggs owing to lack of space (P18). The gleaning of farm surpluses is an appealing solution, but food banks often do not have the human resources or the storage capacity to take advantage of it (P7). In short, the participants were generally aware that they were not offering foods of the best nutritional quality. Because of major barriers, it is difficult for them to offer much better.

Lack of education about nutrition

The lack of education about nutrition among clients experiencing food insecurity was the topic that came up most often in the focus groups. Education seems to be perceived as a key aspect of any effective long-term action.

Most participants felt that a lack of culinary skills was an important aspect underlying their clients' food insecurity. "They don't know how to cook. They take it out of a box and, put it in a box and then they eat it – still in the box!"(P2). For some participants, this is a deficiency related to an intergenerational cycle (P2, P3, P7 and P11). These types of skills are no longer taught at school (P1, P11). This lack of knowledge may mean that clients miss out on opportunities to eat well because they simply do not know what to do with ingredients of good nutritional value even when they can get them. "I'll get a huge box of avocados and I think, "Oh! I like avocados!" So then I print up a guacamole recipe, I hand them out and everybody was … (she puts on a look of distaste) (P3)". – "Yeah, yeah. They don't know what to do with it" (P2).

Inadequate storage space

The participants often spoke to us about a lack of appropriate space for storing and processing food. Without storage space like a walk-in cooler or a cool box, most food banks are unable to provide their clients with good food (P18). "If I had the choice of buying a dozen eggs instead of giving them a package of wieners, I'd buy the eggs. But I can't store a dozen eggs. I can store a package of wieners" (P18). Also, lack of refrigerated space forces certain food banks to turn down donations of fresh vegetables or fruit they can sometimes get when harvest time arrives (P7, P8).

According to P1, the provincial government has started to support greenhouse or storage projects that would enable farmers to store their harvest (their surplus in particular), thus reducing losses. However, this need is desperately felt by food bank managers "If the government were to supply fridges (…) and freezers to the food banks, then we could meet the nutritional demand" (P15). In addition, P9 mentioned that there is a shortage of certified kitchens for holding collective kitchens, for example.

Rural characteristics

"Food Banks Canada (…) matches food banks with big stores. Well, I said to the[person in charge] think about the rural regions!" (P18)

Rural location implies special difficulties with respect to food security, for both food security organizations and their clients. For P18, the manager of a rural food bank, being located in a rural area means supply difficulties. Her community is 45 kilometres from a town, and that is where she gets most of the food for her boxes. She is frustrated because Food Banks Canada recently formed a partnership with Wal-Mart through which food banks in the municipalities where these stores are located will receive regular food donations. But the food bank she manages will not benefit from this partnership even though she and the members of her community shop at the Wal-Mart in that town regularly.

Then there is the geographic isolation of clients living in small communities. One stakeholder who offers collective kitchens talked to us about this isolation: "In the (name of county) county area, the biggest challenges, the first one is transportation. (…) As for rural, I don't want to say that we have a bigger problem in rural areas than in urban centres, but – we do, because of transportation again, there are people who can get there. I've visited food banks in some regions that hand out meals for three days. If somebody's cheque is for $500, then they pay $25 to get to the food bank because

they have to pay someone's gas to take them to the food bank" (P7). That respondent (P16) also regretted that some of her clients had to pay friends or family to drive them to the food bank.

Prejudices associated with food aid

"We often hear negative things about our service, and ourselves – you know. You hear judgements, you hear things like, "Ah, they don't deserve it, I know her husband works at a nice place." (P21)

The social stigma associated with food bank use has a harmful impact on the volunteer and financial engagement of people in the community. Basically, it is a public relations issue: creating awareness and acceptance of the work done by food banks, "create a positive attitude about the food bank" (P19). "We have to attract sympathy from those who are well off towards those who are judged as, as … millstones around society's neck, if you like" (P21).

For P14, prejudices like "they shouldn't smoke" are harmful because they blame people for difficulties that are often systemic. It is important to educate people and raise public awareness. "There are some ads out recently where, like I picture the woman who's in her house, and I think she's opening up a can of food and the roof blows off and it's a stat around, you know, it's either, you know, housing or food or something like that. But we just need more awareness" (P14).

Dependence on food aid

"We have some who haven't missed a month since '95." (P18)

Dependence on food bank services was discussed in each of the four focus groups. Food bank stakeholders recognize this. "We keep seeing the same faces" (P21). But it is not always easy, or even possible, for food bank managers to address the issue of dependence. "I always say that we are … we aren't doctors, we're just the ones putting a Band-Aid on the boo-boo; we're not there, we're not the ones who will be able to educate, who will be able to … but we've got this clientele … that comes to us. Then, as we work and we see them month after month after month, we keep wondering what we can do to get them out of this dependence" (P21).

For the participants, this dependence is a "mentality" (P7), a "mindset" (P11). The solutions suggested for addressing this dependence require cultural changes, education, and a bit of individual resourcefulness. A participant (P21), for example, does not offer her clients services for more than three months in a row. After three, they have to take a month off. "That also lets us, at the same time, serve more people with the same amount, that was the first goal. But it also allowed us to say, "well, look after yourself for one month out of four" (P21). Also, according to P11 and P21, the charitable intervention attitude should be dropped and replaced by a supportive, educational approach aimed at promoting independence among people experiencing food insecurity.

The community food centre model, which includes cooking courses, buying clubs, and collective gardens, was often mentioned as a practice that would foster greater client independence (P1, P6, P9, P14, P15, P18). According to P5, having clients volunteer might also be helpful in this regard. According to this participant, the experience of working a few hours in exchange for food aid and of chatting with other volunteers might prompt them to rethink their dependence. "Maybe this person would change their ideas, I don't know" (P5). In short, it would appear that food security activities that engage clients – through work or learning – are seen as the most promising way to break the cycle of dependence to food aid.

3.4.3. Best practices: looking to the future

The best practices discussed or adopted by the participants concerned the community food centre model, stakeholder engagement, supplies of fresh local food, and education about nutrition. Other best practices related to client wellness and were therefore directly relevant to the Wellness Strategy of New Brunswick, and included practices relating to client self-sufficiency and food skills and healthy eating.

Community food centre model

The dream of many was the community food centre. Six different participants applauded this model. Many participants noted the long-term inefficiency of food banks as an emergency food aid service. They would like to see the community food aid centre model proliferate in the province, as it has in Toronto and Fredericton. According to a number of stakeholders, this model acts on the causes of food insecurity by involving people in educational activities at an inclusive centre designed to prevent the stigma associated with the charitable model. However, some participants said they did not have the resources or the capacity required to make such a transformation within their organization.

Stakeholder engagement

We noted that a number of stakeholders are dealing with aging volunteers or a shortage of volunteers. To address this challenge, some had adopted strategies that they shared with us during the focus groups. A number of stakeholders mentioned partnerships with local schools or universities. Under these community engagement programs, food banks can receive help from young volunteers every week. “At our food bank, we have three (university) students that come every Wednesday morning at 7 in the morning and sort things out for us. (…) It helps that way” (P3). The focus groups discussed other volunteer partnerships, such as with local employers (P5 and P6), volunteer associations (P13), and groups like the Knights of Columbus (P8).

Government employment programs like Student Employment Experience Development (SEED), the Youth Employment Strategy, and Canada Summer Jobs, are also useful to food security organizations. A few mentioned the contributions of trainees (P10).

According to the stakeholders consulted, civic participation by clients can have benefits for individuals, organizations, and society. A participant (P18), for example, now asks all clients, unless they have a disability, to help in the preparation of their food hamper.

Supply of fresh, local foods

Despite supply challenges, the stakeholders had many good experiences to share with us. Local farmers, stores, and supermarket chains are excellent potential sources of fresh food for food aid organizations. Through these partnerships, food banks may have access to large quantities of products considered unfit for sale. Gleaning in particular is useful for procuring vegetables and fruit. This practice enables farmers to get rid of their surpluses in a way that contributes to community food security. One of the participants had even hired people experiencing food security to help her with gleaning. “In three months I gleaned seven pounds” (P7). Yet some of the stakeholders consulted were facing a few obstacles, such as lack of refrigerated space and lack of volunteers to collect the surpluses available. Helping food banks in their efforts to obtain adequate equipment would help in distributing farm surpluses and certain products removed from the market but fit for human consumption, thus reducing losses and contributing to a better diet for people experiencing food insecurity in our province.

A few stakeholders also received food donations from local community gardens, which seemed to be greatly appreciated because this enabled them to distribute fresh local vegetables to those in need. Stakeholders would like to see more partnerships with community gardens or with people with private gardens who could donate fresh food.

Other good supply strategies include charitable partnerships with employers. (One participant requested one item per month from a large employer in the region. At the end of the month, she would receive a large quantity of one item, such as cereal.) A few stakeholders posted a list of the foods they distributed or needed at the grocery store or in church newsletters. This lets people who want to donate food know what food items are the most appropriate to give to their local food bank.

Last of all, many of the food banks consulted and visited received financial support from a clothes store that sold donations received from the community at an affordable price, enabling people in need to buy various items more easily and helping food banks cover some of their expenses.

Food education

The message is clear: stakeholders want to see more food education initiatives. Teaching kitchens, for example, help people experiencing food insecurity optimize their ability to transform ingredients into meals of good nutritional quality. To adapt education to the resources to which clients generally have access, one of our participants uses recipes that call for items found in the food boxes distributed by food banks (P7). Some participants who do not have the resources to offer cooking courses hand out recipes to clients when they distribute certain unusual foods such as barley, chickpeas, or avocados (P3).

Client self-sufficiency and food skills

"*If they're not included in it, they don't feel, you know, that it's theirs*" (P2)

The stakeholders consulted believe that lack of self-sufficiency (even dependence on food aid) is related to a lack of education and food skills. The food bank managers often told us that they did not have the time, the financial resources, or the space to develop initiatives to increase their clients' self-sufficiency. "We're just the ones putting a Band-Aid on the boo-boo; we're not there, we're not the ones who will be able to educate" (P21). In general, client dependence on food aid is a concern that organizations do not have the time or the capacity to deal with.

Basically, education is perceived as a key element in the development of self-sufficiency. . "We're not educating them with what we give!" (P18). Stakeholders recognize the value and importance of initiatives that engage and inform clients, such as teaching kitchens and community educational gardens. The stakeholders consulted seem to perceive the civic engagement of clients as an excellent way of enabling clients to give something back, which may give them sense of pride (P19) and allow them to take part in the process of becoming more self-sufficient. Several participants therefore see the community food centre model as a viable solution to lack of self-sufficiency and a means for educating people experiencing food insecurity.

Healthy eating

Although the stakeholders consulted were clearly concerned about ensuring a healthy diet for people experiencing food insecurity, a few obstacles stand in the way of achieving that goal, including the limited quantity of food of good nutritional quality, their clients' lack of food skills and the lack of space or adequate equipment for conserving or preserving fresh foods.

First, there seems to be a lack of knowledge about how to prepare food. Because of this, food bank clients do not know, for example, what to do with the "new" healthy foods they sometimes receive, such as barley, squash, or avocados. The good educational practices noted above (teaching kitchens, distribution of recipes, community gardens, etc.) may help people experiencing food insecurity develop their skills. But food bank managers tell us they cannot take on such initiatives owing to lack of funds and time.

Next, some bad eating habits are allegedly based on social myths surrounding healthy eating. Stakeholders told us that clients seem to eat a lot of prepared food. "*My clients would rather have Kraft Dinner or peanut butter and graham and jam.*" Very often, the participants linked this to a lack of kitchen skills and a lack of knowledge about what constitutes a healthy diet. "*People think that Mr. Noodles and pop is nutrition.*" Also, some mentioned the myth that good alimentation is necessarily more expensive, which is, according to one nutritionist, an "*alarming bias*" that must be eliminated.

Raising public awareness of healthy eating was suggested as a solution that might help improve people's nutritional habits and health, whether they are experiencing food insecurity or not (P11, P13).

Refrigeration of fresh foods.

As discussed above, most of the food bank stakeholders and a few of the food mentors we consulted told us that food banks lack space for conserving and therefore distributing fresh foods to people who are experiencing food insecurity and need emergency food aid. The reason for this is not necessarily lack of opportunity: gleaning is a good example of a potential source of fresh foods that was discussed in each of the focus groups. We heard about food banks that sometimes turn down healthy, fresh, local foods simply because of lack of space. So even though food security stakeholders are concerned about healthy eating, they do not always have the infrastructure capacity to contribute to it.

The solution identified by the focus groups was to promote partnerships with community gardens, food mentors, food stores, farmers, and even gardeners within the local population.

3.5. ASSESSMENT OF NUTRITIONAL QUALITY AND SAFETY OF FOOD AID

This fifth and final results section presents the data collected during the visits to food aid organizations that allowed us to assess food aid nutritional quality and safety.

3.5.1. Nutritional quality of food aid

We present here the results of our assessments of the nutritional quality of food aid, which are based on the servings of food groups in Canada's Food Guide and the energy and nutrient content of foods in the food boxes distributed by food banks and the foods served by soup kitchens.

The nutritional quality of the foods received by one food bank is then evaluated using the SAIN-LIM nutritional profile and the glycemic index (GI) of these foods. We therefore characterized on an individual basis the foods received from Food Banks Canada by one food bank in the province.

The food boxes analyzed were from nine food banks (FB1 to FB9): four located in urban areas, two in a small town, and three in rural areas. Five food banks were located in an Anglophone area and four were in a Francophone area. The meals analyzed (suppers) were from two soup kitchens (SK1 and SK2), both located in Anglophone urban areas.

Servings in Canada's Food Guide

The nutritional value of food aid was evaluated first according to the number of servings from each food group in Canada's Food Guide found in the food boxes distributed by the food banks and served in a soup kitchen meal.

Food boxes of food banks

Table 38 presents the results of the food box analysis according to the number of servings from each food group in Canada's Food Guide. To take into account the fact that the boxes were intended to last for a variable amount of time (3 to 7 days depending on the boxes, for one person), the number of servings was expressed per day. The averages were compared to the recommended number of daily servings for an adult woman, age 30 and moderately physically active.

Table 38. Analysis of food boxes of food banks (FBs) in terms of number of servings from each food group in Canada's Food Guide

Underline values : Food groups with a low number of servings (below the recommandation)
Values in bold: Food groups with a high number of servings (above the recommendation)

	Food banks (1 food box for 3 to 7 days, 1 person)											
	FB 1	FB 2	FB 3	FB 4	FB 5	FB 6	FB 7	FB 8	FB 9			
Number of servings (per day) for each food group	5 days Urban, Ang.	7 days Urgan, Fr.	5 days Rural, Ang.	3 days Urgan, Ang.	4 days R/U, Ang.	3 days Rural, Fr.	3 days R/U, Fr.	3 days Urban, Ang.	3 days Rural, Fr.	Mean	Standard	Recommandation
Vegetables and fruit Fresh veg. and fruit included?	6.8 yes	<u>3.1</u> no	<u>3.8</u> no	<u>2.7</u> no	<u>3.0</u> no	<u>3.2</u> no	<u>2.8</u> yes	8.7 no	<u>3.0</u> no	*4.1* 2 yes/9	2.1	6 to 7 servings/day
Grain products Whole grains included?	**8.1** Yes	4.4 No	6.5 No	**11.0** yes	6.4 yes	**17.7** yes	**17.7** yes	**14.0** no	**24.7** yes	**12.3** 6 yes/9	6.8	6 to 7 servings/day
Milk and alternatives Fresh milk products included? Yogourt or cheese included?	0.9 Yes No	0.6 Yes No	0.7 No no	1.5 No no	0.9 No no	1.2 No no	1.3 No no	1.2 No yes	1.2 No no	1.1 2 oui/9 1 yes/9	0.3	2 servings/day
Meat and alternatives Alternatives (ex. eggs, beans) included? Fish included?	1.5 Yes No	**5.9** Yes No	1.6 Yes No	**4.0** Yes yes	**2.9** Yes yes	**6.2** Yes no	**4.7** Yes no	1.5 No yes	**7.0** Yes no	**3.9** 8 yes/9 3 yes/9	2.2	2 servings/day
Other foods (ex. Cookies, Jell-O, fries, sauces)	3.3	6.3	1.2	0.3	8.3	1.3	7.7	6.3	22.3	6.3	6.7	With moderation
Added fat (ex. Margarine, butter, peanut butter)	3.0	3.6	5.0	8.7	2.8	15.0	5.3	0.0	3.0	5.2	4.4	With moderation

The recommandations according to Canada's Food Guide (Health Canada, 2011) for a adult woman of 30 years old.

For two food groups, "Vegetables and Fruit" and "Milk and Alternatives," the average number of servings per day contained in the food boxes was below the recommendation. For these groups, the boxes provided about half (50%) of the recommended number of servings, i.e. 4 per day and 1 per day, respectively, whereas the recommendations were for 7-8 and 2 portions per day, respectively. In other words, for these two food groups, the food boxes, which were meant to last for several days, provided on average enough to meet the daily recommendation for only half of the planned number of days.

For the other two groups, "Grain Products" and "Meat and Alternatives," the average number of servings per day contained in the boxes was above the recommendation. For these groups, the boxes contained about double the recommended number of daily servings, i.e. 12 per day and 4 per day, respectively, instead of 6-7 and 2. In other words, for these two groups, the boxes contained on average enough to meet the daily recommendation for about double the planned number of days.

For the “Other Foods” category, i.e. foods that do not belong to any of the four others groups (for example, cookies, fries, certain sauces), the average number of servings per day was 6, whereas the Food Guide recommends moderation.

Added fats, margarine for example, were also found in amounts considered equivalent to or greater than what is recommended in the Food Guide, i.e. in moderation each day. Note that when peanut butter was included in a food box, part of it was considered “Meat and Alternatives” and part “Added Fat.”

The results tended to vary among the food boxes distributed by the food banks. In table 38, this variability is estimated by the standard deviation value that accompanies the averages. For “Vegetables and Fruit,” the number of servings ranged from 3 portions per day for 7 of the boxes, to 6.8 and 8.7 servings per day for two other boxes (FB1 and FB8). Nonetheless, there is some consistency, i.e. a value of about 3 servings per day (below the recommendation) for 7 out of 9 boxes.

For the “Milk and Alternatives” group, there was less variability, with values ranging from 1 serving per day to about 1.5 servings per day. For the other food groups, the values ranged from 4.4 to 24.7 servings per day (Grain Products), from 1.5 to 7 servings per day (Meat and Alternatives), from 0.3 to 22.3 servings per day (Other Foods), and from 0 or 3 to 15 servings per day (Added Fats).

The greatest variations, in the “Grain Products,” “Other Foods,” “Meat and Alternatives” groups in particular, can be explained by the presence of fairly large quantities of staples or other foods, for example, breakfast cereal (400 g), pasta and/or rice (500 g), meat (450 g), frozen fries (1 kg), frozen pizza (840 g), margarine (280 g), and chocolate cookies (480 g).

Thus, for “Grain Products,” FB9, meant to last for three days, contained a large box of cereal, sliced white bread, a box of dry spaghetti, macaroni and cheese, and four boxes of crackers. For “Meat and Alternatives,” this box contained ground beef, smoked beef sausages, a whole roast chicken, canned turkey, and beans with pork. For the “Other Foods” category, the box contained pizza pockets, two boxes of chocolate cookies, and jam. The abundance of foods in these groups contrasted with small amount of foods in the “Vegetables and Fruit” and “Milk and Alternatives” groups in the box.

The observed variability did not appear to be related to the geographic location (urban, rural) or linguistic situation (Anglophone, Francophone) of the food banks.

From a qualitative standpoint, for “Vegetables and Fruit,” only 2 boxes in 9 contained fresh products. FB1 was an exception: not only did it contain vegetables and fruit in amounts approaching the Food Guide’s recommendation, or about 7 servings per day, but some of these products were fresh, and included green peppers, cucumbers, sweet potatoes, and cantaloupe. For foods in the “Milk and Alternatives” group, 1 box in 9 contained cheese or yogourt. Most often, the food in this category was milk: evaporated milk in 6 boxes and fresh milk in 2.

For “Grain Products,” 6 boxes in 9 included whole grain products, but these were relatively few in number. For “Meat and Alternatives,” 3 boxes in 9 contained fish (sardines in oil and/or canned tuna) and 8 boxes in 9 contained meat alternatives (e.g. legumes, eggs, peanut butter). In all cases, the legumes were canned beans with meat (beans with pork).

Again from a qualitative standpoint, the foods in the boxes were most often processed foods: dry foods (e.g. bread, ready-to-eat cereal, pasta, macaroni and cheese, rice, soups, crackers, cookies, chips), canned foods (soups, vegetables, fruit, sauce, meat, fish), salty meats (e.g. ham, sausages), frozen products (e.g. pizza, fries), or juice. The common versions of these foods, canned in

particular, are known for being very salty, i.e. high in sodium. When vegetables and/or fruit were included the boxes, they were generally canned (e.g. canned vegetables or fruit, vegetable soups, sauces) and therefore salty or with added sugar in most cases.

Soup kitchen meals

The lunches served in two soup kitchens contained an average of 5.5 servings of "Vegetables and Fruit," 4 servings of "Grain Products," 0.5 serving of "Milk and Alternatives," 1.5 servings of "Meat and Alternatives," and 2 servings of "Other Foods" (Table 39).

Table 39. Analysis of soup kitchen (SK) meals in terms of number of servings from each food group in Canada's Food Guide

Underline values : Food groups with a low number of servings (below the recommandation)
Values in bold: Food groups with a high number of servings (above the recommendation)

	Soup Kitchen (1 meal)					
Number of servings (per day) for each food group	SK 1 Lunch meal Urban, Ang.	SK 2 Lunch meal Urban, Ang.	Mean	Standard	Recommandation	Number of portions (per meal) for each food group
Vegetables and fruit	5.0	6.0	5.5	0.7	7 to 8 servings/day	*Vegetables and fruit*
Fresh veg. and fruit included?			2 yes/2			Fresh included?
Grain products	4.0	4.0	4.0	0.0	6 to 7 servings/day	*Grain products*
Whole grains included?			0 yes/2			Whole grains included?
Milk and alternatives	1.0	0.0	0.5	0.7	2 servings/day	*Milk and alternatives*
Fresh milk products included?	Yes	No	1 yes/2			Fresh milk products included?
Yogourt or cheese included?	yes	no	1 yes/2			Yogourt or cheese included?
Meat and alternatives	2.0	1.0	1.5	0.7	2 servings/day	*Meat and alternatives*
Alternatives (ex. eggs, beans) included?	Yes	No	1 yes/2			Alternatives (ex. eggs, beans) included?
Fish included?	no	no	0 yes/2			Fish included?
Other foods (ex. Cookies, Jell-O, fries, sauces)	2.0	2.0	2.0	0.0	With moderation	*Other foods* (ex. Cookies, Jell-O, fries, sauces)
Added fat (ex. Margarine, butter, peanut butter)	0.0	0.0	0.0	0.0	With moderation	*Added fat* (ex. Margarine, butter)

The recommandations according to Canada's Food Guide (Health Canada, 2011) for an adult woman of 30 years old.

In other words, on average, each meal provided more than half (>50%) of the number of recommended servings from the "Vegetables and Fruit," "Grain Products," and "Meat and Alternatives" groups, but only a quarter (25%) of the recommended number of servings from the "Milk and Alternatives" group.
Added fats were not included in the analysis, but they were generally available (e.g. margarine) at the meals served by these organizations.

The variability (standard deviation) was not as high as for the analyses of the food boxes distributed by the food banks.

Energy and nutrient content

The nutritional value of food aid was then assessed according to the energy and nutrient content of the foods in the food boxes distributed by the food banks or served by the soup kitchens.

Food boxes distributed by food banks

Table 40 present the results of the analysis of the food boxes according to energy and nutrient content. Six SAIN nutrients (protein, dietary fibre, vitamin C, folic acid, calcium, and iron) and three LIM nutrients (sodium, added sugar, saturated fats) were considered. The results are presented in terms of quantity, expressed on a daily basis, and percentage of daily nutritional requirements (%

of energy requirement and % of the Dietary Reference Intake (RDI) for the nutrients) provided by each box. The nutritional requirements used to conduct the analyses were those of an adult woman, aged 30 and moderately active physically.

Table 40. Nutrient and energy contents (expressed per day) of food boxes prepared by food banks (FB)

Underline values: Low nutrients content (% RDA <50%)

High energy or nutrients content (% RDA or % UL >110%, or % exceeding the maximum value established)

	Food Banks (1 food box for 3 to 7 days, 1 person)										
Energy and nutrients provided (per day) and % of daily needs met	FB 1 5 days Urban, Ang.	F 2 7 days Urban, Fr.	FB 3 5 days Rural, Ang.	FB 4 3 days Urban, Ang.	FB 5 4 days R/U, Ang.	FB 6 3 days Rural, Fr.	FB 7 3 days R/U, Fr.	FB 8 3 days Urban, Ang.	FB 9 3 days Rural, Fr.	Mean	Standard
Energy (kcal/j)	3 031,2	3 294,0	2 745,0	3 982,8	3 642,7	6 426,1	5 460,7	4 403,4	8 618,0	4 622,6	1 909,2
% of energy requirement	**151,5**	**165,0**	**137,2**	**199,0**	**182,0**	**321,0**	**273,0**	**220,0**	**430,9**	**231,1**	95,4
Nutrients SAIN											
Proteins (g/d)	94,6	155,2	71,0	124,2	105,3	203,7	167,0	112,5	248,3	142,4	56,7
% RDA	**206,0**	**337,0**	**154,4**	**270,0**	**229,0**	**443,0**	**363,0**	**245,0**	**539,8**	**309,7**	123,2
Density (g/d/100kcal)	3,1	4,7	2,6	3,1	2,9	3,2	3,1	2,6	2,9	3,1	0,6
Fibre (g/d)	53,2	17,5	21,4	46,9	33,9	89,0	50,0	34,7	76,2	47,0	23,7
% RDA	**213,0**	69,9	85,4	**187,7**	**135,8**	**356,0**	**200,0**	**139,0**	**304,8**	**187,9**	95,0
Density (g/d/100kcal)	1,8	0,5	0,8	1,2	0,9	1,4	0,9	0,8	0,9	1,0	0,4
Vitamin C (mg/j)	262,2	54,4	47,8	45,6	68,0	22,0	85,4	240,7	112,8	104,3	87,5
% RDA	**350,0**	72,5	63,7	60,7	90,6	29,4	**114,0**	**321,0**	**150,4**	**139,1**	116,7
Density (g/d/100kcal)	8,6	1,7	1,7	1,1	1,9	0,3	1,6	5,5	1,3	2,6	2,7
Folic acid (mcg/d)	390,6	297,0	332,1	804,5	600,2	809,1	2 037,3	1 348,0	1 379,0	888,6	589,0
% RDA	97,6	74,3	83,0	**201,1**	**150,0**	**202,3**	**509,3**	**337,0**	**344,7**	**222,1**	147,2
Density (g/d/100kcal)	12,9	9,0	12,1	20,2	16,5	12,6	37,3	30,6	16,0	18,6	9,4
Calcium (mg/d)	884,4	854,2	730,0	1 201,9	806,0	1 111,0	1 840,0	676,5	1 469,8	1 063,8	386,1
% RDA	88,4	85,0	73,0	**120,1**	80,6	**111,0**	**184,0**	67,6	**147,0**	106,3	38,6
Density (g/d/100kcal)	29,2	25,9	26,6	30,2	22,1	17,3	33,7	15,4	17,1	24,2	6,5
Iron (mg/d)	21,9	20,1	18,0	24,5	21,1	43,1	77,8	77,0	79,6	42,6	27,7
% RDA	**121,0**	**111,0**	100,1	**136,3**	**117,2**	**239,5**	**432,0**	**427,9**	**442,0**	**236,3**	153,7
Density (g/d/100kcal)	0,7	0,6	0,7	0,6	0,6	0,7	1,4	1,7	0,9	0,9	0,4
Nutrients LIM (to be limited)											
Sodium (mg/j)	5 811,0	6 722,8	6 116,8	7 669,3	4 941,6	9 897,8	9 787,0	9 316,8	17 804,9	8 674,2	3 873,1
% RDA	**253,0**	**292,0**	**265,9**	**333,4**	**214,8**	**430,3**	**425,0**	**405,1**	**774,1**	**377,1**	168,4
Density (g/d/100kcal)	191,7	204,1	222,8	192,6	135,7	154,0	179,2	211,6	206,6	188,7	28,2
Added sugar (g/d)	nd	nd	nd	nd	110,1	nd	153,0	nd	272,2	178,5	84,0
% total energy intake (recommendation: <10%, WHO or <25%, Health Canada)	nd	nd	nd	nd	**12,1**	nd	**11,2**	nd	**12,6**	**12,0**	0,7
Density (g/d/100kcal)							2,8		3,2	3,0	0,3
saturated fatty acids (g/d)	27,2	45,0	32,2	42,0	52,0	69,6	63,1	18,0	62,2	45,7	17,6
% total energy intake (recommendation: <10%)	8,1	**12,3**	**10,6**	9,5	**12,8**	9,8	**10,4**	3,8	3,8	9,0	3,3
Density (g/d/100kcal)	0,9	1,4	1,2	1,1	1,4	1,1	1,2	0,4	0,7	1,0	0,3

UL: Tolerable Upper Intake Level (daily); RDA: Recommended Dietary Allowance Health Canada, 2010); nd: not determined

On average, the food in the boxes provided more than double (>200 %) the daily nutritional requirement for energy and the following SAIN nutrients: protein, folic acid, and iron (see DRI %). For dietary fibre, the boxes provided on average between 150% and 200% of the daily requirement (DRI). For vitamin C and calcium, they provided about 100% of the daily requirement.

In other words, for energy, protein, folic acid, and iron, the contents of the boxes on average met the daily requirements for more than twice the planned number of days for each box. However,

for vitamin C and calcium, the boxes contained just enough to meet requirements for the planned number of days.

The relatively high energy contents need to be seen in relation to the fact that the boxes often contained one or more staples (cereal, pasta, potatoes) and/or foods in the "Other Foods" and "Added Fats" categories (e.g. pizza, fries, cookies, margarine). These foods have a very high energy density and can generally last more than the planned number of days for each box. FB9, for instance, contained many foods of this type, which explains the high values observed for energy and for several nutrients.

The boxes' relatively high protein and iron contents need to be seen in relation to the large number of servings from the "Meat and Alternatives" group. For iron, some boxes also contained iron-enriched foods, for example, cereal. The high folic acid content also needs to be seen in relation to the large number of servings from the "Grain Products" category, some of which were enriched with folic acid. As for the high dietary fibre content, it needs to be seen in relation to the presence in several boxes of meat alternatives (e.g. baked beans in 6 of the 9 boxes) and certain whole grain products.

For calcium and vitamin C, the relatively low contents need to be seen in relation to, respectively, the small number of servings from the "Milk and Alternatives" and "Vegetables and Fruit" groups, fresh vegetables and fruit in particular.

The nutrient for which the average content of the boxes most exceeded the nutritional requirements was sodium, limited consumption of which is recommended (LIM nutrients). For this nutrient, the boxes provided more than five times (550%) the daily requirement. This corresponded to more than 3.7 times (377%) the daily tolerable upper intake level (UL). The amount of sodium in all the boxes, without exception, exceeded the UL by 200%. These very high values need to be seen in relation to the preponderance of processed foods in the food boxes.

With respect to the other LIM nutrients, on average, the added sugars in the boxes corresponded to about 12% of total daily energy intake. This value is greater than the maximum threshold value that the WHO recommends not be exceeded (10% of total energy intake) but lower than the maximum value identified by Health Canada (25% of total energy intake).

For saturated fats, the boxes contained on average an amount corresponding to about 9% of the total daily energy intake. This value was just under the maximum threshold that Health Canada recommends not be exceeded, i.e. 10% of total energy intake.

As with the results expressed in number of servings from the groups in Canada's Good Guide, the results for nutrient and energy contents tended to vary between the food boxes (see standard deviations). For example, for vitamin C, the percentage of the RDA provided by the boxes ranged from 29% (FB6) to 350% (FB1). The observed variability does not point to any particular association with the geographic location or the linguistic situation of the food banks.

Soup kitchen meals

The nutrient and energy contents of the lunches served in the soup kitchens are presented in Table 41. On average, those meals provided about 67% of the daily energy requirement, 87% of the daily protein requirement, and more than 50% of daily requirements for dietary fibre, vitamin C, and iron. For folic acid and calcium, they provided less than 50% of the daily requirements.

Table 41. Nutrient and energy content (expressed per day) of meals served by soup kitchens (SK)

Underline values: Low nutrients content (% RDA <50%)

High energy or nutrients content (% RDA or % UL >110%, or % exceeding the maximum value established)

	Soup Kitchen (1 meal)				
Energy and nutrients provided (per day) and % of daily needs met	SK 1 Lunch meal Urbain, Ang.	SK 2 Lunch meal Urbain, Ang.	Mean	Standard	Energy and nutrients provided (per meal et % des besoins quotidiens comblés
Energy (kcal/j)	1 621,0	1 053,0	1 337,0	401,6	Energy (kcal/meal)
% of energy requirement	81,0	52,5	66,8	20,2	% of energy requirement
Nutriments SAIN					Nutriments SAIN
Proteins (g/d)	45,4	34,6	40,0	7,6	Proteins (g/repas)
% RDA	98,0	75,0	86,5	16,3	% RDA
Density (g/d/100kcal)	2,8	3,3	3,0	0,3	Density (g/d/100kcal)
Fibre (g/d)	12,2	15,9	14,1	2,6	Fibres (g/meal)
% RDA	49,0	64,0	56,5	10,6	% RDA
Density (g/d/100kcal)	0,8	1,5	1,1	0,5	Density (g/d/100kcal)
Vitamin C (mg/j)	53,7	45,2	49,4	6,0	Vitamin (mg/meal)
% RDA	72,0	60,0	66,0	8,5	% RDA
Density (g/d/100kcal)	3,3	4,3	3,8	0,7	Density (g/d/100kcal)
Folic acid (mcg/d)	164,4	142,5	153,4	15,5	Folic acid (mcg/meal)
% RDA	41,1	35,6	38,3	3,9	% RDA
Density (g/d/100kcal)	10,1	13,5	11,8	2,4	Density (g/d/100kcal)
Calcium (mg/d)	556,0	317,0	436,5	169,0	Calcium (mg/meal)
% RDA	56,0	32,0	44,0	17,0	% RDA
Density (g/d/100kcal)	34,3	30,1	32,2	3,0	Density (g/d/100kcal)
Iron (mg/d)	10,4	10,0	10,2	0,3	Iron (mg/meal)
% RDA	58,0	55,0	56,5	2,1	% RDA
Density (g/d/100kcal)	0,6	0,9	0,8	0,2	Density (g/d/100kcal)
Nutrients LIM (to be limited)					Nutriments LIM
Sodium (mg/j)	3 332,0	1 960,0	2 646,0	970,2	Sodium (mg/meal)
% RDA	**145,0**	85,0	**115,0**	42,4	% RDA
Density (g/d/100kcal)	205,6	186,1	195,8	13,7	Density (g/d/100kcal)
Added sugar (g/d)	40,0	16,0	28,0	17,0	Added sugar (g/meal)
% total energy intake (recommendation: <10%, WHO or <25%, Health Canada)	9,9	6,0	7,9	2,7	% total energy intake (recommendation: <10%, WHO or <25%, Health Canada)
Density (g/d/100kcal)	2,5	1,5	2,0	0,7	Density (g/d/100kcal)
saturated fatty acids (g/d)	24,3	8,0	16,1	11,6	saturated fatty acids (g/eal)
% total energy intake (recommendation: <10%)	**13,5**	6,8	**10,2**	4,7	% total energy intake (recommendation: <10%)
Density (g/d/100kcal)	1,5	0,8	1,1	0,5	Density (g/d/100kcal)

UL: Tolerable Upper Intake Level (daily); RDA: Recommended Dietary Allowance Health Canada, 2010); nd: not determined

For sodium, the meals provided on average more than 1.7 times (170%) the daily requirement, which corresponded to about 1.15 times (115%) the tolerable upper intake level, that is, the

maximum value that Health Canada recommends not be exceeded. For added sugar, the average amount corresponded to about 8% of total energy intake, which was slightly below the maximum value recommended by the WHO.

SAIN-LIM nutritional profile of foods received by one food bank

The results of the individual characterization of foods using the SAIN-LIM profiling method are presented in Figure 6. The food characterized came from a list of foods received from Food Banks Canada by one food bank in the province. This list contained only dry foods, canned foods, and juice. SAIN and LIM scores were calculated for each food item, making it possible to group these foods into four broad categories (Figure 6).

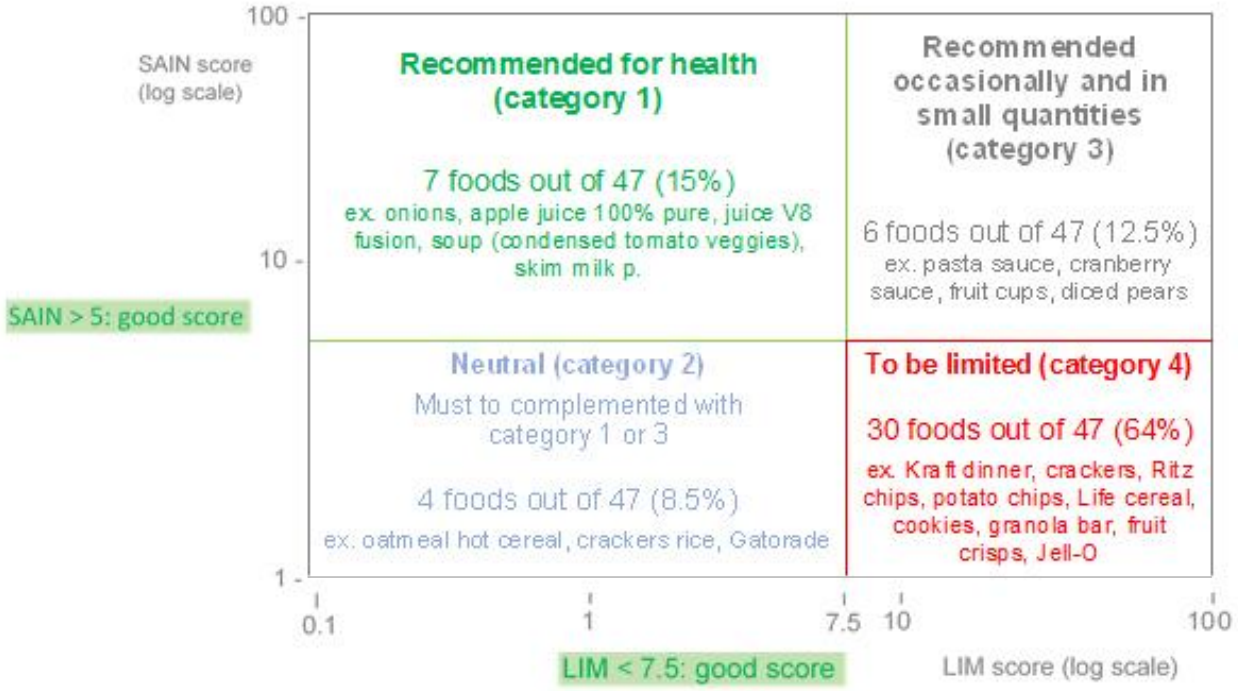


Figure 6.Characterization according to SAIN and LIM scores of foods on a list of foods received from Food Banks Canada

Of the 47 foods characterized, 30 (64%) belonged to category 4: foods to be limited because of their low nutritional quality. Included in this category are macaroni and cheese (Kraft Dinner), salted crackers, ready-to-eat cereal, fruit crisps, gelatin-based desserts (Jell-O), cookies, and chips. These foods are high in salt and/or saturated fats (LIM nutrients) and relatively low in protein, dietary fibre, vitamin C, calcium, and iron (SAIN nutrients).

Only 7 of the 47 foods (15%) belonged to category 1: foods of good nutritional quality recommended for health. These included fresh onions, vegetable and fruit juices, tomato and vegetable soup, and low-fat powdered milk.

Intermediate categories 2 and 3 contained, respectively, 4 foods (8.5%, for example, pasta, oatmeal, rice crackers) and 6 foods (12.5%, for example, regular tomato sauce (salted), canned fruit, fruit cups).

Foods in categories 1 and 2 have the best nutritional quality and contain relatively little salt and/or saturated fats. The foods in categories 3 and 4 generally offer the least nutritional quality and contain more salt, added sugar and/or saturated fats. If we group together the foods in categories 1 and 2 and those in categories 3 and 4, there were 11 foods (23.5%) in the first two categories and 36 (76.5%) in the last two categories.

The preponderance of foods in categories 3 and 4, the least nutritionally desirable, can be explained by the high proportion of processed foods that are high in salt, added sugar and/or saturated fats (e.g. crackers or cookies, ready-to-eat cereal, canned vegetables and fruit, salty meat-based products).

Glycemic index of foods received by one food bank

The results of the characterization of carbohydrates based on their glycemic index (GI) are presented in Figure 7. More than half of the foods characterized (31 out of 60, or 52%) had a moderate GI, i.e. GI value between 56 and 70, and a third (20 out of 60, 33%) had a low GI, i.e. less than or equal to 55. Nine foods (15%) had a high GI.

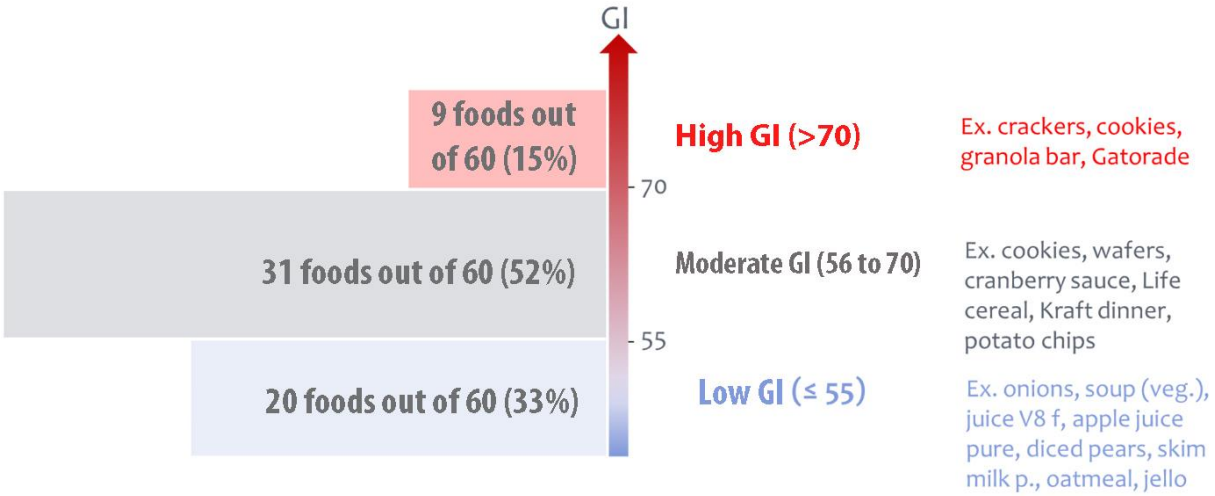


Figure 7. Characterization according to glycemic index (GI) of foods on a list of foods received from Food Banks Canada

For GI, the recommendation is to opt for foods with a low to moderate GI. Many of the foods characterized seem to meet this criterion.

Note that some of the foods with a low GI fall into category 1 or 2, the most nutritionally desirable categories according to the SAIN-LIM classification system. This is the case, for instance, for onions, powdered milk, oatmeal, and certain vegetable and fruit juices. Unfortunately, foods that have both a low or moderate GI and fall into categories 1 or 2 were under-represented in the food aid (food boxes) according to the results of this study.

3.5.2. Food aid safety and freshness

Below, we present the data collected during our visits to organizations to evaluate food aid safety. The results relating to the main criteria used to assess food safety within the organizations visited are presented in Tables G1 and G2 (see Appendix G) for the food banks and soup kitchens,

respectively. In Table G3, we present additional information about food losses in the organizations visited.

Food bank cleanliness
Criterion: “General upkeep of premises, including storage areas”

For the six food banks visited, the following observations were made (Table G1): The storage areas were generally adequate, clean, and in good condition (5 organizations). However, the floors in one needed to be swept and washed. In another, the cold room for fruits and vegetables was not well laid out. Space in one food bank was limited but well maintained. One food bank needed another freezer.

Criterion: “Handling practices (handwashing facilities, risk of cross-contamination, etc.)”

In the six food banks visited, the type of handling done varied (Table G1). In one food bank, there were no handwashing facilities other than those in the washrooms, whereas in another, there were several handwashing stations. At three food banks, the manager had food hygiene and safety training and certification, at another, the manager had taken the Community Food Mentor training. Another practice, mentioned by one organization, was the inspection of foods received and during storage. However, some practices could pose contamination risks, such as empty cardboard boxes on the floor in one cold room, in contact with vegetables.

Soup kitchen cleanliness
Criterion: “General upkeep of premises, including storage areas”

All three of the soup kitchens visited had well-maintained work areas. The storage areas were adequate, clean, and well organized (Table G2).

Criterion: “Handling practices (handwashing facilities, risk of cross-contamination, etc.)”

In the three soup kitchens visited, the kitchen was equipped with a handwashing station. Handling practices varied. One respondent said the premises were sanitizing at the end of each day. Two respondents reported that the employees wore gloves. The employees of one soup kitchen wore hairnets. Two respondents said that the head cook had training in food hygiene and safety. One indicated that the premises were inspected regularly by Public Health, and another said it was subject to the same inspections as restaurants (Table G2).

Food losses: food banks and soup kitchens
The issue of food losses was discussed during our visits to the organizations (Table G3). In general, the managers (six for food banks, two for soup kitchens) said their losses were quite low. They mentioned a number of ways of reducing such losses: the purchase of fresh, unexpired foods by the organization itself; proper management of food stocks; use of surpluses (e.g. giving surpluses to clients, giving food bank surpluses to a neighboring soup kitchen and vice versa); and following the guidelines of Public Health and Food Banks Canada. Two factors that resulted in losses were mentioned: lack of storage space and donations of expired food.

4. DISCUSSION OF RESULTS AND RECOMMENDATIONS

This section highlights the main findings of our study and discusses them in the light of existing practices and desirable practices for addressing food security and food insecurity in New Brunswick. Recommendations are proposed to help develop programs, actions, and public policies concerning food security and nutrition in the province.

This study is the first of its kind to be carried out in New Brunswick. To get as complete a picture as possible of community food security in the province, a mixed research methodology and a variety of complementary methods and techniques were used to collect and analyze data. We looked at several factors in relation to community food security, including language, rural or urban location, the food environment, public policies, inequalities, and public health and nutrition, specifically the nutritional quality and safety of food aid.

4.1. APPROACHES TO FOOD INSECURITY AND FOOD SECURITY

"We're not doctors, we're just the ones putting a Band-Aid on the boo-boo."

Food insecurity is a complex issue that is influenced by a number of factors and involves a number of stakeholders from several sectors. That is why we must make every effort to search for solutions from a global perspective that reflects this complexity. But before we discuss solutions, it is important to review the challenges facing stakeholders who want to improve food security. Through our study, we were able to identify a number of obstacles and challenges facing stakeholders. These obstacles relate to funding, volunteers and human resources; lack of space, storage and equipment capacity; poor participation by people experiencing food insecurity; geography; high prices; food variety and quality; food knowledge and cooking skills among users; and regulations.

Lack of resources (human and financial, space, equipment) is the biggest obstacle. Funding and the collection of donations are ongoing challenges for many. The instability of food and monetary donations is quite widespread. Volunteering is another fragile resource. Volunteer aging is making some worry about difficulties when it comes to recruiting new volunteers. Yet our results suggest that there are people to carry on among those responsible for community food security initiatives, although a significant number of them are over the age of 65. The situation could actually be even more critical in the charitable food aid sector. Lack of refrigerated space, for example, may prevent some food banks from storing fresh foods.

Distance and geographic isolation can also be obstacles, putting remote regions at a disadvantage. Isolation can sometimes poses challenges in terms of distance and transportation for organizations that want to procure fresh or frozen foods. For users, isolation may compromise access to food services. A rural location therefore presents particular difficulties relating to food security, for both food security organizations and their clients.

The concentration of resources in urban areas presents another challenge for rural areas. For example, the contribution of large food stores favours urban regions. The concentration of resources in urban areas may also pose a challenge for the stakeholders who work there. Indeed, to survive, food banks have to raise funds. In urban areas, competition is fierce.

The quality of foods received by the organizations may also be an obstacle, because the foods donated are sometimes old or expired, and their nutritional value is not always very good. The participants were aware of this and did their best to adjust. Some identified supply sources that

provided foods of good quality, fresh foods in particular, but they also identified obstacles limiting access to these sources and the conservation of perishable goods.

Regulations can be an obstacle as well. For example, the fact that food banks are not permitted to process food is an obstacle. At harvest time, many participants would like to process certain foods in order to preserve them for distribution at a later date. But Public Health regulations authorize this only under certain conditions.[58] Other regulations that apply to the private sector prevent stores and restaurants from donating certain foods, which they have to throw out. Most of the respondents hoped to find ways to reduce food wastage.

Last of all, we saw that clients' lack of food skills and information makes it more difficult to achieve the objective of healthy eating.

This review of obstacles provides an initial overview of possible solutions that could be explored in an effort to facilitate the work of stakeholders.

It is difficult for the stakeholders in food insecurity to act on the causes of that problem and on the socio-economic structure that leads to it. They are aware that they act, modestly, on the effects of food insecurity. The main factor contributing to food insecurity is without a doubt poverty. We saw that even plans and government measures aimed at reducing poverty are limited to addressing the symptoms, not the causes. Poverty reduction itself is just as complex an issue, and one that may require changes in economic structure to allow for better redistribution of wealth.

Since poverty is the main determinant of food security, solutions for increasing the purchasing power of low-income New Brunswickers need to be considered. Although flexibility seems to be quite limited, government decisions have an impact on vulnerable, food-insecure populations. For instance, the government sets the minimum wage and social assistance amounts. We saw that many of the people who use food aid services receive income assistance and that a significant proportion are wage earners. In fact, the vast majority of food-insecure households depend on wages, and the vast majority of social assistance recipients are food insecure as well. We therefore believe some analyses need to be done to determine the minimum wage and the levels of social assistance required to ensure a food-secure population.

Minimum wage

Low-income earners are very often paid minimum wage or a wage that is only slightly higher. They work full time or part time, mainly in the service sectors (Galarneau and Fecteau,for Statistics Canada, 2014), including retail sales, restaurant services, and accommodations, as well as in seasonal industries. The economic situation of these members of the "working poor" is becoming more and more precarious, and these people make up a large majority of food-insecure households (Tarasuk *et al.*, 2013, 2015) and a growing share of the clientele of food banks and soup kitchens (Food Banks Canada, 2013, 2014, 2015).

The minimum wage in New Brunswick has long been among the lowest in Canada despite irregular increases implemented prior to 2012 and quite recently in December 2014. In the absence of an adequate policy for setting the minimum wage, the minimum wage in New

[58] This restriction arises from the very status of "food bank." By definition, a food bank receives and redistributes food. Its status does not allow it to produce or process food. If food banks want to produce or process food, they must for all practical purposes change their status and become a "food production and distribution enterprise." Regulation 2009-138 (Government of New Brunswick, 2009b) respecting food premises set out different categories of premises, requirements, licences, and permits.

Brunswick stagnated, starting in April 2012 (Hill, 2014), while it rose in the other provinces and even undergoes an annual increase in the neighbouring province of Nova Scotia.

The provinces of Ontario and Nova Scotia both recently adopted an annual minimum wage indexation policy, thus helping to maintain the purchasing power of low-income earners, despite inflation caused by the rising cost of living. Without indexation, erosion of the purchasing power of low-income households becomes one of the causes of their growing economic difficulties, in particular, food insecurity, since food accounts for a greater portion of their expenses than it does for other households, in addition to being a more flexible expense than other basic needs like housing.

Yet we have also seen that the increase in food costs has been substantial for at least the past 20 years and remains so. The cost of more healthy foods increases more rapidly than the cost of less healthy foods (Jones *et al.*, 2014) and may even increase more quickly than the cost of living in general. The erosion of the purchasing power of low-income households combined with the larger increase in the prices of healthier foods therefore limits their healthy food choices (Monsivais *et al.*, 2012), which may contribute to food insecurity and even to social inequalities in health (Jones *et al.*, 2014). That is why indexing the minimum wage to the cost of living is necessary, although this alone is not sufficient to maintain the food purchasing power of low-income households.

Minimum wage indexation also offers the advantage of ensuring that increases are regular, gradual, and therefore predictable for both low-wage workers and employers (Hill, 2014). A number of analysts used to be afraid that the minimum wage or its increase would lead to a rise in unemployment among unskilled workers, because employers would then be forced to make up for this increase in their payroll by cutting back on hiring. Yet recent research on this indicates that such effects would be minimal or even negligible.

> ...two recent meta-studies analyzing the research conducted since the early 1990s conclude that the minimum wage has little or no discernible effect on the employment prospects of low-wage workers. [...] probably the most important channel of adjustment is through reductions in labor turnover, which yield significant cost savings to employers (Schmitt, 2013).

After decades of debate on this matter, it seems that more and more, if not most, economists now see a reasonable increase in the minimum wage and its indexation to the cost of living to be a desirable policy since the costs are sufficiently small compared with the benefits to low-skilled workers (IGM Forum, 2013).

A policy of gradual, predictable increases in the minimum wage is therefore a desirable compromise in a context where "public policy must balance the beneficial income and equity affects from increasing the minimum wage against the adverse employment effects" (Myatt and McDonald, 2010, p.85), especially for teenagers who are the first to be affected by a decline in low-skilled jobs when they are seeking to enter the labour market on a part-time basis or for a summer job, for instance.

Since minimum wage policy is essentially a provincial jurisdiction in Canada, it is an excellent, and often used, way for progressive provincial governments (Dickson and Myatt, 2002) to help households that are among the most disadvantaged even if they are active on the labour market. A provincial minimum wage policy is the least costly and most effective redistribution tool for provincial governments (Fortin and Lemieux, 2000). Its redistributive effects would be almost as a great as those of all government transfer programs (Fortin and Lemieux, 2000) because, even though the minimum wage is common among teenagers, it is people in low-income households

who make up the largest proportion of minimum wage workers and therefore benefit the most from its increase (Fortin and Lemieux, 2000; Bernstein and Parrott, 2014).

It appears that it would be possible to make more use of this effective redistribution tool within limits not affecting employment to address income inequalities that cause poverty and food insecurity. Other research specific to New Brunswick would be necessary to verify this. Note that some authors even propose raising the minimum wage gradually to limit the negative effects on employment until it reaches a living wage level for low-wage workers (Brennan and Stanford, 2014).

At the very least, annual indexation of the minimum wage to the cost of living or the cost of food, if the latter is higher, would enable low-wage workers to maintain their food purchasing power. A modest increase in the minimum wage would then help, in the short term, reduce the economic difficulties of low-wage workers, while having little impact on employment (Bernstein and Parrott, 2014). These measures would thus help maintain and even improve household food security, because, as we have seen in this study and as shown by other researchers (Tarasuk *et al.*, 2013, 2015), food insecurity is directly associated with economic difficulties caused by household low incomes.

Social assistance

People on social assistance are the most vulnerable and the most at risk for food insecurity, largely because their incomes are among the lowest in society and becoming increasingly unable to meet their basic needs, particularly in New Brunswick (Tweddle *et al.*, 2014). Social assistance levels in New Brunswick are the lowest in Canada (Tweddle *et al.*, 2014). In 2013, a single person received only $6,807 annually, barely 39% of the cost of meeting basic needs to live modestly in Moncton, for example (Tweddle *et al.*, 2014). Note well that, in New Brunswick, two-thirds of social assistance recipients are food insecure (Tarasuk *et al.*, 2013, 2015) and make up the majority of food bank and soup kitchen users in the province (Food Banks Canada, 2014, 2015). Their daily living conditions cause them permanent financial difficulties and stress, which underlie their food insecurity and their health problems, respectively (Ross and Mirowsky, 2010).

The cost of poverty in New Brunswick includes nearly $200 million in health expenditures, as well as a shortfall in terms of loss of productivity of between $100 and $200 million for the provincial government (MacEwen and Saulnier, 2011). The authors of this cost estimate note that the provincial government has not only a moral obligation to improve the lives of people living in poverty, it also has the means. These health care expenditures and this shortfall in terms of loss of productivity could be reduced by investing in social programs to provide adequate social assistance benefits for ensuring decent living conditions and food security for the most vulnerable. In fact, it is difficult to imagine how achieving food security is possible without an increase in their income.

In this regard, it might be worthwhile to look further into the case of Newfoundland and Labrador, where social assistance levels have increased substantially since 2006, particularly for single mothers and couples with children (Tweddle *et al.*, 2014). For example, the benefits for a single mother reached 80% of the cost of a modest, basic standard of living in St. John's. One might think this is linked to the fact that Newfoundland and Labrador is the only province in Canada where a decrease in food insecurity has been observed between 2007 and 2012 (Tarasuk *et al.*, 2013; Tarasuk and Shimmin, 2016), but further research would be needed to verify this.

Unfortunately, the most vulnerable people generally suffer from poor representation and advocacy,[59] which has prompted some authors to hope for some politicization of the role of food aid and food security organizations (Scholms, 2005). The chief argument for a more political orientation, complementary to work in the field, is that food aid or food security-promoting actions (whether of charitable, community, or other origin) need some political weight to achieve their goals of reducing poverty and increasing community food security. Combining a response mission with a political role seeks to ensure better cohesion of actions in order to increase their impact. We believe the coming together and development of these two missions are important levers for future action aimed at developing community food security and reducing poverty in New Brunswick. However, not all organizations and initiatives have the capacity to play such a representation and advocacy role on behalf of their users, especially small organizations or those specialized in one type of food aid or food security activity. It might therefore be worthwhile to set up and support such a role through a regional or provincial group. However, there is the New Brunswick Common Front for Social Justice (NBCFSJ) for which the fight against poverty and impoverishment is one of its priorities. That organization sees food banks as a solution that must be temporary, but that must nonetheless be better funded. For the NBCFSJ, the solution requires a better social safety net[60].

Some stakeholders are hoping for a more fully developed public debate and some political thinking on poverty, food insecurity, and food security, in relation to social justice, because, according to them, this political tradition or this political weight is relatively scarce in New Brunswick, when it comes to reducing poverty and increasing food security. There have certainly been some recent worthwhile developments in connection with this (reviewed in section 3.1), but government plans and programs, and particularly political engagement in food security and poverty reduction, are sometimes considered insufficient in certain regards (e.g. lack of concrete direction or orientation, few targeted objectives, few tangible measures, no time frames).

For these reasons, several researchers (Racine, 2007; Power, 1999) have warned decision-makers and stakeholders against increasing the number of initiatives that focus on food security and community food security. Such initiatives should not replace or overshadow those concerning the right to an adequate income and a decent livelihood, including the right to food. These are rights that must be brought to the forefront, because the eradication of food insecurity requires structural antipoverty actions (McIntyre, 2011, 2003). The challenge is therefore to strike a better balance between the two forms of actions such that they contribute effectively to reducing poverty and social inequalities.

Education and collaboration

Another cause of food insecurity is people's lack of food knowledge and skills. A number of respondents said that a large proportion of food aid recipients have some deficiencies in this regard. Information and education for members of the public and users appear to be promising avenues for helping people make informed dietary choices and for increasing their food security through the development of cooking skills.

Some respondents were critical of the mentality or culture of dependence on the part of certain users. Some respondents believe it would be more appropriate to promote increased self-

[59] With respect to social assistance, the abrupt closure in 2012 of the National Council of Welfare by the federal government is an illustration of this.

[60] New Brunswick Common Front for Social Justice (2010a). Les banques d'alimentation : remède temporaire à l'insuffisance de la couverture sociale. Retrieved May 1, 2015 from http://frontnb.ca/Document/banques-alim.pdf

sufficiency and social inclusion among users. Some are in favour of making a transition from a charitable food aid model to a community model based on participation, training, and inclusion. The provincial government's *New Brunswick Economic and Social Inclusion Plan 2014-2019* is intended to facilitate this type of transition for food banks.

The findings of our study show that there are quite a few food aid and food security organizations and initiatives in New Brunswick. Charitable and community action is quite well developed, but aid organizations often operate in a vacuum, with little synergy and no real cooperation or coordination, which limits their broader impact. It therefore seems that a shared vision and mechanisms for coordination and exchange should be encouraged and developed. In our view, this is even more desirable because most organizations, whether charitable, community, or governmental, face common challenges, the main one being lack of financial, physical, and human resources.

The government can therefore play a role by coming up with policies that provide the organizations and stakeholders involved in reducing food insecurity with some direction. It can also put in place a strategy or framework to facilitate collaborative work among the various stakeholders concerned with the issue of food security and to coordinate activities and efforts in the field. Several respondents noted the benefits of working together. By basing their action on community resources, they run the risk of seeing the appearance of regional food aid disparities based on the resources available in the regions and communities. We have observed major differences in capacity between organizations. For example, the supply system of Food Banks Canada seems to maintain these disparities in capacity by determining its food distribution according to the organization's previous capacity. The government can also ensure that all regions, particularly the more remote ones, benefit from food aid services that correspond to the needs of the population and not to their earlier capacity or resources in their communities. The government must make sure that all regions, including remote regions and communities, benefit from adequate food aid services.

As we have seen, the New Brunswick government's approach is already based on collaborative work with community stakeholders in order to reduce poverty and food insecurity and increase population wellness. We have seen an effort to harmonize initiatives in various departments in order to create synergy and combine their efforts. Also encouraged is cooperation between departments and community stakeholders and among stakeholders themselves. In the field, we have seen that stakeholders hope to work together more. They feel the need to work together to meet the challenge of food insecurity. In this regard, efforts should be made to adopt common approaches and establish mechanisms for coordinating and exchanging information and analyses. The elements of best practices could certainly increase the impact of initiatives designed to increase food security in New Brunswick. Furthermore, several respondents found it hard to understand the role, or were even unaware of the existence, of the New Brunswick Food Security Action Network and the community inclusion networks. A number of respondents believe the government should do more to eliminate barriers to cooperation in the field, particularly when it comes to regulations.

All stakeholders from the various sectors have a role to play in improving food security in New Brunswick, however, flexible structures must be put in place to facilitate the coordination of activities and provide direction. The government is in the best position to provide this impetus and put in place a framework that would make it possible to approach the issue of food security in a comprehensive manner.

Evaluation of interventions

Results-focused management and accountability procedures in the context of partnership work no doubt pose challenges. There need to be some mechanisms to ensure that the efforts made and the resources mobilized produce the anticipated results in the field. Rigorous, independent, formative mechanisms for evaluating the impact of community actions therefore need to be developed. The Department of Social Development has completed a program evaluation of 45 community food action projects from 2012-2013 and 2013-2014. The recommendations from the evaluators were used to inform several process improvements in the program. A further, more in-depth independent evaluation would bring together optimum conditions for an objective analysis of the actions taken. A formative evaluation would help improve practices at all levels, aimed at reducing food insecurity significantly and sustainably in the province. It would also help increase awareness and knowledge of practices that have proven their worth (evidence-based supporting data) and better coordinate the different initiatives.

Note that the national organization of community food centres, Community Food Centres Canada (CFCC), has developed an evaluation strategy that the province could use to evaluate the impact of food security actions. This strategy sets out ways to identify indicators for measuring the impacts of community food centres across Canada (see quotation below, from the CFCC):

"CFCC's Evaluation Strategy

Understanding and reporting on the collective impact CFCs have across Canada is key to CFCC's strategy. To that end, we have developed a robust evaluation framework that allows us to measure and demonstrate impacts in areas such as health, social inclusion, civic engagement and sustainable food systems, and to continuously improve our interventions in order to maximize social impact.

Our evaluation strategy has four primary objectives:

1. To identify and capture appropriate indicators to measure short, medium and long-term impacts across all CFCs.
2. To introduce practical and easy-to-use tools that make evaluation easier.
3. To develop evaluation activities that are respectful of program participants.
4. To ensure that information collected is used to make changes at both the program and agency levels."

It would be counterproductive for New Brunswick to reinvent the wheel with a strategy or indicators that are separate from or not complementary to the CFCC's. To monitor food insecurity and track the evolution of community food security in New Brunswick, it would be worthwhile to define and use indicators complementary to those used by the CFCC or in pan-Canadian surveys (e.g. population surveys). An evaluation of needs and results underpins the food security reference framework of the Government of Quebec as well (Gouvernement du Québec, 2008) (see section 3.1.6., Figure 4).

4.2. NUTRITIONAL QUALITY AND SAFETY OF FOOD AID

Our study is the first to provide an overview of the nutritional quality and safety of food aid offered by community organizations in New Brunswick. The use of complementary data collection methods (visits to organizations, survey, focus groups) enabled us to corroborate, and in some cases, expand upon our findings. Thematic literature reviews were also carried out to take stock of what is known about the nutritional quality and safety of food aid offered in Canada and other industrialized countries.

Our findings point to a number of weaknesses and limitations concerning the nutritional quality and freshness of food aid. Most of the provincial findings mirror the conclusions of the studies identified in sections 3.1.4 and 3.1.5 (nutritional quality and safety, respectively). These findings will serve as a basis for the recommendations presented in the following section (4.3 Priority Measures and Recommendations) for improving the nutritional quality and safety of food aid offered in New Brunswick.

Nutritional quality of food aid

Food boxes (food banks)

The case studies that we did show that the food boxes distributed by the food banks (n=9 organizations) generally consisted mainly of foods in the grain products, meat and alternatives, and other food groups (foods that are generally less nutritious). In addition, they offered many fewer foods in the vegetables and fruit and milk and alternatives groups, particularly fresh products. Fresh vegetables and fresh dairy products were particularly under-represented.

Consequently, in general, there was a marked imbalance between the food types found in the boxes: lots of grain products, meat and alternatives, and low-nutrient foods and few vegetables and fruit and milk and dairy products. For these last two groups, the scarcity of fresh products such as fresh vegetables and fresh dairy products was noted. Most foods in the boxes were processed foods, including canned goods, many of which are high in salt and of average or low nutritional quality.

Similar findings were reported in other studies done in New Brunswick (Villalon, 1998) and elsewhere (Starkey, 1994; Teron and Tarasuk, 1999; Bunney, 2006; Darmon *et al.*, 2006b; Irwin *et al.*, 2007; Hoisington *et al.*, 2011). However, it should be noted that, for foods in the meat and alternatives group, our results indicate that they were included in the boxes in abundance, providing almost double the Food Guide's recommendation for an adult woman, while in other studies, these foods were present in amounts that did not meet the recommendation of the Food Guide (Villalon, 1998; Bunney, 2006; Irwin *et al.*, 2007).

The results of the survey on the content of food boxes (n=32 respondents) supported our findings during our visits to organizations. For grain products, for example, a higher proportion of respondents indicated that food like macaroni and cheese, white bread, and ready-to-eat cereal (foods of average or low nutritional quality) were generally included in the boxes distributed by their organization. Very few respondents indicated that they usually distributed foods of better nutritional quality, such as oatmeal and whole wheat bread, which are higher in fibre and certain vitamins and may contain less added sugar. For vegetables, fruit, and meat and alternatives, a higher proportion also reported that they usually distributed canned or otherwise processed goods that are relatively high in salt and/or sugar. Very few said that they regularly distributed fresh vegetables and dairy products other than milk.

On the whole, the participants in the focus groups seemed aware that their organizations did not always offer foods of the best nutritional quality. They mentioned a certain number of barriers to explain this situation (see section 4.1 Approaches to food insecurity and food security).

In the survey, more than half of the respondents described the nutritional quality of the foods provided through the National Food Sharing System of Food Banks Canada as somewhat poor or very poor. This finding is significant because, according to our study, this system is one of the organizations' three main food sources, after grocery store purchases and food donations by individuals. In comparison, most respondents described the nutritional quality of foods from other

sources as somewhat good or excellent: grocery stores, food donations by individuals, local agricultural producers, community or collective gardens. Unfortunately, these last two sources (local agricultural producers and gardens) are not among the main supply sources of organizations offering food aid in the province.

Lack of diversity of the foods received by food banks, particularly those provided by Food Banks Canada, was among the challenges mentioned by the focus group participants. To address this, several said it was important for their organization to be able to buy foods when they had sufficient funds and adequate storage and refrigeration capacities. Other studies have noted the often-limited diversity of the foods distributed by food banks (e.g. Teron and Tarasuk, 1999; Hamelin *et al.*, 2002; Darmon *et al.*, 2006b).

The analysis of nutrient and energy contents pointed to a second imbalance, resulting from the first. While the contents of the boxes generally provided more than double the daily requirements for energy and for several SAIN nutrients (protein, folic acid, iron) and nearly double the requirement for dietary fibre, they barely met the daily vitamin C and calcium requirements, estimated for an adult woman.

The boxes' high energy content can be explained by the abundance of foods with a high energy density. For iron and dietary fibre, the high contents can be explained by the presence of meat and alternatives, including legume-based alternatives, and foods high in iron. The presence of enriched foods, such as certain grain products, can also be explained in part by the boxes' high folic acid content. The relatively low vitamin C and calcium contents can be compared to the results of studies that have shown that the composition of food boxes did not meet daily requirements for these two micronutrients (Starkey, 1994; Teron and Tarasuk, 1999; Bunney, 2006; Irwin *et al.*, 2007). They need to be seen in relation to the small amounts of fresh vegetables and fruits and dairy products, respectively, in the boxes.

Our study is one of few to have quantified the sodium content in food aid. The sodium content of the food boxes was excessively high for all the boxes analyzed. On average, the boxes contained an amount of sodium that was 5.5 times the daily requirement and more than 3.7 times the tolerable upper intake level. A study done in France also concluded that the food boxes distributed by food aid structures contained too many salty products (Darmon *et al.*, 2006b). For the Canadian population in general, the daily intake of sodium is estimated to be 2.3 times the daily requirement and 1.5 times the tolerable upper intake level (Heart and Stroke Foundation of Canada, 2014).

In this study, the average added-sugar content exceeded the maximum value established by the WHO but not that established by Health Canada. For saturated fats, the content was just under the maximum value established by Health Canada.

The composition and nutritional characteristics of the food boxes analyzed in our study varied considerably, but the findings presented above apply generally. This variability did not point to any particular association with the geographic location (urban, rural) or linguistic situation of the food banks.

Meals (soup kitchens)

On average, the lunches served by the soup kitchens (n=2 organizations) provided more than half of the recommended number of servings for foods in the vegetables and fruit, grain products, and meat and alternatives groups but only a quarter of the recommended number of servings for foods in the milk and alternatives group.

On average, these meals provided more than 60% of the daily energy requirement, more than 80% of the daily protein requirement, and 50% of the daily requirements for dietary fibre, vitamin C, and iron, but less than 50% of the folic acid and calcium requirements. The average amount of sodium provided by the meals was high: 1.7 times the daily requirement and 1.15 times the tolerable upper intake level. For saturated fats, the average amount corresponded to the maximum value recommended by Health Canada. For added sugars, the level was below the values recommended by the WHO and Health Canada.

The survey results pertaining to foods served most often at lunch (n=8 respondents) support these observations. Few foods or beverages high in calcium were served at this meal.

Few studies on the nutritional quality of meals offered by soup kitchens appear to have been done. According to a study done in 20 cities in the United States (The Urban Institute, 1989), variety, evaluated on the basis of the number of food groups represented in each meal, was satisfactory for lunches and suppers, with more than 50% containing almost all the food groups. According to this study, an average meal provided more than 50% of the daily nutritional requirements for protein and vitamin C and 50% or less of the calcium requirement. For women, this meal provided only 40% of the daily iron requirement. The average energy content of the meals was about 40% and 50% of the daily recommendation for men and women, respectively (The Urban Institute, 1989), compared with 60% in this study for female subjects.

SAIN-LIM characterization and glycemic index (GI)

SAIN-LIM nutritional profiling, used to characterize the foods received by one food bank, indicated that most of these foods (more than 75%) were in the category of foods with the least nutritional quality, while a small proportion belonged to the category of foods recommended for health (15%) or neutral (less than 10%).

This finding is a concern. It mirrors the results of the case studies, the survey, and the focus groups, which all indicated that food aid (particularly food boxes) consists of foods that are excessively high in sodium and of poor or average nutritional value, particularly foods in the “Other” category, as well as those in the grain products, vegetables and fruit, and meat and alternatives groups, which are based on refined grains, often sweetened and salty, and canned or other salty and/or sweetened preparations.

More than half of the carbohydrates characterized had a moderate glycemic index and a third had a low GI, which is consistent with the recommendation that preference should be given to carbohydrates with a low to moderate GI. However, among the foods with a low to moderate GI, very few were in either of the two food categories with the best nutritional value overall (categories 1 and 2 according to the SAIN-LIM classification).

Implications

Our findings concerning nutritional quality largely corroborate the conclusions of the studies that were looked at. Our review indicates the existence of a broad consensus to the effect that the food aid offered by charitable organizations alone cannot adequately meet all the nutritional requirements of adults in good health.

Two main deficiencies were observed, both in the literature and in the study: (1) the limited variety of the foods offered, and (2) a major imbalance characterized by the predominance of highly processed foods of moderate or low nutritional quality, at the expense of fresh or little-processed foods of better nutritional quality. This results in a preponderance of foods with a high energy density, a low nutritional density (low levels of a number of vitamins and minerals, which varied

according to the studies), and a high level of salt. The result is that the aid provided is generally low in a number of essential nutrients, e.g. certain vitamins and certain minerals, and high in others, sodium and certain energy nutrients in particular.

Although important, this food aid does not really help recipients acquire good eating habits because it provides them with foods of average or low nutritional quality. Also, it may contribute to a continuing dependence on foods that are very salty and/or sweet and ready to use, which are the foods most commonly offered.

Our study suggests that the observed imbalances and deficiencies are not the same for food boxes (food banks) and meals (soup kitchens).

Although the nutritional imbalances shown in this study are not specific to the foods included in food aid,[61] they could be exacerbated by food aid (food boxes, meals) if its composition is not changed to reflect public health concerns about the chronic diseases associated with a poorly balanced diet.

A number of the imbalances brought to light can have serious health repercussions, especially for children and teenagers and other vulnerable groups such as seniors and pregnant women, if they rely too much and too frequently on food aid. These imbalances may also have a detrimental effect on the health status of people who are overweight or have health problems, whether diagnosed or not (e.g. prediabetes, hypertension, hyperlipidemia, osteoporosis, depression).

For all age groups, the very high sodium content of the food boxes and meals we analyzed is a major concern. The abundance of foods of poor or average nutritional quality in the food boxes is another concern. These foods often fall into the “Other” category in the Food Guide, but they are also present in a number of food groups (e.g. vegetables and fruit, grain products), particularly if the foods are processed and non-perishable.

Overall, the deficiencies noted may exacerbate the nutritional and health vulnerability (increased risk for malnutrition, overweight, obesity, and other social inequalities in health associated with food insecurity) of people who use food aid regularly.

To address this situation, we believe it is necessary and urgent to implement incentives and corrective actions, at several levels, in order to improve the composition of the food included in food aid in the province. We also believe it is important to better take into account the nutritional and health vulnerability of food aid beneficiaries. The practices of all stakeholders should reflect this vulnerability, and adapted tools should be developed as well, for example, nutritional standards or guidelines, along with mechanisms for improving the nutritional quality of the foods distributed. Our recommendations in this regard are set out in section 4.3 (Priority Measures and Recommendations).

Food aid safety and freshness

The review of the literature on this theme raises two concerns: food freshness (foods donated to the organizations and foods distributed) and food safety, particularly when perishable goods are stored, handled and/or processed. The lack of freshness of the foods distributed is a frequent problem that was reported in several studies done in Canada (Teron and Tarasuk, 1999; Hamelin

[61] These imbalances also characterize the food intakes of Canadians in general (Garriguet, 2007a, 2007b; Heart and Stroke Foundation of Canada, 2014).

et al., 2002) and the United States (Verpy *et al.*, 2003). According to these studies, beneficiaries felt that the foods they received were not always fresh.

Reported cases of food poisoning attributed to foods distributed or offered by food aid organizations appear to be relatively rare, but they indicate that greater vigilance is needed owing to how dangerous they are. The cases that we reviewed, which occurred in 2012 and 2010, respectively, in the United States involved meals served by charitable organizations – in one case, a homeless shelter in the city of Denver (60 people hospitalized), and in the other, a soup kitchen in the state of Tennessee (26 people affected) (Inman, 2013).

In addition to the risks inherent in food and food handling, there are also risks associated with beneficiaries who may be more vulnerable to the risks of food poisoning, either because of their age (e.g. children, seniors) or pregnancy, or because of their health status (e.g. people with one or more chronic diseases or nutritional deficiencies, or whose immune system is weakened) (Government of British Columbia, 2006a).

In our study, during the visits we made to organizations, there were no apparent major problems with food safety in the food banks and the soup kitchens (6 and 3 organizations, respectively) that participated in the study.

Note that, owing to the limitations of this study, we were unable to do a detailed assessment of safety-related practices. Our findings are based solely on visual observations and other information collected during our visits. These visits were relatively short (not long enough for a detailed inspection of the premises, rooms, equipment, or current practices), and no samples or measurements were taken. In situ samples and measurements (e.g. food storage and cooking temperatures) would have been necessary to confirm that the practices observed complied with the food safety standards in effect.

From the standpoint of food safety regulations, some organizations were going through a period of transition, that is, they were in the process of obtaining a class 3 or 4 premises licence. Such a licence has been mandatory since the *Food Premises Regulation* (2009-138) under the *Public Health Act* of New Brunswick came into force. Food banks and soup kitchens are among the establishments subject to this regulation.

However, the survey and focus groups brought to light a number of concerns the organizations had about food freshness. These concerns related primarily to the following:

1. Lack of freshness of foods received by the organizations, for example, donations of expired foods: mouldy fruits and vegetables, foods past the best before date, etc.;
2. The limited capacity of certain organizations for storing and refrigerating the fresh products they receive (lack of refrigeration equipment and space);
3. Lack of funds for buying fresh foods.

Of the main food sources of the organizations, the National Food Sharing System of Food Banks Canada was the one with the most mixed freshness rating, according to our study. Forty percent (40%) of the survey respondents described the freshness of the foods received from Food Banks Canada as somewhat poor, while 53% described it as somewhat good or excellent (7%). The issue of damaged or expired foods or containers provided for food banks through food donations by businesses or the National Food Sharing System was also raised by the participants in the focus groups.

During our visits to the organizations (case studies), several managers indicated that the lack of freshness of certain foods received and a limited capacity for storing fresh foods could result in food losses.

4.3. PRIORITY MEASURES AND RECOMMENDATIONS

Our recommendations are based on the literature reviews, as well as on the results of the data collected during the course of our study.

In general, we consider three measures to be priorities to reduce food insecurity and increase food security in New Brunswick.

a) Develop a provincial strategy to increase cooperation, collaboration, and the impact of actions taken;
b) Identify, improve and increase the number of best practices in the field and of government measures effective to impact on the root causes of food insecurity;
c) Improve the quantity and the quality of food aid in order to better reflect regional disparities and the economic, nutritional, and health vulnerability of people experiencing food insecurity.

Based on those priorities, we offer six recommendations, each one with a set of suggestions for practical actions:

1. Develop a provincial food security action strategy or intervention framework.

1.1. Develop a coordinated, multisectoral and comprehensive strategy.
1.2 Establish multisectoral government food security policy directions.
1.3. Ensure participative and integrated management of food resources.
1.4. Evaluate the impact that implementing the strategy has on social development and community development.

2. Encourage cooperation, collaboration, and intersectoral partnerships to promote resource sharing, joint projects, and the development of synergies in order to increase food security.

2.1. Promote the transfer of knowledge and the sharing of information and expertise.
2.2. Promote cooperation among partners and increase collaboration and resource sharing.
2.3 Establish or strengthen local and regional mechanisms for cooperation.
2.4 Hold annual regional events to raise public awareness and promote exchange and stakeholder cooperation.
2.5 Develop linkages with public health, agriculture sector and agri-food sector interventions.

3. Better document, share, and increase best practices in the field with respect to food security.

3.1. Identify, document, and support practices in the field that have proven their worth.
3.2. Support the development and transfer of knowledge and information sharing about effective practices and actions.
3.3. Support the transition towards models that facilitate resource sharing (e.g. community food centres), local food production and community development.
3.4. Identify indicators for evaluating the individual and collective impact of food security.

4. Identify and strengthen effective government measures in order to act on the root causes of food insecurity.

4.1. Identify the most effective structural measures in the other provinces.
4.2. Index the minimum wage annually to the cost of healthy eating
4.3. Evaluate the possibility of further increasing the minimum wage.
4.4. Increase social assistance benefits to ensure the food security of recipients.
4.5. Strengthen social housing programs.
4.6. Develop and support public transit initiatives or carpooling in rural areas.
4.7. Adopt legal recognition of the social economy and of everyone's right to adequate food.

5. Improve the quantity and nutritional quality of food aid, taking into account regional disparities and the economic, nutritional, and health vulnerability of people experiencing food insecurity.

5.1. Better define the provincial funding criteria for food aid in order to remedy regional and local disparities and establish funding proportional to the needs and prevalence of food insecurity within populations.
5.2. Promote the availability of food and access to food of good nutritional quality in disadvantaged neighborhoods or remote communities.
5.3. Better take into account the economic, nutritional, and health vulnerability of people experiencing food insecurity.
5.4. Explore avenues for improving the nutritional quality of foods provided through the National Food Sharing System of Food Banks Canada and by other enterprises.
5.5. Develop recommendations, tools, policies or regulations for improving the nutritional quality of foods available to people experiencing food insecurity.
5.6. Adopt guidelines for reducing the inclusion of salty and sweetened foods in food aid.
5.7. Adopt guidelines for increasing the inclusion of fresh fruits and vegetables and milk products and alternatives (perishable goods) in food aid.
5.8. Explore the feasibility of a mechanism such as a provincial program that helps food aid services purchase foods of good nutritional quality.
5.9. Promote, in areas that are less well served, the establishment of community food sources offering foods of good nutritional quality at affordable prices.
5.10. Develop community actions to help people experiencing food insecurity develop their nutritional knowledge and skills.
5.11. Evaluate the availability of food aid programs in the schools in the province.
5.12. Evaluate periodically the outcomes of actions designed to improve the nutritional quality of foods available to people experiencing food insecurity.

6. Ensure that food security stakeholders comply with food safety guidelines and the *Food Premises Regulation*.

6.1. Continue food safety training activities.
6.2. Make it easier for organizations to access equipment and facilities for transporting, preparing, and storing, refrigerating, or freezing.
6.3. Carry out campaigns to encourage the donation of healthy or fresh foods.
6.4. Promote safe practices for reducing food wastage.

CONCLUSION

Our goal was to gain a better understanding of social and government responses to the problem of hunger in the Canadian province of New Brunswick. Our literature reviews showed the complexity of the issue and also offer a perspective that is relevant to the issue being examined and useful to community and government stakeholders.

The data available indicate that food insecurity is persistent and has even increased over the past few years, both in New Brunswick and across Canada. This suggests that the economic development model of Canadian society has certain limitations when it comes to methods of inclusion and social participation. The welfare state model, which took over from civil society and community support networks in the 1960s, was increasingly questioned the 1980s and 1990s. That was when we saw new community initiatives, such as food banks, appear to compensate for the failure of the economy and the safety nets put in place to protect the most vulnerable populations. These initiatives draw on community-based resources and form a social economy for the most disadvantaged members of society.

Our initial findings provide a portrait of the current situation of food aid and food security in New Brunswick based on the urban or rural, community, and food contexts of communities. The original data we collected using various methods enabled us to describe and evaluate the approaches and practices of community initiatives promoting food security within the province's communities. This body of knowledge and empirical data enabled us to define measures to be taken with respect to food security in New Brunswick.

Although food aid organizations and initiatives are now essential, they have a number of major limitations rendering them inadequate for reducing food insecurity. The primary difficulties compromising their mission lie in their limited capacities and impacts and existing regional disparities when it comes to the provision of their services, particularly between urban and rural areas. Community organizations and initiatives do not make it possible to increase food security, either, owing mainly to the poor quality of the foods that they receive or that are economically accessible to them and that they must redistribute to their users.

Comprehensive visits to organizations would be useful for better documenting the experience and best practices of communities and schools with respect to food security. Future research might also help to broaden the geographic accessibility of food aid or even the spatial and economic accessibility of healthy food sources, such as certain food outlets and community or collective gardens in New Brunswick, especially in disadvantaged urban neighborhoods and suburban and rural areas. Further studies would also be necessary to determine the minimum wage and levels of social assistance required to ensure food security for the entire population.

With growing engagement in, and political support for, food security in New Brunswick, we see a big change taking shape, and once that change comes about, the combination of the political and the pragmatic approach within a broader dialogue among stakeholders and greater coherence in their actions should give new impetus to the development of community food security and poverty reduction in the province.

REFERENCES

Action against Hunger (2010). *Food Security and Livelihoods Assessments: A Practical Guide for Field Workers*. ACF International.

Agence de la santé et services sociaux de Montréal (2011). Les inégalités sociales de santé à Montréal. Le chemin parcouru. Rapport du directeur de santé publique 2011. Gouvernement du Québec.

Agence Régionale de Santé Midi-Pyrénées (2014). Cahier des charges. Appel à projets « Alimentation, prévention précarité », France.

Alaimo, K., Packnett, E., Miles, R. A., & Kruger, D. J. (2008). Fruit and vegetable intake among urban community gardeners. *Journal of Nutrition Education and Behavior*, 40(2), 94-101.

Alberta Health Services (2010). Guidelines for the distribution of donated foods. Retrieved August 29, 2013 from http://www.albertahealthservices.ca/EnvironmentalHealth/wf-eh-guide-distribution-donated-food.pdf

Anawati, M. (2007). Les banques alimentaires dans les communautés francophones d'Ottawa : à la fois stratégies et barrières à la sécurité alimentaire?, *Reflets*, *13*(1).

Anawati, M. (2006). Les banques alimentaires dans les communautés francophones d'Ottawa : à la fois stratégies et barrières à la sécurité alimentaire?, Master thesis, non published, Université d'Ottawa, École de service social, Ottawa.

Anderson S. A. (1990). Core indicators of nutritional state for difficult-to-sample populations. *Journal of Nutrition*. 120, 1559-1600.

Atkinson, F. S., Foster-Powell, K., & Brand-Miller, J. C. (2008). International tables of glycemic index and glycemic load values: 2008. *Diabetes Care*, 31, 2281-2283, appendices 1-58.

Augustin, L. S., Franceschi, S., Jenkins, D. J., Kendall, C. W., & La Vecchia, C. (2002). Glycemic index in chronic disease: A review. *European Journal of Clinical Nutrition*, *56*, 1049-1071.

Barbier, J-C. (2009), Le workfare et l'activation de la protection sociale, vingt ans après : beaucoup de bruit pour rien? Contribution à un bilan qui reste à faire. *Lien social et Politiques*, *61*, Spring, 23-36.

Barre, D. E., Mizier-Barre, E., & Macintyre, P. (2011). Socioeconomic factors and their relation to eating habits in two communities in Nova Scotia, Canada, *Journal of Hunger & Environmental Nutrition*, *6*(4), 497–505.

Barrett, C.B. (2010). Measuring food insecurity. *Science*, *327*, 825-828.

Bartfeld, J., & Wang, L. (2006). *Local-level predictors of household food insecurity*. Rochester: Social Science Research Network.

Beauchemin, J., Boismenu, G., Bourque, G., Duchastel, J., & Noël, A. (Eds.) (1995). L'État dans la tourmente, numéro thématique, *Cahiers de recherche sociologique*, *24*, 276 p.

Béland, N., Forgues É., & Beaudin, M. (2010). Inégalités salariales et bilinguisme au Québec et au Nouveau-Brunswick, 1970 à 2000. *Recherches sociographiques*, *51*(1-2), 75.

Bennett, M. K. (1954). *The World's Food*, New York, Harper & Brothers, 282 p.

Bernstein, J., Parrott, S. (2014). Proposal to strengthen minimum wage would help low-wage workers, with little impact on employment. Washington: Center on Budget and Policy Priorities. Retrieved from http://www.cbpp.org/files/1-7-14minwg.pdf

Bidwell, S. (2009). Food security. A review and synthesis of themes from the literature. New Zealand: Canterbury District Health Board. Retrieved September 14, 2013 from http://www.ana.org.nz/sites/default/files/A%20review%20and%20synthesis%20of%20themes%20from%20the%20literature_0.pdf

Blanchet, C., & Rochette, L. (2011). *Sécurité et insécurité alimentaire chez les Québécois : une analyse de la situation en lien avec leurs habitudes alimentaires*. Québec : Institut national de santé publique du Québec.

Blouin, C., Lemay, J.-F., Ashraf, K., Imai, J., & Konforti, L. (2009). *Local food systems and public policy: A review of the literature*. Équiterre & The Centre for Trade Policy and Law: Carleton University.

Brennan, J. et Stanford, J. (2014). Dispelling Minimum Wage Mythology. Recupéré à http://www.livingwagecanada.ca/files/8714/1389/3517/Dispelling_Minimum_Wage_Mythology.pdf

British Columbia Association of Farmers Markets (2013). Trucs pour magasiner aux Marchés Fermiers. Retrieved August 19, 2013 from http://bcafm.files.wordpress.com/2013/06/fmncp-participant2013_french-cad_final.pdf

British Columbia Centre for Disease Control, Food Protection Services (2006a). Food safety guidelines for food banks, 19 p.

British Columbia Centre for Disease Control, Food Protection Services (2006b). Food safety guidelines for soup kitchens, 21 p.

British Columbia Ministry of Health (s.d.). Food security. Retrieved January 2, 2014 from http://www.health.gov.bc.ca/healthyeating/foodsecurity.html

British Columbia Ministry of Health (2011). Evidence review: Food security. Retrieved June 29, 2013 from http://www.health.gov.bc.ca/public-health/pdf/food-security-evidence-review.pdf

Buisson, M. (2013). *Conquérir la souveraineté alimentaire*. Paris: L'Harmattan.

Bunney, A. (2006). Researching the nutritional impact of food hampers in BC: An intern's experience. *Canadian Journal of Dietetic Practice and Research, 67*, 6.

Burlingame, B., & Dernini, S. (Eds.) (2012). Sustainable diets and biodiversity. Directions and solutions for policy, research and action. Proceedings of the *International Scientific Symposium Biodiversity and Sustainable Diets United Against Hunger*, (pp. 3-5, November 2010). Rome: FAO Headquarters.

Burns, C. (2004). A review of the literature describing the link between poverty, food insecurity and obesity with specific reference to Australia. *VicHealth*, Melbourne. Retrieved Septembre 24, 2013 from http://secure.secondbite.org/sites/default/files/A_review_of_the_literature_describing_the_link_between_poverty_food_insecurity_and_obesity_w.pdf

Caillavet F., Darmon N., Lhuissier A., & Régnier F. (2006). L'alimentation des populations défavorisées en France : synthèse des travaux dans les domaines économique, sociologique et nutritionnel, in *Les travaux de l'Observatoire national de la pauvreté et de l'exclusion sociale 2005-2006*, Paris : La documentation française, 279-322.

Campbell, C.C. (1991). Food insecurity: a nutritional outcome or a predictor variable? *Journal of Nutrition*, vol. 121, p. 408-415.

Carmichael, S. L., Yang, W., Herring, A., Abrams, B., & Shaw, G. M. (2007). Maternal food insecurity is associated with increased risk of certain birth defects. *Journal of Nutrition, 137*, 2087-2092.

Carter, M. A., Dubois, L., Tremblay, M. S., & Taljaard, M. (2012). Local social environmental factors are associated with household food insecurity in a longitudinal study of children. *BMC public health, 12*, 1038

Chambers, R., & Conway, G.R. (1992). Sustainable rural livelihoods: practical concepts for the 21st century. *IDS Discussion Paper 296*. Publisher IDS, Brighton. Retrieved June 2, 2013 from http://www.ids.ac.uk/files/Dp296.pdf

Charlebois, S., von Massow, M., Tapon, F., van Duren, E., Uys, P., Pinto, W., & Summan, A. (2014). *Food price report 2015*. Rapport sur les prix alimentaires à la consummation 2015. Guelph: The Food Institute of the University of Guelph.

Charlebois S, Tapon, F, van Duren E, von Massow M., & Pinto W (2013). *Food price index 2014*. Index des prix alimentaires à la consommation 2014. University of Guelph Economic Brief, 20 p.

Charlebois, S., Tapon, F., von Massow, M., van Duren, E, Pinto, W., & Moraghan, R. (2012). *Food price index 2013*. Guelph: University of Guelph, College of Management and Economics.

Chen, J., & Che, J. (2001). Food insecurity in Canadian households [1998/99 data]. *Health Reports, 12*(4), 11-22.

Cohlmeyer, E., Corey, S., Hussaini, Z., Langlois, N., & Sato, M. (2012). *Challenges and opportunities of developing community food centres in rural and small town communities - Final report*. Community Food Centres Canada.

Comité de mobilisation politique québécois (2007). Pour une politique nationale de l'alimentation au Québec. Retrieved January 2, 2014 from http://www.caaaq.gouv.qc.ca/userfiles/File/Memoires%20nationales%20Montreal/11-M-Comite_mobilisation_politique.pdf

Committee on World Food Security (2012). Coming to terms with terminology, food security, nutrition security, food security and nutrition, food and nutrition security. Thirty-ninth session, October 15-20, 2012, Rome.

Community Food Centres Canada (CFCC). *Evaluation strategy.* http://cfccanada.ca/evaluation-strategy

Community Food Centres Canada (CFCC) (2012). Retrieved June 29, 2013 from http://cfccanada.ca

Conference Board of Canada, Center for Food in Canada (2013a). *Enough for all. Household food security in Canada*. Ottawa.

Conference Board of Canada, Center for Food in Canada (2013b). *What's to Eat? Improving Food Literacy in Canada.*

Conference Board of Canada (2013c). News release 14-48B. Retrieved January 2, 2015 from http://www.conferenceboard.ca/press/newsrelease/13-10-31/l_%C3%A9ducation_nutritionnelle_devrait_%C3%AAtre_une_priorit%C3%A9_sur_les_bancs_d_%C3%A9cole_au_canada.aspx

Côté, J. (2007). Vivre la pauvreté et l'insécurité alimentaire en Gaspésie et aux îles-de-la-Madeleine. Analyse de récits biographiques. Gaspé, Direction de santé publique Gaspésie-îles-de-la-Madeleine. Retrieved July 2, 2013 from http://www.santecom.qc.ca/bibliothequevirtuelle/hyperion/9782923129457.pdf,

Cousineau, J-M. (2008). *Comment mesure-t-on la pauvreté au Canada?*, Montreal : Association des économistes québécois.

D'Amours, M. (2009). Travail précaire et gestion des risques : vers un nouveau modèle social? *Lien social et Politiques, 61*, Spring, 109-121.

Dabone, C., Makvandi, E., Bouchard, L., & Batal., M. (2013). L'insécurité alimentaire selon deux définitions : impact sur la minorité francophone canadienne à travers divers déterminants socio-économiques. 17es Journées annuelles de santé publique, 25-27 novembre 2013. Retrieved January 5, 2014 from http://jasp.inspq.qc.ca/Default.aspx?pageid=548&Annee=2013&NoAffiche=431

Darmon, M., & Darmon, N. (2009). Pathologies nutritionnelles, chapitre 6. Dans *L'équilibre nutritionnel. Concepts de base et nouveaux indicateurs. Le SAIN et le LIM*. Paris : Éditions Tec & Doc, Lavoisier.

Darmon, N. (2007). Le droit à une alimentation équilibrée, une réalité pour tous? *Equation Nutrition, 63*, 3 p.

Darmon, N., Briend, A., & Drewnowski, A. (2004). Energy-dense diets are associated with lower diet costs: a community study of French adults. *Plublic Health Nutrition, 7*, 21-27.

Darmon, N., Darmon, M., Maillot, M., & Drewnowski, A. (2005). A nutrient density standard for vegetables and fruits: nutrients per calorie and nutrients per unit cost. *Journal of the American Dietetic Association, 105*, 1881-1887.

Darmon, N., Ferguson E.L., & Briend, A. (2002). A cost constraint alone has adverse effects on food selection and nutrient density: analysis of human diets by linear programming. *Journal of Nutrition, 13*, 3764-3771.

Darmon, N., Ferguson, E.L., & Briend, A. (2003). Do economic constraints encourage the selection of energy dense diets? *Appetite, 41*, 315-322.

Darmon, N., Ferguson, E.L., & Briend, A. (2006a). Impact of a cost constraint on nutritionally adequate food choices for French women: analysis by linear programming. *Journal of Nutrition Education and Behaviour, 38*, 82-90.

Darmon, N., Rambelozon, Z., Dauphin, A.G., Bellin, C., Deheeger, M., & Castetbon, K. (2006b). Un colis de référence pour une aide alimentaire équilibrée. *Cahiers de Nutrition et de Diététique, 41*, 118-124.

Darmon, N., Vieux, F., Maillot, M., Volatier, J.-L., & Martin, A. (2009). Nutrient profiles discriminate between foods according to their contribution to nutritionally adequate diets: a validation study using linear programming and the SAIN, LIM system. *American Journal of Clinical Nutrition, 89*, 1227-36.

Davis, B., & Tarasuk, V. (1994). Hunger in Canada. *Agriculture and Human Values, 11*(4), 50–57.

Delisle, H., & Hamelin A.M. (Eds) (1997). L'action communautaire et les politiques pour la sécurité alimentaire : une question sociale et de santé. Actes du colloque tenu le 14 mai 1996 dans le cadre

du 64e congrès de l'ACFAS, McGill University, Montreal. *Les cahiers scientifiques de l'ACFAS*, ACFAS: Montreal.

Dembélé, N.N. et Traoré, A. (2012). Sécurité, aide, autosuffisance et souveraineté alimentaire : revisitons les concepts, PROMISAM, Note d'information n° 2012-1, Michigan State University.

Dibsdall, L. A., Lambert, N., Bobbin, R. F., & Frewer, L. J. (2003). Low-income consumers' attitudes and behaviour towards access, availability and motivation to eat fruit and vegetables. *Public Health Nutrition, 6*, 159-168.

Dickson, V., & Myatt, T. (2002). The determinants of provincial minimum wages in Canada. *Journal of Labor Research, 23*(1), 57-67.

Dietitians of Canada / Les Diététistes du Canada (2005a). Individual and household food insecurity in Canada. Position of Dietitians of Canada.

Dietitians of Canada / Les Diététistes du Canada (2005b). Individual and household food insecurity in Canada. Position of Dietitians of Canada. Executive summary. *Canadian Journal of Dietetic Practice and Research, 66*, 43-46.

Dietitians of Canada / Les Diététistes du Canada (2007). Community food security. Position of Dietitians of Canada, Dieticians of Canada, *Public Policy Statements*. 1-13.

Dinour, L.M., Bergen, D., Yeh, M.C. (2007). The food insecurity-obesity paradox: A review of the literature and the role food stamps may play. *Journal of the American Dietetic Association, 107*, 1952-1961.

Dollahite, J. S., Nelson, J. A., Frongillo, E. A., Griffin, & M. R. (2005). Building community capacity through enhanced collaboration in the farmers market nutrition program. *Agriculture and Human Values, 22*, 339-354.

Drewnowski, A., Darmon, N., & Briend, A. (2004). Replacing fats and sweets with vegetables and fruit. A question of cost. *American Journal of Public Health, 94*, 1555-1559.

Economic and Social Inclusion Corporation (2012). Overcoming poverty together, *1*(1), December. Retrieved December 12, 2013 from http://www2.gnb.ca/content/dam/gnb/Departments/esic/pdf/SuccessStories-HistoiresReussites.pdf

Economic and Social Inclusion Corporation (2013). Progress report April 1st, 2011 to March 31st, 2013

Economic and Social Inclusion Corporation (2014). *Overcoming poverty together. The New Brunswick economic and social inclusion plan 2014-2019*.

Engler-Stringer, R., & Berenbaum, S. (2005). Collective kitchens in Canada: A review of the literature. *Canadian Journal of Dietetic Practice and Research, 66*(4), 246-51.

Engler-Stringer, R., & Berenbaum, S. (2006). Food and nutrition-related learning in collective kitchens in three Canadian cities. *Canadian Journal of Dietetic Practice and Research, 67*, 178-183.

Engler-Stringer, R., & Berenbaum, S. (2007). Exploring food security with collective kitchens participants in the three Canadian cities. *Qualitative Health Research, 17*, 75-84.

Epp, S. (2009). Provincial approaches to food security: a scan of food security related policies in Canada. Manitoba Food Charter. Retrieved September 24, 2013 from http://www.foodshedproject.ca/pdf/Provincial%20Approaches%20to%20Food%20Security.pdf

Epp, S. (2011). Provincial approaches to food security. Food matters Manitoba and the Manitoba Alternative Food Research Alliance. Retrieved September 29, 2013 from http://foodmattersmanitoba.ca/sites/default/files/provincial%20policy%20scan.pdf

Ernst, B., Thurnheer, M., Schmid, S. M., & Schultes, B. (2009). Evidence for the necessity to systematically assess micronutrient status prior to bariatric surgery. *Obesity Surgery, 19*, 66-73.

Europeen Commission (2009). Sécurité alimentaire : comprendre et relever le défi de la pauvreté. EuropeAid.

Fano, T. J., Tyminski, S. M., Flynn, M. A. (2004). Evaluation of a collective kitchens program using the population health promotion model. *Canadian Journal of Dietetic Practice and Research, 65*, 72-80.

Favreau, L. (1995). Économie communautaire, mobilisation sociale et politiques publiques au Québec (1985-1995). In J-L. Klein et B. Lévesque (Eds.), *Contre l'exclusion : repenser l'économie*. Sainte-Foy, Quebec: Presses de l'Université du Québec.

Fontan, J-M. (1997). Mouvements sociaux et communautarisation du tissu social. In J-L. Klein, P-A. Tremblay et H. Dionne (Eds.), *Au-delà du néolibéralisme, Quel rôle pour les mouvements sociaux?* (p. 197-210). Sainte-Foy, Quebec: Presses de l'Université du Québec.

Food and Agriculture Organization of the United Nations (FAO) (1990). Food aid charter. Rome.

Food and Agriculture Organization of the United Nations (FAO) (1996). Declaration on world food security. Rome.

Food and Agriculture Organization of the United Nations (FAO) (2009). World summit on food security. November 16-18, Rome.

Food and Agriculture Organization of the United Nations (FAO) (2012). Nutrition and consumer protection division. Rome.

Food Banks Canada (n.d). *Safe food handling* program. Retrieved January 2, 2014 from https://www.foodbankscanada.ca/Our-Work/Food-Sharing/Safe-Food-Handling.aspx?lang=en-CA

Food Banks Canada (2015). HungerCount, Mississauga, Ontario. Retrieved from https://www.foodbankscanada.ca/getmedia/01e662ba-f1d7-419d-b40c-bcc71a9f943c/HungerCount2015_singles.pdf.aspx?ext=.pdf

Food Banks Canada (2014). HungerCount, Mississauga, Ontario. Retrieved from https://www.foodbankscanada.ca/getmedia/d8b36130-cc83-46ba-8183-d33d484c7591/HungerCount2014_revised.pdf.aspx?ext=.pdf

Food Banks Canada (2013). HungerCount, Mississauga, Ontario. Retrieved from https://www.foodbankscanada.ca/getmedia/29523a26-6f50-4c60-903d-458c9e7fece4/HungerCount2013_revised2015_1.pdf.aspx?ext=.pdf

Food Banks Canada (2012). HungerCount, Mississauga, Ontario. Retrieved from https://www.foodbankscanada.ca/getmedia/4a77c6ac-a479-4fd0-8b78-950e709c14f6/HungerCount2012_revised.pdf.aspx?ext=.pdf

Fortin, N. M., & Lemieux, T. (2000). Income redistribution in Canada: Minimum wages versus other policy instruments. In W. C. Riddell and F. St-Hilaire (Eds.). *Public Policies in a Labour Market in Transition* (p. 211-247). Montreal: Institute for Research on Public Policy.

National Collaborating Centre for Healthy Public Policy (2010). Treize interventions visant à réduire les inégalités sociales de santé au Canada. Retrieved January 3, 2014 from http://www.ccnpps.ca/docs/13interventions_Inegalites_FR_sansISBN_FINAL.pdf

New Brunswick Common Front for Social Justice (2011). Sharp hike in the cost of food. Results of a 2011 N.B. survey. Moncton, Nouveau-Brunswick.

New Brunswick Common Front for Social Justice (2012). Being poor and eating well – Try it! Results of a 2012 Provincial food cost survey. Moncton, Nouveau-Brunswick.

NGO Forum (1996). Statement by the NGO Forum to the World Summit, in *Report of the World Food Summit*, Rome, Italie, Food and Agriculture Organization of the United Nations, Appendix III.

Galarneau, D., & Fecteau, É. (2014). The ups and downs of minimum wage, Statistics Canada. Retrieved from http://www.statcan.gc.ca/pub/75-006-x/2014001/article/14035-eng.pdf

Garriguet D. (2004). Vue d'ensemble des habitudes alimentaires des Canadiens. Nutrition : Résultats de l'Enquête sur la santé dans les collectivités canadiennes (2004), Document de recherche, N° 82-640-MIF au catalogue N°2, Health Canada, Ottawa.

Garriguet, D. (2007a). Les habitudes alimentaires des Canadiens. *Rapports sur la santé, 18*(2), 17-33. Statistics Canada n°82-003 au catalogue.

Garriguet, D. (2007b). Plus de fruits, moins de gras : les habitudes alimentaires des Canadiens. *Transition*, L'Institut Vanier de la famille, Winter, 7-10.

Garriguet, D. (2009). La qualité de l'alimentation au Canada. *Rapports sur la santé, 20*(3), 1-13. Statistics Canada n°82-003 au catalogue.

Georgé, S. (2011). Le profil nutritionnel SAIN LIM. Fiche technique du Centre technique de la conservation des produits agricoles. Retrieved June 12, 2013 from http://ogi.ctcpa.eu/media/fck/file/Profil_nutritionnel_SAIN_LIM_CTCPA

Gilbert, A., Floch, W., & Abou-Rjeili, E. (2009). Profil de la communauté acadienne et francophone du Nouveau-Brunswick. Ottawa: FCFA.

Giskes, K., Turrell, G., Patterson, C., & Newman, B. (2002). Socio-economic differences in fruit and vegetable consumption among Australian adolescents and adults. *Public Health Nutrition, 5*, 663-669.

Government of British Columbia (2006c). *Implementing community food action in BC: Criteria for success and the role of the health sector.* Retrieved January 4, 2014 from http://www.phsa.ca/Documents/implementingcfaiinbccriteriaforsuccessandroleofthe.pdf

Government of British Columbia, Provincial Health Services Authority (2010). Implementing food security indicators. Phase II: Food security indicators project. Retrieved January 4, 2014 from http://www.phsa.ca/Documents/implementingfoodsecurityindicators_phaseii.pdf

Government of Canada. Healthy Living Issue Group of The Public Health Agency of Canada, (2010a). Improving Cooking and Food Preparation Skills: A Synthesis of the Evidence to Inform Program and Policy Development

Government of Canada, Healthy Living Issue Group of The Public Health Agency of Canada (2010b). Improving cooking and food preparation skills: A profile of promising practices in Canada and abroad. Retrieved from http://www.hc-sc.gc.ca/fn-an/nutrition/child-enfant/cfps-acc-profil-apercu-eng.php

Government of Canada. (2009a). Defining "healthy" foods: Environmental scan of the situation in Canada.

Government of Canada. (2009b). Defining "healthy" and "unhealthy" foods: An international review

Government of Canada. (1998). Canada's action plan for food security. In response to the world food summit plan of action. Ottawa : Agriculture and Agri-Food Canada.

Gouvernement du Nouveau-Brunswick (2016). Health Inequities in New Brunswick A Report from the Office of the Chief Medical Officer of Health Department of Health, Fredericton, New Brunswick.

Government of New Brunswick (2014), New Brunswick's wellness strategy 2014-2021. The heart of our future, p. 4. Retrieved December 5, 2014 from http://www2.gnb.ca/content/dam/gnb/Departments/hic-csi/pdf/Wellness-MieuxEtre/StrategieMieuxEtreDuNouveauBrunswick2014-2021.pdf

Government of New Brunswick (2013a). Disease Watch Bulletins of New Brunswick. Office of the Chief Medical Officer of Health (Public Health), April 2013, 1-8.

Government of New Brunswick (2013b). Investment made in Community Food Mentor program. Fredericton, New Brunswick. Retrieved March, 12 2013 from http://www2.gnb.ca/content/gnb/en/news/news_release.2013.02.0155.html

Government of New Brunswick (2012). New Brunswick Provincial Poverty Profile. Retrieved January 20, 2014 from http://www.cwp-csp.ca/wp-content/uploads/2012/05/New-Brunswick-Provincial-Poverty-Profile-FINAL-May-2012.pdf

Government of New Brunswick (2012a). Community food action program – Healthy and inclusive communities. Fredericton, New Brunswick. Retrieved March 8, from http://www2.gnb.ca/content/gnb/fr/ministeres/csi/Mieux-etre/content/securite_alimentaire.html

Government of New Brunswick (2012b). New Brunswick Public Health Nutrition Framework for Action 2012-2016 Fredericton. Retrieved from http://www2.gnb.ca/content/dam/gnb/Departments/h-s/pdf/en/Publications/PublicHealthNutritionFrameworkforAction.pdf

Government of New Brunswick, Minister of Health (2012c). Food premises: Standard operational procedures, version 3.0, Fredericton, NB.

Government of New Brunswick (2009a), *Ensemble pour vaincre la pauvreté, Le plan d'inclusion économique et sociale du Nouveau-Brunswick.* http://www2.gnb.ca/content/dam/gnb/Departments/esic/pdf/Plan-f.pdf

Government of New Brunswick (2009). Regulation on food premises. Public health act, New Brunswick regulation 2009-138. Retrieved September 12, 2013 from http://laws.gnb.ca/fr/ShowPdf/cr/2009-138.pdf

Government of New Brunswick (2009c). Live well, be well. New Brunswick's wellness strategy 2009-2013. Fredericton, New Brunswick.

Government of New Brunswick (2008). Exécuter le *Plan d'action*, La réponse du gouvernement à *Un Plan d'action*.

Government of New Brunswick, Minister of Education (2008). Healthier Foods and Nutrition in Public Schools Fredericton, New Brunswick.

Gouvernement du Québec (2008). Cadre de référence en matière de sécurité alimentaire. Ministère de la Santé et des Services sociaux du Québec (MSSS), Québec, Québec, 37 p.

Gouvernement du Québec (2009). Guide d'application sur règlement sur les aliments. Formation obligatoire en hygiène et salubrité alimentaires. Récupéré le 3 septembre 2013 à http://www.amdeq.ca/pdf/GuideAppRegAliments_web.pdf

Grange, D., Castetbon, K., Guibert, G., Vernay, M., Escalon, H., Delannoy, A., Féron, V., & Vincelet, C. (2013a). Alimentation et état nutritionnel des bénéficiaires de l'aide alimentaire. Étude Abena 2011-2012 et évolutions depuis 2004-2005. Observatoire régional de santé Île-de-France, Institut de veille sanitaire, Institut national de prévention et d'éducation pour la santé, France, 147 p.

Grange, D., Castetbon, K., Guibert, G., Vernay, M., Escalon, H., Delannoy, A., Féron, V., & Vincelet, C. (2013b). Alimentation et état nutritionnel des bénéficiaires de l'aide alimentaire. Étude Abena 2011-2012 et évolutions depuis 2004-2005. Synthèse. Observatoire régional de santé Ile-de-France, Institut de veille sanitaire, Institut national de prévention et d'éducation pour la santé, France, 4 p.

Groupe de développement durable du Pays de Cocagne (2012). Kent Community Food Center (CFC) Network. Final report, April.

Guay, L. (1997). Le mouvement communautaire et l'économie sociale : « Entre l'espoir et le doute ». In J-L. Klein, P-A. Tremblay and H. Dionne (Eds), *Au-delà du néolibéralisme, Quel rôle pour les mouvements sociaux ?* (pp. 197-210). Sainte-Foy: Presses de l'Université du Québec.

Haering, S.A., & Syed, S.B. (2009). *Community food security in United States cities. A survey of the relevant scientific literature*. Baltimore, MD: Johns Hopkins Bloomberg School of Public Health, Center for a Livable Future. Retrieved September 4, 2013 from http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-a-livable-future/research/clf_publications/pub_rep_desc/CFS_USA.html

Halton Region (2011). Food safety guidelines for food banks, 18 p.

Hamelin A.-M., Beaudry, M., & Habicht, J.P. (2002). Characterization of household food insecurity in Québec: food and feelings. *Social Science and Medicine, 54*, 119-132.

Hamelin, A.-M., & Bolduc, N. (2003). La sécurité alimentaire à l'agenda politique québécois. *Service Social, 50*, 57-80.

Hamelin, A.-M., Mercier, C., & Bédard, A. (2011). Needs for food security from the standpoint of Canadian households participating and not participating in community food programmes. *International Journal of Consumer Studies, 35*(1), 58-68.

Headey, D., & Ecker, O. (2013). Rethinking the measurement of food security: from first principles to best practice. *Food Security, 5*, 327-343.

Health Canada (n.d.) Canadian nutrient file. Retrieved from http://webprod3.hc-sc.gc.ca/cnf-fce/language-langage.do?url=t.search.recherche&lang=eng

Health Canada (1996). Building collective kitchens in New Brunswick: a user's guide. Canada Prenatal Nutrition Program, 72 p.

Health Canada (1999). *Model guideline for food safety in food banks*. Ottawa: Food Safety and Nutrition. Federal/Provincial/Territorial Food Safety Committee.

Health Canada. (2007). *Canadian community health survey, cycle 2.2, nutrition (2004): Income-related household food security in Canada*. Ottawa: Government of Canada.

Health Canada (2008). Methodology used to develop the 2008 national nutritious food basket. Retrieved December 12, 2013 from http://www.hc-sc.gc.ca/fn-an/surveill/basket-panier/method-eng.php

Health Canada (2009a). *Defining "healthy" and "unhealthy" Food : An international review - Executive Summary*. Ottawa.

Health Canada (2009b). *Defining "Healthy" Foods: Environmental Scan of the Situation in Canada (2009) - Executive Summary*, Nutrition Policy Reports, Ottawa.

Health Canada (2010). *Dietary Reference Intakes*. Government of Canada, Ottawa.

Health Canada (2011). *Eating Well with Canada's Food Guide*. Ottawa.

Health Canada (2012). Determining Food Security Status. Retrieved August 26, 2013 from http://www.hc-sc.gc.ca/fn-an/surveill/nutrition/commun/insecurit/status-situation-eng.php

Health Canada (2013a). Measuring the food environment. Ottawa. Retrieved May 10, 2013 from http://www.healthyeatingnl.ca/wp-content/uploads/2016/01/Health-Canada-Measuring-the-Food-Environment-in-Canada.pdf

Health Canada (2013b). *Working with grocers to support healthy eating*. Ottawa.

Heart and Stroke Foundation of Canada (2013). Déclaration. Accès à des aliments abordables, sains et nutritifs (« sécurité alimentaire »). Retrieved August 29, 2013 from http://www.fmcoeur.com/atf/cf/%7B3CB49E24-0FB7-4CEE-9404-67F4CEE1CBC0%7D/Access-Frescreen.pdf?_ga=1.242739458.1268757197.1392649326

Heart and Stroke Foundation of Canada (2014). Dietary sodium, heart disease and stroke. Heart and Stroke Foundation of Canada Position Statement. Retrieved November 14, 2015 from http://www.heartandstroke.bc.ca/site/c.kpIPKXOyFmG/b.5264947/k.BD61/Position_Statements__Dietary_Sodium_Heart_Disease_and_Stroke.htm

Heisz, A., & Murphy, B. (2014). The role of taxes and transfers in reducing income inequality, presented at the symposium *Inequality in Canada: Driving Forces, Outcomes and Policy* of Institut de recherche en politiques publiques (IRPP), February.

Herman, D.R., Harrison, G.G., & Jenks, E. (2006). Choices made by low-income women provided with an economic supplement for fresh fruit and vegetable purchase. *Journal of the American Dietetic Association, 106*, 740-744.

Hicksi, P. (2008). *Social Policy in Canada – Looking Back, Looking Ahead*, Working Paper 46, Retrieved January 23, 2014 from http://www.queensu.ca/sps/publications/workingpapers/46-Hicks.pdf

Hill, R. (2014). *The minimum wage in New Brunswick*. Federicton: University of New Brunswick.

Hoisington, A., Manore, M. M., & Raab, C. (2011). Nutritional quality of emergency foods. *Journal of the American Dietetic Association, 111*(4), 573-576.

Holben, D. (2010). Position of the American dietetic association: Food insecurity in the United States. *Journal of the American Dietetic Association, 110*(9), 1368-1377.

Husbands, W. (1999). Banques alimentaires : organismes de lutte contre la faim. In M. Koc, R. Mac Rae, L. J. A Mougeot and J. Welsh (Eds.) (p. 109-116). *Armer les villes contre la faim. Système alimentaires urbains durables.* Ottawa: Centre de recherches pour le développement international.

Ici Radio-Canada (2014), *Les banques alimentaires connaissent de plus en plus de difficultés*, November 20, http://ici.radio-canada.ca/regions/atlantique/2014/11/20/001-banques-alimentaires-nouveau-brunswick.shtml

Initiative on Global Markets (IGM) (2013). « Minimum Wage » *IGM Forum*, February 26.

Inman, A. P. (2013). Kansas legislators' opinions about food safety regulation of hunger relief organizations. *Journal of the Association of Food and Drug Officials, 73,* 48-53.

Institut national de santé publique (2002). La santé des communautés : perspective pour la contribution de la santé publique au développement social et au développement des communautés. Québec.

Irwin, J. D., Ng, V. K., Rush, T. J., Nguyen, C., & He, M. (2007). Can food banks sustain nutrient requirements? A case study in southwestern Ontario. *Canadian Journal of Public Health, 98*, 17-20.

Jackson, S.F., Perkins, F., Khandor, E., Cordwell, L., Hamann, S., & Buasai, S. (2006). Integrated health promotion strategies: a contribution to tackling current and future health challenges. *Health Promotion International, 21*, 75-83.

James WP, Nelson M, Ralph A, & Leather S. (1997). Socioeconomic determinants of health. The contribution of nutrition to inequalities in health, BMJ; vol. 314 (7093), p. 1545-9.

Jeté, C., Lévesque, B., Mager, L., & Vaillancourt, Yves (2010). Économie sociale et transformation de l'État-providence dans le domaine de la santé et du bien-être, Une recension des écrits (1990-2000). Sainte-Foy: Presses de l'Université Laval.

Jones, N. R. V., Conklin, A. I., Suhrcke, M., & Monsivais, P. (2014). The growing price gap between more and less healthy foods: Analysis of a novel longitudinal UK dataset. *PLoS ONE, 9*(10), e109343.

Kaiser, L. L., Townsend, M. S., Melgar-Quinonez, H. R., Fujii, M. L. & Crawford, P. B. (2004). Choice of instrument influences relations between food insecurity and obesity in Latino women, *The American Journal of Clinical Nutrition, 80*(5), 1372–1378.

Kalina, L. (2001). Building food security in Canada: from hunger to sustainable food systems: A community guide. Second Edition, Kamloops FoodShare, BC.

Kennedy, A., Sheeshka, J., & Smedmor, L. (1992). Enhancing food security: a demonstration support program for emergency food center providers. *Journal of the Canadian Dietetic Association, 53*, 284-287.

Kimmons, J. E., Blanck, H. M., Tohill, B. C., Zhang, J., & Khan, L. K. (2006). Associations between body mass index and the prevalence of low micronutrient levels among US adults. *Medscape General Medicine, 8,* 59.

Kirkpatrick, S. I., & Tarasuk, V. (2008). Food insecurity is associated with nutrient inadequacies among Canadian adults and adolescents. *The Journal of nutrition, 138*(3), 604–612

Koc, M., MacRae, R., Desjardins, E.,& Roberts, W. (2008). Getting civil about food: The interactions between civil society and the state to advance sustainable food systems in Canada. *Journal of Hunger & Environmental Nutrition, 3*(2-3), 122-144.

Koc, M., MacRae, R., Mougeot, L. J. A., & Welsh J. (Eds.) (2000). *Armer les villes contre la faim, Systèmes alimentaires urbains durables.* Ottawa: Centre de recherches pour le développement international.

Kraft Foods (2012). Kraft Food for Families: Capacity Needs Just as Critical as Food to Help Feed Canadian Families, New Study Shows, Retrieved from http://www.newswire.ca/news-releases/kraft-food-for-families-capacity-needs-just-as-critical-as-food-to-help-feed-canadian-families-new-study-shows-511080221.html

La Via Campesina (2004). La souveraineté alimentaire. Retrieved March 12, 2008 from http://www.viacampesina.org

Lang, T. (1999). Politique alimentaire au XXIe siècle : à la fois radicale et raisonnable? In M. Koc, R. Mac Rae, L. J. A Mougeot and J. Welsh (Eds.). *Armer les villes contre la faim. Système alimentaires urbains durables* (pp. 233-243). Ottawa: Centre de recherches pour le développement international (CRDI).

Larson, N. I., Story, M.T., & Nelson, M. C. (2009). Neighborhood environments: Disparities in access to healthy foods in the U.S. *American Journal of Preventive Medicine, 36*(1), 74-81.

Latham, J., & Moffat, T. (2007). Determinants of variation in food cost and availability in two socioeconomically contrasting neighbourhoods of Hamilton, Ontario, Canada. *Health & Place, 13*(1), 273 287.

Lawrence Journal World, (27 septembre 2003). LINK has close call with closing. Official targets home-cooked meals. Retrieved from http://www2.ljworld.com/news/2003/sep/27/link_has_close/?print.

Lebreton S., & Leclerc A. (2007). La pauvreté au Nouveau-Brunswick. Front commun pour la justice sociale du N.-B.

Leduc, P. (1999). Le tiers secteur au Canada anglais, éléments d'analyse. *Nouvelles pratiques sociales, 11*(2) and *12*(1), 143-157.

Lee, B. A., & Greif, M. J. (2008). Homelessness and hunger. *Journal of Health and Social Behavior, 49*, 3-19.

Lepage, J.-F. (2012). Situation des minorités de langue officielle sur le marché du travail. Ottawa: Statistics Canada. Retrieved from http://epe.lac-bac.gc.ca/100/201/301/liste_hebdomadaire/2012/electronique/w12-44-U-F.html/collections/collection_2012/statcan/89-651-x/89-651-x2012001-fra.pdf

Leseman, F. (2001). De l'État-providence à l'État partenaire. In Guy Giroux (Ed.), *L'État, la société civile et l'économie*, Sainte-Foy: Les presses de l'Université Laval.

Levkoe, C. Z., Bebee, M., Wakefield, S., Castel., E., & Davila, C. (2012). Propagating the food movement: provincial networks and social mobilization in Canada. Retrieved June 9, 2013 from http://bcfsn.org/wp-content/uploads/2012/11/Levkoe-2012-Propagating_the_Food_Movement.pdf

Loopstra, R., & Tarasuk, V.S. (2012). The relationship between food banks and household food insecurity among low-income Toronto families. *Canadian Public Policy, 38*, 497-514.

MacEwen, A., & Saulnier, C. (2011). *Coût de la pauvreté au Nouveau-Brunswick.* Halifax: Centre canadien de politiques alternatives/Canadian Centre for Policy Alternatives.

MacIntyre, S. (2007). Deprivation hypothesis revisited; or, is it always true that poorer places have poorer access to resources for healthy diets and physical activity? *International Journal of Behavioral Nutrition and Physical Activity, 4*, 32-39.

Mander, N. (2008). Rethinking Food Security in Humanitarian Response, Tufts University

Markovic, T. P., & Natoli, S. J. (2009). Paradoxical nutritional deficiency in overweight and obesity: the importance of nutrient density. *Medical Journal of Australia, 190*, 149-151.

Marsh, K., & Brand-Miller, J. C. (2008). State of the art reviews: glycemic index, obesity, and chronic disease. *American Journal of Lifestyle Medicine, 2*, 142-150.

Mc Millan, T. (2014). The new face of hunger. Hunger in America. *National Geographic, 226*, 67-89.

McCullum, C., Desjardins, E., Kraak, V.I., Ladipo, P., & Costello, H. (2005). Evidence-based strategies to build community food security. *Journal of the American Dietetic Association, 105*, 278-283

McIntyre, L. (2003). Food security: more than a determinant of health. *Options politiques*, March, 46-51.

McIntyre, L. (2011). Food insecurity policy is not the flip side of food security policy. *Options politiques*, août, 48-51.

McIntyre, L., & Rondeau, K. (2009). *Food insecurity. In social determinants of health: Canadian perspectives*, (2nd ed., pp. 188-204, D. Raphael (Ed.) Toronto: Canadian Scholars' Press Inc.

McIntyre, L., Glanville, N. T., Officer, S., Anderson, B., Raine, K. D., & Dayle, J. B. (2002). Food insecurity of low-income lone mothers and their children in Atlantic Canada. *Canadian journal of public health*, *93*(6), 411.

Milway, J., Chan, K., Stapleton J.. & Cook, B. (2010). *The poor still pay more: challenges low income families face in consuming a nutritious diet*. Ontario: Institute for Competitiveness & Prosperity. Retrieved June 30, 2013 from http://www.competeprosper.ca/uploads/ICAP_The_poor_still_pay_more.pdf

Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec (2013). Politique de souveraineté alimentaire. Retrieved January 2, 2014 from http://www.mrifce.gouv.qc.ca/PDF/actualites/Politique_Souverainete_alimentaire.pdf

Molina, L. E. (2008). La lutte contre l'insécurité alimentaire au Canada : banques alimentaires et organismes bénévoles. *Agroalimentaria, 27*, 25-42.

Monfort, P.-F. (2009). La sécurité alimentaire : un enjeu politique d'actualité. Mouvement pour une Organisation Mondiale de l'Agriculture, 6 avril 2009. Retrieved September 9, 2013 http://www.momagri.org/FR/articles/La-securite-alimentaire-un-enjeu-politique-d-actualite-_471.html

Monsivais, P., Aggarwal, A., & Drewnowski, A. (2012). Are socio-economic disparities in diet quality explained by diet cost? *Journal Of Epidemiology And Community Health*, *66*(6), 530-535.

Myatt, T., & McDonald, J. T. (2010). The robustness of provincial panel-data studies of minimum wages in Canada. *The Canadian Journal of Regional Science / Revue canadienne des sciences régionales*, 33(3), 77-88. Récupéré à http://www.cjrs-rcsr.org/V33/3/7-33-3-MYATT-MCDONALD.pdf

National Collaborating Centre for Aboriginal Health (2009). Health inequalities and social determinants of Aboriginal peoples' health. University of Northern British Columbia, BC. Retrieved January 2, 2014 from http://www.nccah-ccnsa.ca

New Brunswick Common Front for Social Justice (NBCFSJ) (2010a). *Food banks and soup kitchens: An overview.* Moncton.

New Brunswick Common Front for Social Justice (NBCFSJ) (2010b). Food banks should only be a temporary alternative to an inadequate social safety net. Retrieved May 1, 2015 from http://frontnb.ca/Document/news-food-banks-2010-04.pdf

New Brunswick Food Security Action Network (NBFSAN) (2008). Les liens de la sécurité alimentaire. Rapport de la conférence provinciale sur la sécurité alimentaire. 16 octobre.

Organisation for Economic Co-operation and Development (OECD) (2008). Growing Unequal? Income Distribution and Poverty in OECD Countries. Retrieved January 3, 2014 from http://www.keepeek.com/Digital-Asset-Management/oecd/social-issues-migration-health/growing-unequal_9789264044197-en#page1

Osberg, L. (2008). *A quarter century of economic inequality in Canada.* Canadian Center for Policy Alternatives.

Perkins, E. (1999). Politique gouvernementale et transition vers des réseaux alimentaires locaux. In M. Koc, R. Mac Rae, L. J. A Mougeot, & J. Welsh (Eds.). *Armer les villes contre la faim. Systèmes alimentaires urbains durables* (pp.64-68). Ottawa: International Development Research Centre (IDRC).

Power, E. M. (1999). Justice sociale et durabilité au service de la sécurité alimentaire. In Koc, M., Mac Rae, R. Mougeot, L. J. A, Welsh, J. (Eds.), *Armer les villes contre la faim. Systèmes alimentaires urbains durables* (p. 33-40). Ottawa: International Development Research Centre (IDRC).

Power, E. M. (2005). Individual and household food insecurity in Canada: Position of dietitians of Canada. *Canadian Journal of Dietetic Practice and Research, 66*(1), 43-6.

Power, E. M. (2011). It's time to close Canada's food banks. *The Globe and Mail,* 25 juillet 2011. Retrieved June 23, 2013 from http://www.theglobeandmail.com/globe-debate/its-time-to-close-canadas-food-banks/article587889

Premier's Community Non-Profit Task Force (2007), *Blueprint for Action: Building a Foundation for Self-Sufficiency.*

Provencher, Y. (2004). L'Aide sociale au Nouveau-Brunswick : Évolution historique et perspectives contemporaines. *Canadian Review of Social Policy, 54,* Fall, 18-33.

Provencher, Y. (2007). Aide sociale au Nouveau-Brunswick : le discours des personnes assistées sociales au sujet de leurs rapports avec les gestionnaires de cas. Dans *Canadian Review of Social Policy / Revue canadienne de politique sociale, 59,* 56-75.

Public Health Agency of Canada (2011). Actions taken and future directions 2011 curbing childhood obesity: A federal, provincial and territorial framework for action to promote healthy weights. Annexe D. Retrieved July 24, 2013 from http://www.phac-aspc.gc.ca/hp-ps/hl-mvs/framework-cadre/2011/hw-os-2011-eng.php

Public Health Agency of Canada (2010). Curbing Childhood Obesity: A Federal, Provincial and Territorial Framework for Action to Promote Healthy Weights Retrieved July 24, 2013 from http://www.phac-aspc.gc.ca/hp-ps/hl-mvs/framework-cadre/pdf/ccofw-eng.pdf

Racine, S. (2007). L'insécurité et la sécurité alimentaire. Une analyse critique. Dans H. Dorvil (dir.), *Problèmes sociaux - Tome III. Théories et méthodologies de la recherche* (pp. 19-48). Québec: Presses de l'Université du Québec.

Radimer, K. L., Olson, C. M., Greene, J. C., Campbell, C. C., & Habicht, J.-P. (1992). Understanding hunger and developing indicators to assess it in women and children. *Journal of Nutrition Education, 24*, 36S-244S.

Raine, K. D. (2005). Les déterminants de la saine alimentation au Canada : aperçu et synthèse. *Revue canadienne de santé publique, 96*, S8-S15.

Rao, T. S., Asha, M. R., Ramesh, B. N., & Rao, K. S. (2008). Understanding nutrition, depression and mental illnesses. *Indian Journal of Psychiatry, 50*, 77-82.

Réseau de développement économique et d'employabilité (RDÉE Canada) (2006). Profils socioéconomiques. Données du Nouveau-Brunswick - Comté de Kent.

Rice, J. J. Rice et Prince, M. J. (2000), *Changing Politics of Canadian Social Policy*, University of Toronto Press, *110*.

Riches, G. (1999). Réaffirmation du droit à la nourriture au Canada : le rôle des réseaux communautaires de sécurité alimentaire. In M. Koc, R. Mac Rae, L. J. A Mougeot and J. Welsh (Eds.). *Armer les villes contre la faim. Systèmes alimentaires urbains durables* (pp. 219-224). Ottawa: Centre de recherches pour le développement international (CRDI).

Riches, G. (2002). Food banks and food security: Welfare reform, human rights and social policy. Lessons from Canada? *Social Policy & Administration, 36*(6), 648–663.

Robitaille, É. et Bergeron, P. (2013). Accessibilité géographique aux commerces alimentaires au Québec : analyse de situation et perspectives d'interventions. Retrieved from http://www.agencesssbsl.gouv.qc.ca/Telechargements/Sante_publique_et_services/Alimentation/AccessGeoCommAlimentQc.pdf

Rollin, A-M. (2013). L'augmentation des prix des aliments entre 2007 et 2012, Statistique Canada.

Rose, D. (1999). Economic determinants and dietary consequences of food insecurity. *The Journal of Nutrition, 129*(2), 517S-520S.

Ross, C. E. et Mirowsky, J. (2010). Why Education is the key to socioeconomic differentials in health, in C. E. Bird, P. Conrad, A. Fremont and S. Timmermans (Eds.), *Handbook of Medical Sociology* (p. 33-51), 6th edition, Nashville : Vanderbilt University Press.

Rouffignat J., Racine S., & Côté E. (1996). Appauvrissement, aide alimentaire et organismes communautaires : de la compréhension à l'action. Rapport de recherche. La Table d'interaction sur la faim au Québec, Moisson Québec, Centre de recherche en aménagement et développement de l'Université Laval, 270 p.

Scharf, K., Levkoe, C. et Saul, N. (2010). *In every community a place for food: The role of the community food centre in building a local, sustainable, and just food system*. George Cedric Metcalf Charitable Foundation.

Schloms, M. (2005). Le dilemme inévitable de l'action humanitaire. *Cultures et conflits, 60*, 2-13.

Schmitt, J. (2013). Why does the minimum wage have no discernible effect on employment? Center for Economic and Policy Research. Retrieved from http://www.cepr.netwww.conservativenannystate.org/documents/publications/min-wage-2013-02.pdf

Schröder, H., Marrugat, J., & Covas, M.I. (2006). High monetary costs of dietary patterns associated with lower body mass index: a population-based study. *International Journal of Obesity* (London), *30*, 1574-1579.

Sen, A. (1985). *Commodities and Capabilities*. New Delhi: Oxford University Press.

Sen, A. (1989). Development as capability expansion. *Journal of Development Planning, 19*, 41-58.

Starkey, L. J. (1994). An evaluation of emergency food bags. *Journal of the Canadian Dietetic Association*, *55*, 175-158.

Starkey, L. J., & Kuhnlein, H. V. (2000). Montreal food bank users' intakes compared with recommendations of Canada Food guide to healthy eating. *Canadian Journal of Dietetic Practice and Research, 61*, 73-75.

Starkey, L. J., Gray-Donald, K., Kuhnlein, H. V. (1999). Nutrient intake of food bank users is related to frequency of food bank use, household size, smoking, education and country of birth. *Journal of Nutrition, 129*, 883-889.

Statistics Canada (2008). *Household food insecurity in Canada in 2007-2008*

Statistics Canada (2011). *Low Income Lines, 2011-2012*, Income Research Paper Series – Income, No 75F0002M of catalogue, No 002, Ottawa.

Statistics Canada (2012a). *Consumer Price Index*, November. Ottawa: Government of Canada.

Statistics Canada (2012b). New Brunswick (Code 13) and Canada (Code 01) (table). Census Profile, Cencus of 2011, product n° 98-316-XWF, catalogue of Statistics Canada. Ottawa. Released October 24, 2012. Retrieved December 2, 2014 from http://www12.statcan.gc.ca/census-recensement/2011/dp-pd/prof/index.cfm?Lang=E

Statistique Canada (2012c). Glossaire illustré, Région métropolitaine de recensement (RMR) et agglomération de recensement (AR). Récupéré à http://www.statcan.gc.ca/pub/92-195-x/2011001/geo/cma-rmr/cma-rmr-fra.htm

Statistics Canada (2013). Earnings, average weekly, by province and territory. Retrieved December 9, 2013 from http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/labr79-eng.htm

Statistics Canada (2014). Labour force, employment and unemployment, levels and rates, by province. Retrieved January 20, from http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/labor07a-eng.htm

Statistics Canada (2015). Table 105-0502. Health indicator profile, two year period estimates, by age group and sex, Canada, provinces, territories, health regions (2013 boundaries) and peer groups. CANSIM (Online Database). Retrieved January 2, 2015 from http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=1050502

Statistics Canada (2016a). Table 281-0063 - Survey of Employment, Payrolls and Hours (SEPH), employment and average weekly earnings (including overtime) for all employees by North American Industry Classification System (NAICS), seasonally adjusted, CANSIM (Online Database). Retrieved February 29, 2016 from http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=2810063

Statistics Canada (2016b), CANSIM, Table 282-0002. Labour force, employment and unemployment, levels and rates, by province. Retrieved February 29, 2016 from http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/labor07a-eng.htm

Strasser, J. A., Damrosch, S., Gaines, J. (1991). Nutrition and the homeless person. *Journal of the Community Health Nursing*, 8:65-73.

Tarasuk V. S. (2009). Health implications of food insecurity. In D. Raphael (Ed.), *Social Determinants of Health: Canadian Perspectives* (2nd ed., p. 205-220). Toronto: Canadian Scholars' Press Inc.

Tarasuk, V. S. (2001). A critical examination of community-based responses to household food insecuriy in Canada. *Health Education and Behavior, 28*, 487-499.

Tarasuk, V. S. et Vogt, J. (2009). Household Food Insecurity in Ontario. *Canadian Journal of Public Health, 100*(3), 184-8.

Tarasuk, V. S., Mitchell, A., & Dachner, N. (2013). Insécurité alimentaire des ménages au Canada 2012. Toronto. Retrived January 5, 2014 from http://nutritionalsciences.lamp.utoronto.ca/wp-content/uploads/2014/02/Household_Food_Insecurity_in_Canada-2012FRE.pdf

Tarasuk, V. S., Mitchell, A., & Dachner, N. (2013). *Research to identify policy options to reduce food insecurity (PROOF).* Household food insecurity in Canada 2011.

Teron, A. C., & Tarasuk, V. S. (1999). Charitable food assistance: what are food bank users receiving? *Canadian Journal of Public Health*, 90, 382-384.

The Canadian Community Kitchen Movement. http://old.bcics.org/node/154. Banques d'alimentation, http://www.thecanadianencyclopedia.com/fr/article/food-banks/

The Middletown Eye, 22 September, 2009. Soup kitchen cited for "illegal" Sunday meals. Retrived from http://middletowneyenews.blogspot.ca/2009/09/soup-kitchen-to-be-cited-for-illegal.html

The New Brunswick Food Security Action Network (2008). *Connecting for food security, Report from the Provincial Conference on Food Security World Food Day*, Thursday October 16, Université de Moncton.

The Urban Institute (1989). *Feeding the homeless: does the prepared meals provision help?* Volume 1. Report to the Congress on the Prepared Meal Provision, prepared by M.R. Burt, B. E. Cohen, Washington, DC.

Townsend, M. S., Peerson, J., Love, B., Achterberg, C. & Murphy, S. P. (2001). Food insecurity is positively related to overweight in women, *The Journal of Nutrition, 131*(6), 1738–1745.

Tranchant, C. C., Ouattara, I., Thiombiano, A., & Vasseur, L. (2009). De la nutrition à l'écologie nutritionnelle : essai de mise en perspective. *Revue de l'Université de Moncton, 40*(2), 9.

Tweddle, A., Battle, K., & Torjman, S. (2014). *Welfare in Canada 2013*. Ottawa: Caledon Institute of Social Policy. Retrieved from http://www.caledoninst.org/Publications/PDF/1057ENG.pdf

Twells, L., Gregory, D., Reddigan, J., & Midodzi, W. (2014). Current and predicted prevalence of obesity in Canada: a trend analysis. *Canadian Medical Association Journal Open, 2*(1), E18-E26.

United Nations System Standing Committee on Nutrition (2010). Sixth Report on the World Nutrition Situation. Geneva.

US Department of Agriculture (2008). Food security in the United States: Definitions of hunger and food. Retrieved November 12, 2014 from www.ers.usda.gov/briefing/foodsecurity/labels.htm

Verpy, H., Smith, C., & Reicks, M. (2003). Attitudes and behaviors of food donors and perceived needs and wants of food shelf clients. *Journal of Nutrition Education and Behavior, 35,* 6-15.

Villalon, L. (1998). Comptoir alimentaire de Mapleton, Nouveau-Brunswick. Profil sociodémographique et alimentaire des bénéficiaires. *Canadian Journal of Dietetic Practice and Research, 59,* 75-82. See tools: http://www.securitealimentairenb.ca/outilsguidesetautres/

Warin, P. (2009). Une approche de la pauvreté par le non-recours aux droits sociaux. *Lien social et Politiques*, 61, printemps, 137-146.

Watson, A. (2013). Groundswell. A guide to building food security in rural communities. North Kootenay Lake Community Services Society, BC. Retrieved January 4, 2014, from http://nklcss.org/groundswell/grndswl.pdf

Webb, K., Campbell, E., Ross, M., Crawford, P., Hecht, K., & Shimada, T. (2012). *Improving the nutritional quality of foods distributed to lower-income families through emergency food services: A study of nutrition-related policies and practicies of food banks and food pantries*. Berkley: University of California.

Welsh, J., & MacRae, R. (1998). Food citizenship and community food security: lessons from Toronto, Canada. In H. Delisle, & D. J. Shaw (Eds.), *Revue canadienne d'études du développement,* XIX, numéro spécial, 237-255.

Wilde, P. E., & Peterman, J. N. (2006). Individual weight change is associated with household food security status, *The Journal of Nutrition, 136*(5), 1395–1400.

York Region Food Network. Food for health - Food for all. (2013). *Food for change: from charity to dignity*. York, Ontario. Retrieved December 2, 2013, from http://yrfn.ca/wp-content/uploads/2010/10/Hunger-Report-2013.pdf

APPENDIX A - TERMS NOT TO BE CONFUSED WITH FOOD SECURITY[62]

Other concepts are used in the field of food security, including the following: ***food safety, food self-sufficiency, and food sovereignty.*** These must not be confused with FS because they do not mean the same thing. However, they may encompass actions and approaches that may contribute to food security.

Food safety: Food safety refers to various measures put in place with respect to operations, regulations, and surveillance to monitor food hygiene, toxicity, and traceability of foods throughout the food chain.

Food self-sufficiency: Food self-sufficiency is the ability to meet all the food requirements of a population (e.g. country, region, community) through its agricultural and food production alone. An essential element in the quest for economic and political self-sufficiency, food self-sufficiency can be dangerous because it puts the people who depend on it at the mercy of hazards that may affect food availability. The concept of self-sufficiency can be applied at different levels; we can therefore talk about partial self-sufficiency (for certain agricultural and food sectors) or total self-sufficiency. It is the opposite of food dependence, which is generally measured by the volume of imports or food aid received. There are two differences between food security and food self-sufficiency (Montfort, 2009):

(i) Food security is a broader concept than self-sufficiency, in that the first includes the possibility of relying on imports or trade, not just on self-production.
(ii)The aim of the two concepts is different: the sole objective of food security is to meet, under the best production conditions possible, all the food needs of a population, whereas food self-sufficiency places almost equal emphasis on the quest for political independence, which puts a more political spin on self-sufficiency.

Food sovereignty: Food sovereignty relates to the right of governments to implement agricultural policies that are the best suited to their populations provided they do not interfere with agriculture in other countries. As noted in the NGO Forum document (1996), it assumes political and economic autonomy, thus challenging the development and growth model that informs the Rome Declaration on food security. The concept of food sovereignty was developed and presented for the first time by La Via Campesina (the Peasants' Way, in Spanish) during the World Food Summit organized by the FAO in 1996. At that time, it was presented as the "right of people, countries, or state unions to define their own agricultural and food policy without dumping vis-à-vis third countries" (La Via Campesina, 2004). However, this right is not formally recognized by international legal doctrine or by international institutions. Also, the initial definition is not unanimously accepted. Only the concept of decision-making autonomy, which represents the strategic nature of food issues and their public good dimension, is part of the different definitions that exist (Buisson, 2013). These differ in the degree to which they accept the role of markets, the theory of comparative benefits, international trade, and productivist systems in achieving food sovereignty. This concept is therefore interpreted in a wide range of ways, from decision-making autonomy to protectionism. For some of its advocates, the goal of food sovereignty is to foster a return to local, or community, agriculture, intended primarily to supply local, regional, and national markets. According to them, this type of production would be more economically, socially, and environmentally efficient than industrial agriculture and wide-scale agricultural and food production.

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[62]This appendix is based largely on the article by Monfort (2009) and a document of Michigan State University (2012).

While food security is a term that is quite neutral politically, food sovereignty has a more political connotation, for two reasons (Montfort, 2009):

(i) Origins of the concept: developed and put forward by the international movement La Via Campesina, it has since been embraced by different anti-globalization organizations that use it as a way to convey their messages.
(ii) Meaning and scope of concept: food sovereignty is political in essence because, according to its advocates, it refers to the right of a county or a people to implement agricultural policies that are the best suited to their populations, both in terms of food security (by guaranteeing supplies through local production and protection mechanisms, such as customs duties) and sociopolitical and economic issues, such as access to land and markets.

Although often associated with the anti-globalization movement, the concept of food sovereignty is also used in some government discourse (Buisson, 2013). Such is the case, for example, in Quebec, in connection with a recent policy on food sovereignty (Quebec Department of Agriculture, Fisheries and Food, 2013). As it is currently used, the term food sovereignty therefore has a relatively strong political connotation.

Even though it does not explicitly refer to food sovereignty, the concept of food security often comes up today as a political concern, following the world food crisis of 2007-2008. This is evident from the resolutions, the reference and action frameworks, the reports, and the discourse of the many different governments, many of which, from the international to the municipal, structure their thinking around food security. This is also evident from the media attention given to the different aspects of food security and food insecurity.

APPENDIX B – FOOD SECURITY AND NUTRITION[63]

Over the years, numerous formulations and conceptual frameworks have been put forward to define food security and nutrition and their inter-relationship. At the moment, a number of terms are used, including "food security," "food security and nutrition," "nutrition security," and "food and nutrition security," which leads to terminological confusion that is not without consequences. In 2012, the Committee on World Food Security (CFS) noted a lack of consistency in the use of these terms across disciplines and in different languages and concluded that this has often prevented meaningful discussion on how to achieve food security and improved nutrition.

The current term used by CFS – "food security and nutrition" – places emphases on the importance of two complementary but overlapping concepts: food security and nutrition. This combined term has typically been used to make a distinction between actions taken at the global, national, and local levels and those taken at the household or individual level. Many multi-disciplinary actions and investment plans been formulated under this term, and policy makers at all levels are generally aware of the importance of investing in both reducing food insecurity and malnutrition. If there is a weakness in the meaning and use of this combined term, it relates to the fact that the overlapping content of the term, both conceptually and operationally, causes confusion (CSA, 2012).

The term "food and nutrition security" represents a more integrated way to combine the two concepts. It emerged in the mid-1990s and has been used in particular at the household and individual level and when the intent has been to focus attention on actions needed to mainstream nutrition considerations at all points throughout the food chain. It shows that the overall objective is to achieve both food security and nutrition security (which exists when food security is associated with a sanitary environment, adequate health services and care, and an appropriately nutritious diet to ensure a healthy life for household members) as a single, unitary goal of policy and programmatic actions. It is also argued that this formulation encourages different communities of practice to better integrate their work towards achieving food security and nutrition security objectives. It is in this context that the formulation has come into increasingly widespread use. A related concept – sustainable food and nutrition security – appeared recently, in the wake of concerns relating to sustainable development (United Nations System Standing Committee on Nutrition, 2010; Burlingame and Dernini, 2012).

With the term "food and nutrition security," food production, food systems, and socio-economic aspects at the origins of the food security concept are complemented by the biological approach underlying the concept of "nutrition security." In an effort to focus attention on the point that nutrition security is only achieved when individuals actually consume the food they need rather than simply having access to it (as in the currently accepted definition of food security), FOA (2012)[64] has developed the following draft formulation:

"Nutrition security exists when all people at all times consume food of sufficient quantity and quality in terms of variety, diversity, nutrient content and safety to meet their dietary needs and food preferences for an active and healthy life, coupled with a sanitary environment, adequate health, education and care."

The four dimensions of food security (availability, access, utilization, and stability) and the three main determinants of nutrition security (access to food, care and feeding, and health and sanitation) are widely recognized by leading professional communities of practice, especially

[63]This section is based largely on a document of the Committee of World Food Security (CFS, 2012).
[64]Food and Agriculture Organization of the United Nations (2012). Nurition and Consumer Protection Division. Rome.

nutrition and public health experts and professional groups working in the socio-economic, food, and agriculture domains. While there is a significant overlap in the content of these two terms, CFS feels that agreement on a common term would facilitate communication, decisions and actions that support the eradication of food insecurity, hunger, and malnutrition.
In 2012, CFS concluded that the term “food and nutrition security” best reflects the conceptual linkages between food security and nutrition security, while also expressing a single integrated development goal to help guide policy and programmatic action effectively. CFS (2012) recommends the following definition:

> Food and nutrition security exists when all people at all times have physical, social and economic access to food, which is consumed in sufficient quantity and quality to meet their dietary needs and food preferences, and is supported by an environment of adequate sanitation, health services and care, allowing for a healthy active life.

APPENDIX C – FOOD SECURITY AND LIVELIHOODS[65]

The increasing complexity of food security, as well as improved analysis and comprehension, has impelled a number of international development stakeholders to adapt and broaden their approach to this problem to encompass the notion of livelihood security, also called sustainable livelihoods (SL). Under this approach, food security programs and their evaluation are integrated into a more far-reaching framework designed to ensure sustainable livelihoods. Changes in the availability of food and access to that food are therefore determined by means of an evaluation that pertains to both food security and livelihoods.

A livelihood comprises the capabilities, capital, or productive assets (material capital and social and human capital) and activities used by a household for means of living. A household's livelihood is secure when it can cope with and recover from stresses and shocks, and maintain or enhance its capability and productive asset base (Chambers and Conway, 1992, from Action against Hunger, 2010).

The sustainable livelihoods approach or framework (Figure 8) focuses on the strengths and assets that people own to ensure their food security and livelihoods. These are represented by five categories of capital – *human, natural, financial, social (political, religious, cultural), and physical or material* – that people can draw from to achieve positive livelihood outcomes, such as increased income and well-being. The sustainable livelihoods framework portrays food security and livelihoods as a cyclical process. It also adds the notions of *vulnerability* and *reducing risks* that have an impact on vulnerability. It is a practical tool that outlines a holistic approach to the design and monitoring of food security and livelihood interventions.

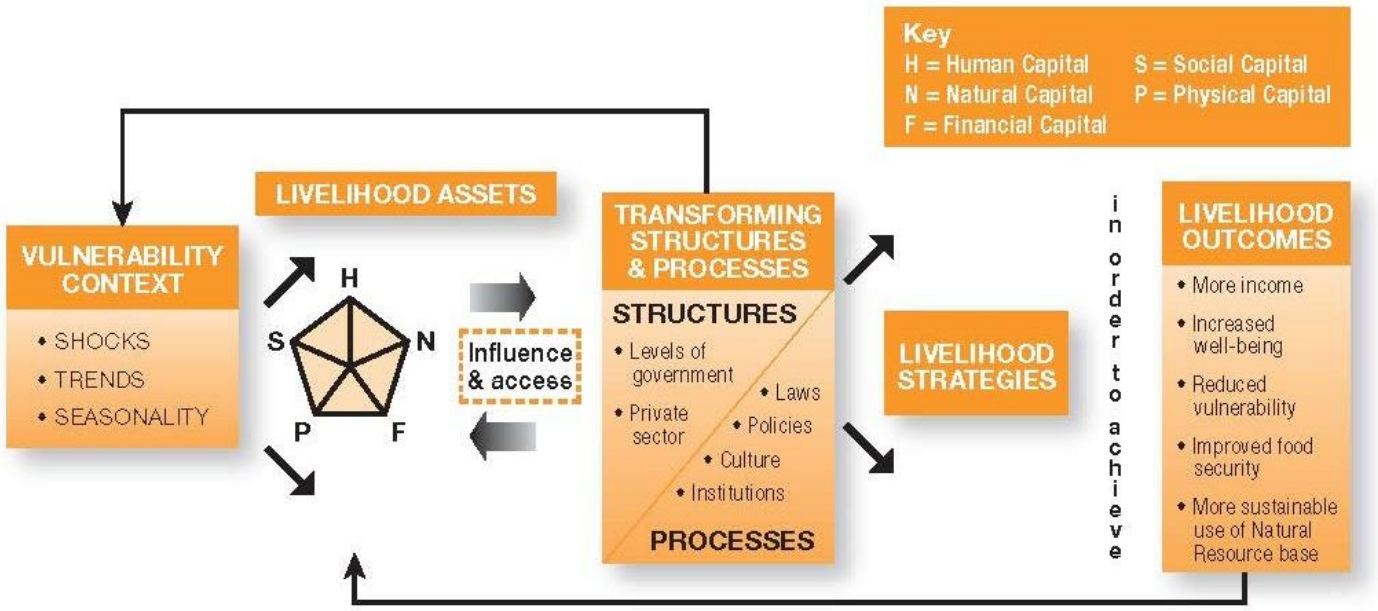

Figure C1. Sustainable Livelihoods Framework

(Action against Hunger, 2010)

[65]Section based in large part on an Action against Hunger document (2010). *Food Security and Livelihood Assessments: A Practical Guide for Field Workers*. ACF International.

The interplay of malnutrition, food security, and livelihoods is illustrated in Figure C2. Malnutrition and the increased prevalence of certain diseases and health problems are among the potential livelihood outcomes when these livelihoods are precarious, in a precarious position, or insufficient.

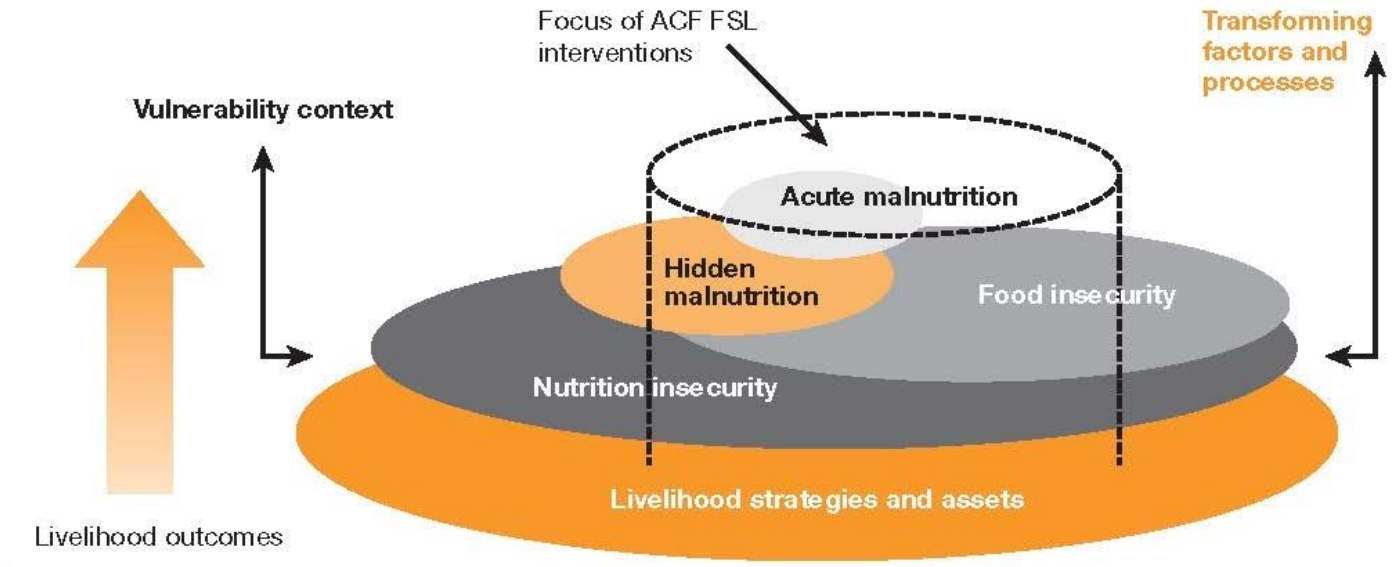

Figure C2 Malnutrition as a potential livelihood outcome

(Action against Hunger, 2010).

In the sustainable livelihoods framework, food security and livelihood programs focus mainly on strengthening the identified livelihood assets (according to the five categories of capital) and influencing the policies and structures or organizations in the government and private sectors in order to reduce vulnerabilities and achieve the targeted outcomes. This framework shows that food security and livelihoods encompass a complex field underpinned by a range of factors that are in constant dynamic flux. It also helps in identifying the limitations of certain actions or interventions. For example, those of food aid organizations have limited ability to impact established factors, such as laws, policies, culture, and institutions, or to change natural conditions such as floods and droughts, the frequency of which is trending upwards owing to climate change. However, these actions or interventions can contribute to the design and implementation of adaptation strategies for reducing vulnerability.

Coping mechanisms are temporary responses to reduce or restrain the effects of a stressful event or an unfavourable situation where food access is abnormally disrupted. *Adaptive mechanisms* are measures used to manage and minimize the risk from chronic food insecurity or recurring situations. *Adaptation* is a process of adjustment to a longer-term situation.

Vulnerability is the inadequacy of adaptive mechanisms, coping mechanisms, or accumulated capital or food stocks to meet people's daily needs. Generally speaking, the level of vulnerability of a household and/or individual is determined by the risk of failure of coping strategies. More specifically, food vulnerability refers to the entire range of factors that place people in danger of food insecurity. The degree of vulnerability for an individual, a household, or a group of people is determined by its exposure to risk factors and by its aptitude to confront crisis situations and to survive them.

Disaster risk reduction is the systematic design and application of policies, strategies, and practices to minimize vulnerability, hazard, and unfolding of disaster impacts on a given population, in the broad context of sustainable development (Action against Hunger, 2010).

Vulnerability, hazards and resilience are related to the strength of livelihood capital and are three key elements that must be acted on for there to be a sustainable impact on household livelihoods and food security.

Historically, the sustainable livelihoods framework was developed in the late 1980s in response to disenchantment with results deemed insufficient in terms of development. It was informed by the work of Chambers and Conway (1992) on livelihoods in rural areas and the work of Sen (1985, 1989) on capabilities and human rights. In practice, there are several variants of this approach, depending on the organization.[66] This diversity reflects the different priorities of the organizations, each variant being first and foremost an adaptation to the institutional culture and the context. These variants present similar interests. Their characteristics are that they are focused on the individual and on sustainability, holistic, implemented in partnership, dynamic, and built on the strengths of vulnerable entities. In addition, they link the micro to the macro. Figure 10 illustrates the sustainable livelihoods approach (from bottom on right) in relation to other food security approaches.

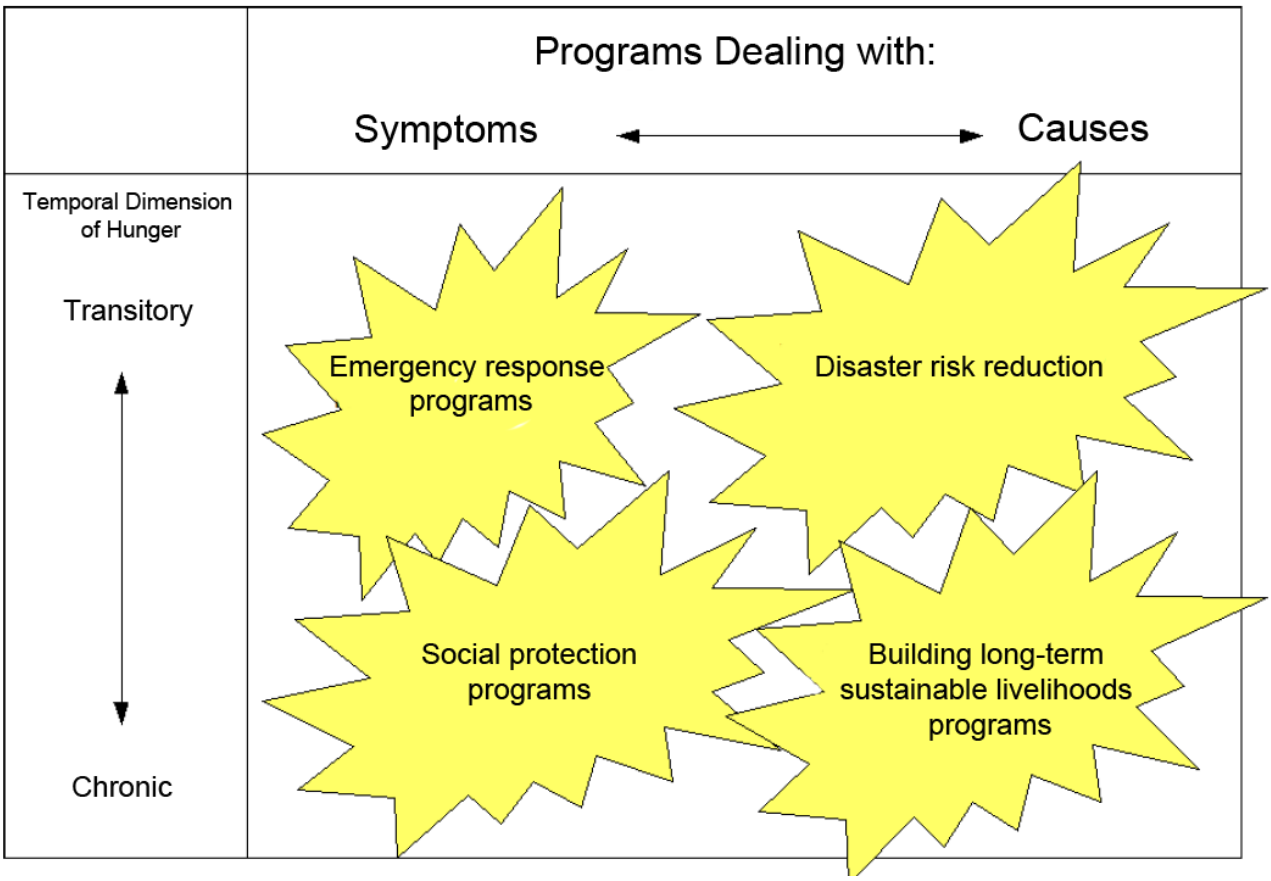

Figure C3. Principal food security frameworks according to Mander (2008)

[66]A number of organizations use the sustainable livelihoods approach and have contributed to its development, including UNDP, FAO, WFP, IFAD, CARE, OXFAM, DFID (British Department for International Development), and DANIDA.

APPENDIX D – THREE-STAGE CONTINUUM / FS AND FI CONCEPTUAL FRAMEWORK

Stage of continuum	Strategies and activities	Indicators
Stage 1: Initial food systems change	a. Counsel clients to maximize access to programs providing food and nutrition assistance, social services, and job training.	a. Number of clients accessing services
	b. Educate clients on healthy food and lifestyle options.	b. Number of clients making positive lifestyle changes
	c. Support existing charitable/emergency food outlets to provide timely service in a dignified manner.	c. Satisfaction of recipients
	d. Map the location of charitable/emergency food outlets.	d. Number, location, and accessibility of outlets
	e. Document the nutritional value of charitable/emergency foods as a baseline for improvement.	e. Nutritional value of foods
	f. Identify price inequities in low-income neighbourhoods, using a nutritious food basket protocol.	f. Cost of nutritious food basket
	g. Map the number and location of high-quality, affordable food outlets.	g. Number, location, and accessibility of grocery stores and farmers' markets
Stage 2: Food systems in transition	a. Connect charitable/emergency food programs with local urban agriculture, community shared agriculture projects, and other local food producers.	a. Number of programs using locally produced foods
	b. Create multi-sector partnerships and networks that work toward community food security.	b. Number of partnerships and networks
	c. Facilitate low-income consumers' access to farmers' markets, community shared agriculture projects, and community gardens.	c. Number of opportunities to access farmers' markets (e.g., buses/other transport, number of residents accessing transportation)
	d. Facilitate the development of i. community kitchens. ii. community gardens. iii. school garden and hydroponics projects. iv. good food box programs/food-buying clubs. v. buy-local campaigns.	d. Other i. Number of kitchens/participants ii. Number of gardens/gardeners iii. Number of projects/students involved iv. Number of programs/participants v. Number of people who know of the campaign, amount of local food sold

Stage 3: Food systems redesign for sustainability	a. Advocate for minimum wage increases, adequate social assistance, a living wage, and more affordable housing.	a. Level of minimum wage, assistance rates, living wage, and rent
	b. Advocate for environments and policies that encourage breastfeeding.	b. Breastfeeding initiation and maintenance rates
	c. Work with governments, organizations, and communities to develop policies for i. land use that facilitates urban agriculture. ii. increasing a community's food self-reliance. iii. tax incentives and financing mechanisms to attract local food businesses to low-income neighbourhoods.	c. Other i. Number of urban agriculture projects ii. Number of local farms/farmers iii. Number of food businesses in low-income neighbourhoods
	d. Adopt healthy food and nutrition policies within health regions to model healthy environments for the rest of the community.	d. Number of facilities adopting policies
	e. Advocate for adequate food budgets for institutions (e.g., long-term care facilities).	e. Number of facilities having adequate budgets
	f. Promote the development of and participate in regional/provincial/national food policy councils.	f. Number of food policy councils, number of policies developed
	g. Promote the development of community food charters.	g. Number of food charters

Figure D1. Examples of FS strategies, activities, and indicators, according to a CFS three-stage continuum

(according to McCullum *et al.*, 2005, adapted by Dietitians of Canada, 2007).
A similar 3-stage continuum was proposed by Kalina (2001):
1) Short-term relief, 2) Capacity building, 3) Redesign

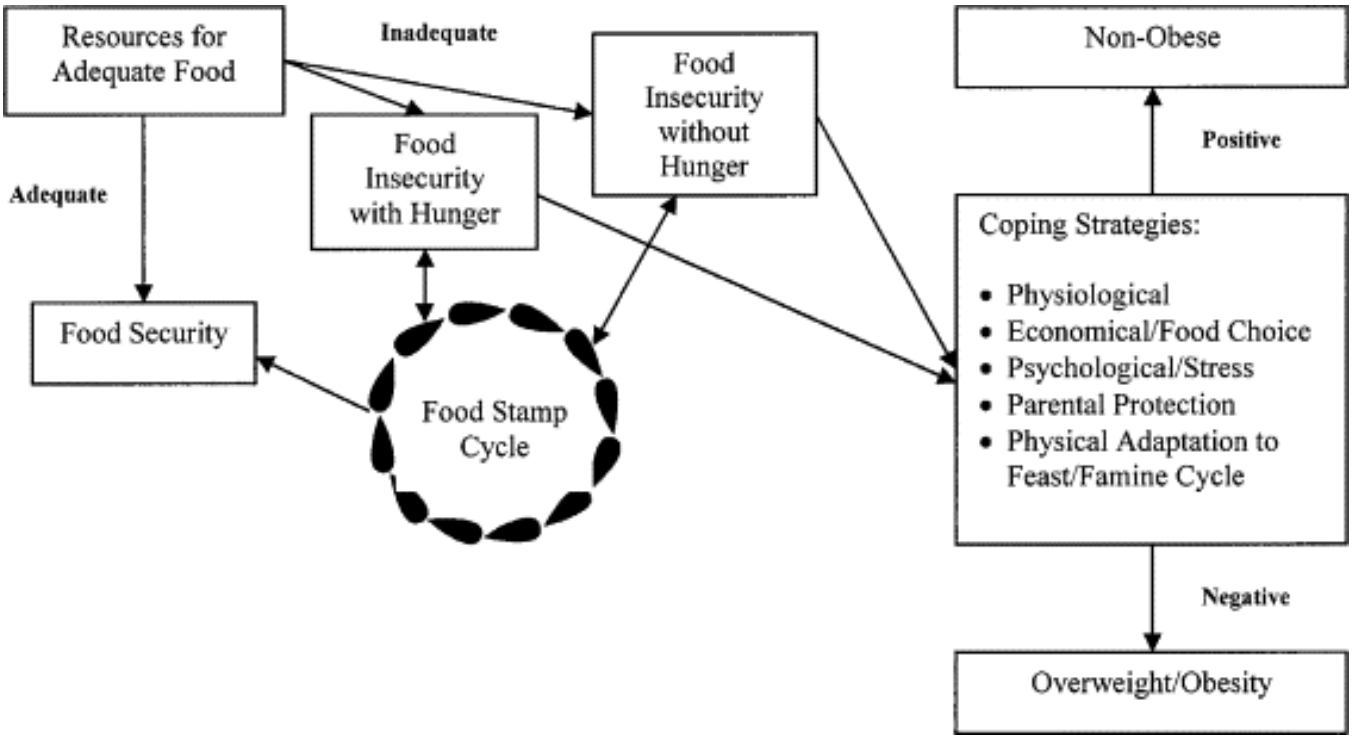

Figure D2. Conceptual framework for household food security/insecurity and its relationship with the food aid cycle and body weight
(Dinour *et al.*, 2007).

These authors used the example of the aid provided by the federal Food Stamp Program in the United States.

APPENDIX E – FORMULAS FOR CALCULATING SAIN AND LIM INDICATORS

SAIN = [((Σ $_{\text{for i of 1 to 5}}$ (Nutrient i / RDA $_{\text{nutrient i}}$)) x 100 / 5)] x 100 / (energy for 100 g)
Nutrient i is the amount of nutrient i found in 100 g of food, expressed in g or mg. RDA $_{\text{nutrient i}}$ is the dietary reference intake for nutrient i. The nutrients i (i of 1 to 5) are nutrient 1: Protein (g); nutrient 2: Dietary fibre (g); nutrient 3: Vitamin C (mg); nutrient 4: Calcium (mg); nutrient 5 : Iron (mg). Energy for 100 g is the energy value of 100 g of the food expressed in kcal. **SAIN > 5: good score**.

LIM = [(Sodium / 2,300) + (Saturated fats / 20) + (Added sugar / 50)] x 100 / 3
Sodium, Saturated fats, and Added sugars are the amounts of these nutrients per 100 g of food, expressed in mg (sodium) or g (saturated fats and added sugar). These values are divided by the daily maximum amount not to be exceeded for these nutrients. **LIM < 7.5: good score**.

APPENDIX F – COMMUNITY INCLUSION NETWORKS AND COUNTIES IN NEW BRUNSWICK

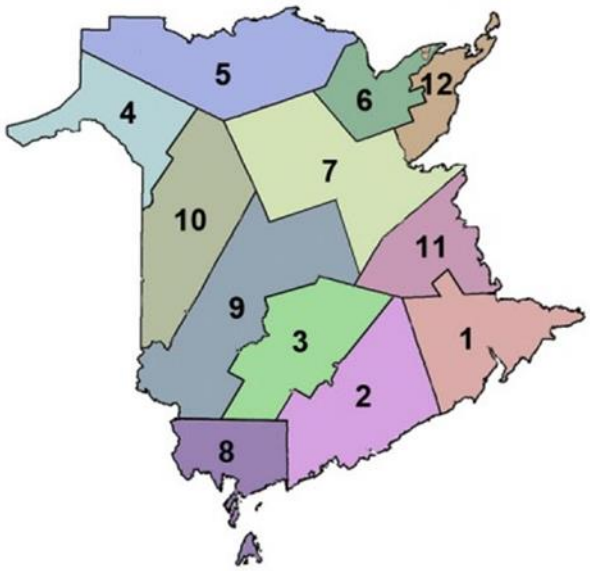

Figure F1. Geographic location of the 12 community inclusion networks (CINs) in New Brunswick.
11 = Kent CIN.
(Government of New Brunswick, 2014)

Figure F2. The 15 counties in New Brunswick
Albert, Carleton, Charlotte, Gloucester, Kent, Kings, Madawaska, Northumberland, Queens, Restigouche, Saint John, Sunbury, Victoria, Westmorland, York
(Government of New Brunswick, 2014)

APPENDIX G – SAFETY AND FOOD LOSSES

Table G1. Safety – Food Banks (n=6 organizations)

Organization	Criterion observed: General upkeep of premises, including storage areas. Short description by investigator.
FB1 Urban, Ang.	Premises located in a church basement.[67] Shelves at regulatory height off the floor but do not seem to be far enough away from the walls. Floors need to be swept and washed. Refrigerators and freezers are clean and in good condition, but the cold room where the vegetables are kept is not adequately equipped for this type of storage.
FB2 Urban, Fr.	Space designed to be shared by a food bank and a soup kitchen. The building is very new, and the space is adapted to the needs of the establishment. Several refrigerators and walk-in freezers are available. The shelves in the refrigerated storage areas meet regulations, and everything is very clean and uncluttered. The organization even has extra refrigerators and freezers in the basement for storing the surpluses it sometimes receives.
FB3 Rural, Ang.	Very clean, about 12 freezers and two large refrigerators, in addition to two dry storage areas. Clubs in the community are very supportive of this food bank.
FB6 Rural, Fr.	Premises very clean.
FB7 R/U, Fr.	Limited space but well maintained; several refrigerators available. Food bank located outside the municipality and not very visible, which enables beneficiaries to go there in private. The organization really needs another freezer.
FB8 Urban, Ang.	Very nice location, sufficiently isolated and adapted to its needs (building designed by engineers from the military base and built by volunteers). Very clean and well organized, sufficient storage and refrigerator/freezer space. Waiting room with toys for children to put beneficiaries at ease. A community room with a kitchen will be available once the final stages of construction have been completed. This will make it possible to generate some revenue by renting out the room for parties, social gatherings, collective kitchens, etc.
	Criterion observed: Handling practices (handwashing facilities, risk of cross-contamination, etc.). Short description by investigator.
FB1 Urban, Ang.	Since no food boxes were prepared on the day of the visit, handling practices could not be observed. There did not seem to be any hand-washing facilities other than in the washrooms. Empty cardboard boxes were sitting on the floor in the cold room and were in contact with the vegetables, which could be a risk for cross-contamination.
FB2 Urban, Fr.	Since little food preparation is done at the food bank, the risk of cross-contamination is low. The director and a number of employees have hygiene and safety certification. There are a number of handwashing facilities. Special attention is paid to inspecting and conserving the food items received. There is strict compliance with the guidelines of Food Banks Canada in this regard, which

[67] This is a fairly typical (and not isolated) situation, which helps to protect anonymity.

	are prominently displayed in the room. Everything the organization receives from restaurants is used in the soup kitchen's meals.
FB3 Rural, Ang.	Not observed for this organization.
FB6 Rural, Fr.	The two people in charge have taken hygiene and safety training and follow the food safety guidelines of Food Banks Canada.
FB7 R/U, Fr.	The person in charge of the food bank follows the guidelines of Food Banks Canada and has hygiene and safety training.
FBA8 Urban, Ang.	The person in charge has taken community food mentor training. The premises are very clean and well maintained.

Table G2. Safety – Soup Kitchens (n=3 organizations)

Organization	Criterion observed: General upkeep of premises. Short description by investigator.
SK1 Urban, Ang.	You have to go through the kitchen to get to and from the storage areas: two dry storage rooms, a refrigerator and freezer. One of the dry storage rooms is separate and smaller. The cook told us that these are things not used in food preparation (individual donations of non-perishable foods not used in meal preparation). Canned goods, Mr. Noodles, etc. could be seen. Farther along is another larger dry storage room. This room looks onto the door of the cold-room type refrigerator, which looks onto the door of the freezer. The refrigerator and freezer are both about 3 or 4 metres deep and 1.5 metres wide. The storage areas are uncluttered and seem well organized.
SK2 Urban, Ang.? (V9SK)	Well-maintained church basement. Maximum use is made of the space. There are a walk-in freezer and a walk-in cooler. Space is not lacking.
SK3 Urban, Fr. (V3FBSK)	Premises are clean, stainless steel industrial-type equipment.
	Criterion observed: Handling practices (handwashing facilities, risk of cross-contamination, etc.). Short description by investigator.
SK1 Urban, Ang.	When we entered the kitchen, the head cook told us that all the kitchen counters and surfaces are disinfected with a disinfectant spray every evening. The kitchen was clean. Later, the manager told us that the organization was subject to the same inspections as restaurants. Everyone working in the kitchen wore latex gloves. The manager told us that there is always an ample supply of these gloves and that employees and volunteers are encourage to wear them and change them quite often to prevent contamination.

SK2 Urban, Ang.?	Clean equipment and counters, handwashing station. No one wearing hairnets the day of the visit. The head cook has hygiene and safety training.
SK3 Urban, Fr.	Low risk of cross-contamination, clean equipment, and sinks available for handwashing. Employees wear gloves and hairnets. Cook has hygiene and safety training. Public Health inspects the premises regularly.

Table G3. Food Losses – Food banks (n=6) and soup kitchens (n=2)

Organization	Question asked during visit: Do you feel there are major food losses within your organization? If so, what are the main reasons for this?
FB1	Losses are pretty much avoided, but the lack of storage space and donations of expired foods result in some loss.
FB2	Losses are relatively minimal because what does not go to the food bank goes to the soup kitchen, and vice versa. The only losses are generally caused by public donations, of which about 30% in the worst cases are expired. In general, about 1-4% of the food is lost. What is received from Food Banks Canada is generally of good quality (not expired) from a safety standpoint.
FB3	Quite rare, the organizations follows the guidelines of Food Banks Canada and does not receive many expired items. Since it buys most the food items that are distributed, it is rare for them to be expired.
FB6	Few losses, good stock rotation, and much of what is given out is purchased.
FB7	Generally, when they buy their food items, i.e. 2 or 3 times a week, there is no problem. They follow the guidelines of Public Health and Food Banks Canada. We saw a number of storage areas: they were clean but another freezer is required.
FB8	No, they rely on the dates and appearance of each food item. If there is any doubt, they refer to the organization's executive director.
SK1	No, we give it out (extra food). Ten to fifteen people sometimes, they bring the leftovers. No food is thrown away. I don't let anything go to waste.
SK2	Not much loss, but sometimes the organization receives food that is almost expired. Stock rotation enables them to avoid wastage.

	Question asked during the visit: What would be helpful in reducing your losses?
FB1	More storage space, not being given expired or mouldy food items, and having access to an affordable collective kitchen for safely canning vegetables, fruit (jam), etc.
FB2	Not applicable
FB3	Not applicable
FB6	Not applicable
FB7	Not applicable
FB8	Not applicable
SK1	Not applicable
SK2	Not applicable

APPENDIX H – MAIN RECOMMENDATIONS

Table H1. Main recommendations concerning the nutritional quality of food aid and other foods available to food-insecure people (see section 3.1 for details)	
#1	Increase the proportion of fresh or frozen products (vegetables and fruit, dairy products, fish) in food aid and in other foods available to people experiencing food insecurity.
#2	Reduce the proportion of salty and sweetened products in food aid and in other foods available to people experiencing food insecurity.
#3	Increase the proportion of whole-grain products in food aid and in other foods available to people experiencing food insecurity.
#4	Non-perishable goods: Increase the proportion of foods high in essential nutrients (vitamins, minerals, dietary fibre, protein, omega-3 essential fatty acids), with little added salt, sugar, or fat, for example, canned fish, powdered milk, 100% pure fruit juice, compotes and soups with a guaranteed vitamin content, vegetable or freeze-dried fruit purées, dried fruits, nuts and seeds, precooked dishes (vegetables/fish, vegetables/meat).
#5	Implement nutrition awareness and education actions (food literacy) aimed at donors, volunteers, and beneficiaries.
#6	Make it easier for food aid organizations to access adequate infrastructures (premises, equipment) for transporting, preparing, and conserving fresh products safely.
#7	Implement programs to help purchase fresh products of good nutritional quality (fresh vegetables and fruit, dairy products, fish in particular).
#8	Develop policies designed to improve access to foods of good nutritional quality for disadvantaged populations or groups.
#9	Ensure better integration and coordination of the different action plans or frameworks aimed at increasing access to food of good nutritional quality, and ensure that their impacts are evaluated.
#10	Ensure regular evaluation of strategies, programs, actions, activities, and services aimed at improving the availability and accessibility of foods of good nutritional quality, and ensure dissemination of the results and sharing of knowledge.
#11	Use food diversity indicators (qualitative diversity of foods distributed as food aid or otherwise accessible to people experiencing FI, diversity of household food) to monitor actions aimed at increasing food security.
#12	Continue advocacy actions promoting the right to a balanced diet for food-insecure people.

APPENDIX I – MEALS SERVED BY SOUP KITCHENS

This section looks at the meals served by soup kitchens, as reported by those in charge of the organizations that completed the survey. For these questions, the number of respondents ranged from 3 to 10.

With respect to meal frequency, the response provided most often was 5 days per week (5 respondents in 10), followed by 7 days per week, 1 or 2 times per month, and 1 day per week (Table I1). Meals were mostly free, with a cost associated with just one (Table I2), although that cost was a modest $0.50.

Table I1.

(How often do you serve meals?)

Response	Graph	Percentage	Number
7 days per week		20%	2
6 days per week		0%	0
5 days per week		50%	5
4 days per week		0%	0
3 days per week		0%	0
2 days per week		0%	0
1 day per week		10%	1
1 or 2 times per month		20%	2

A total of 10 respondents answered this question..

Table I2.

(Is there a cost associated with the meals or are they free?)

Response	Graph	Percentage	Number
Free		80%	8
Cost		10%	1

A total of 9 respondents answered this question.

Lunch was the meal most normally served (8 respondents in 10), followed by supper (5 respondents), breakfast (3 respondents), and other (1 respondent) (light snack at 8 p.m.) (Table I3). For number of times clients or beneficiaries could be served during a given meal, the responses were split mainly between “Once” and “At will” for lunch and supper (Tables I5 and I6). For supper, one respondent indicated that beneficiaries could be served until there was no food left. For breakfast, three respondents indicated that beneficiaries could be served at will (Table I4).

Table I3.

(What types of meals do you normally serve?)

Response	Graph	Percentage	Number
Lunch		80%	8
Supper		50%	5
Breakfast		30%	3
Other		10%	1

A total of 10 respondents answered this question.

Total may be greater than 100% because respondents could choose more than one answer.

Table I4.

(How many times during a given breakfast are clients or beneficiaries allowed to be served?)

Response	Graph	Percentage	Number
Once		0%	0
Twice		0%	0
Three times		0%	0
At will		100%	3
Other		0%	0

A total of 3 respondents answered this question.

Table I5.

(How many times during a given lunch are clients or beneficiaires allowed to be served?)

Response	Graph	Percentage	Number
Once		50%	4
Twice		0%	0
Three times		0%	0
At will		50%	4
Other		0%	0

A total of 8 respondents answered this question.

Table I6.

(How many times during a given supper are clients or beneficiaries allowed to be served?)

Response	Graph	Percentage	Number
Once		40%	2
Twice		0%	0
Three times		0%	0
At will		40%	2
Other		20%	1

A total of 5 respondents answered this question.

When lunch and supper were provided, the supper menu was not the same as the lunch menu (3 respondents in 3) (Table I7).

Table I7.

(Is the menu that you most often serve for supper the same as the one you most often serve for lunch?

Response	Graph	Percentage	Number
Yes		0%	0
No		100%	3

A total of 3 respondents answered this question.

For breakfast (Tables I8 to I10), cereal, white bread, whole wheat bread, and eggs were the foods most often served (3 respondents in 3). Fresh fruit, dairy products, and oatmeal-type cereal were mentioned less often. The beverages served most often were water, coffee, and tea, followed by fruit juices and milk. The condiments served most often were peanut butter, sugar, jam, butter, and salt.

Table I8.

(Which breakfast do you most often serve for your morning meal?)

Response	Graph	Percentage	Number
Cereal		100%	3
White bread		100%	3
Whole wheat bread		100%	3
Eggs		67%	2
Hot cereal (e.g. oatmeal)		33%	1
Breakfast meats (e.g. sausages, bacon, ham)		33%	1
Fresh fruit (e.g. orange, apple, grapes, banana)		33%	1
Dairy product (e.g. yogourt, cheese)		33%	1
Breakfast pancakes		33%	1
Muffin, commercial		33%	1

A total of 3 respondents answered this question.
Total may be greater than 100% because respondents could choose more than one answer.

Table I9.

(What beverages are most often served with a normal breakfast?)

Response	Graph	Percentage	Number
Water		100%	3
Coffee		100%	3
Tea		100%	3
Fruit juice (100% pure juice, no sugar added)		33%	1
"Cocktail"-type juice or flavoured powdered juice (e.g. "Kool-Aid"), sugar added		33%	1
Milk		33%	1

A total of 3 respondents answered this question.

Total may be greater than 100% because respondents could choose more than one answer.

Table I10.

(What condiments do you most often serve with a normal breakfast?)

Response	Graph	Percentage	Number
Peanut butter		100%	3
Sugar		100%	3
Jam		67%	2
Butter		67%	2
Salt		67%	2
Margarine		33%	1
Coffee cream, cereal cream		33%	1
Other		33%	1

A total of 3 respondents answered this question.

Total may be greater than 100% because respondents could choose more than one answer.

For lunch (Tables I11 to I17), vegetable soup was served most often (4 respondents in 8). The “Other” category was mentioned by three respondents, including one who indicated that the soup was prepared using whatever ingredients were available. A plate of meat, vegetables, and potatoes was the main dish served most often at lunch (6 respondents in 8). The two side dishes served most often were garden salad and pasta, followed by potato salad with eggs and mayonnaise, and fries. The bread served most often was white bread (4 respondents in 8), followed by whole wheat bread (2 respondents). For dessert, cakes and cookies were served most often (5 respondents in 8), followed by the “Other” category (e.g. depending on what was available). The condiments served the most often were margarine, ketchup, pepper, salt, and sugar. For beverages, coffee was served most often, followed by water and fruit juices (with or without added sugar).

Table I11.

(Which soup do you most often serve for lunch?)

Response	Graph	Percentage	Number
Vegetable soup (made with tomato, vegetables, cream, other)		50%	4
Noodle and meat soup (beef, poultry, pork, other)		13%	1
Meat-based soup (beef, poultry, pork, other)		0%	0
Fish soup (e.g. chowder, other)		0%	0
“Fricot” or stew		0%	0
Legumes (e.g. pea soup)		0%	0
Other		38%	3
None		0%	0

A total of 8 respondents answered this question.

Table I12.

(Which main dish do you most often serve for lunch?)

Response	Graph	Percentage	Number
Plate of meat, vegetables and potatoes		75%	6
Macaroni and cheese (homemade)		13%	1
Other		13%	1

A total of 8 respondents answered this question.

Table I13.

(Which side dish do you most often serve for lunch?)

Response	Graph	Percentage	Number
Garden salad (lettuce, cucumber, tomatoes, other)		38%	3
Pasta		38%	3
Potato salad with eggs, mayonnaise		13%	1
Fries		13%	1
Caesar salad (lettuce, with bacon, croutons, cheese, other)		0%	0

A total of 8 respondents answered this question.

Table I14.

(Which bread do you most often serve for lunch?)

Response	Graph	Percentage	Number
Bun or slice of white bread		50%	4
Bun or slice of whole wheat bread		25%	2
Other		12%	1
None		12%	1

A total of 8 respondents answered this question.

Table I15.

(Which condiments do you most often serve with lunch?)

Response	Graph	Percentage	Number
Margarine		14%	6
Ketchup		14%	6
Pepper		14%	6
Salt		12%	5
Sugar		12%	5
Butter		9%	4
Salad dressing		9%	4
Mustard		9%	4
Coffee cream		7%	3

A total of 43 respondents answered this question..

Total may be greater than 100% because respondents could choose more than one answer.

Table I16.

(What dessert do you most often serve with lunch?)

Response	Graph	Percentage	Number
Cakes or cookies		63%	5
Canned fruits		13%	1
Other		25%	2

A total of 8 respondents answered this question.

Table I17.

(What beverage do you most often serve with lunch?)

Response	Graph	Percentage	Number
Coffee		43%	3
Water		29%	2
Fruit juice (100% pure juice, no sugar added)		14%	1
"Cocktail"-type juice or flavoured powdered juice (e.g. "Kool-Aid"), sugar added		14%	1

A total of 7 respondents answered this question..

For supper (Tables I18 to I24), vegetable soup was the soup most often served (2 respondents in 3), followed by meat-based soup. Meat sandwich was mentioned as one the foods most often served (2 respondents in 5), followed by pasta and shepherd's pie. One respondent indicated that each of these foods was served in a weekly rotation. The side dishes most often served were garden salad, pasta, and other (e.g. rice). The bread most often served was white bread (3 respondents in 5). None of the respondents indicated whole wheat bread. For dessert, cakes and cookies and the "Other" category topped the list. For this category, one respondent said that dessert varied depending on the donations. A variety of condiments were reported: salt, pepper, sugar, margarine, salad dressing, ketchup, etc. For beverages, coffee was served most often, following by water and fruit juices (with or without added sugar).

Table I18.

(Which soup do you most often serve for supper?)

Response	Graph	Percentage	Number
Vegetable soup (made with tomato, vegetable, cream, other)		67%	2
Meat-based soup (beef, poultry, pork, other)		33%	1
Noodle and meat soup (beef, poultry, pork, other)		0%	0
Fish soup (e.g. chowder, other)		0%	0
"Fricot" or stew		0%	0
Legumes (e.g. pea soup)		0%	0
Other		33%	1
None		33%	1

A total of 5 respondents answered this question.

Table I19.

(Which main dish do you most often serve for supper?)

Response	Graph	Percentage	Number
Ham, chicken or other meat sandwich		40%	2
Pasta with tomato sauce and meat (e.g. beef, poultry, pork, other)		20%	1
Shepherd's pie		20%	1
Other		20%	1

A total of 5 respondents answered this question..

Table I20.

(What side dish do you most often serve for supper?)

Response	Graph	Percentage	Number
Garden salad (lettuce, cucumber, tomatoes, other)		40%	2
Pasta		20%	1
Caesar salad (lettuce, with bacon, croutons, cheese, other)		0%	0
Potato salad with eggs, mayonnaise		0%	0
Fries		0%	0
None		20%	1
Other		20%	1

A total of 5 respondents answered this question.

Table I21.

(Which bread do you most often serve for supper?)

Response	Graph	Percentage	Number
Bun or slice of white bread		60%	3
Bun or slice of whole wheat bread		0%	0
Other		40%	2
None		0%	0

A total of 5 respondents answered this question..

Table I22.

(What condiments do you most often serve with supper?)

Response	Graph	Percentage	Number
Salt		80%	4
Pepper		80%	4
Sugar		80%	4
Margarine		60%	3
Salad dressing		60%	3
Ketchup		60%	3
Mustard		60%	3
Mayonnaise		40%	2
Coffee cream		40%	2
Butter		20%	1

A total of 5 respondents answered this question.

Total may greater than 100% because respondents could choose more than one answer.

Table I23.

(What dessert do you most often serve with supper?)

Response	Graph	Percentage	Number
Cakes or cookies		40%	2
Donuts		20%	1
Other		40%	2

A total of 5 respondents answered this question.

Table I24.

(Which beverage do you most often serve with supper?)

Response	Graph	Percentage	Number
Coffee		40%	2
“Cocktail”-type juice or flavoured powdered juice (e.g. "Kool-Aid"), sugar added		20%	1
Other		20%	1
None		20%	1

A total of 5 respondents answered this question.

For the number of meals served in March 2013, the responses were split among three categories: 0 to 1,999 (5 respondents in 10), 2,000 to 3,999 (3 respondents), and 6,000 or more (2 respondents) (Table I25). Six respondents said they had served between 0 and 999 people. Three respondents indicated 1,000 or more (Table I26).

Table I25.

(Do you know how many meals in total you served last March?)

Response	Graph	Percentage	Number
0 to 1,999		50%	5
2,000 to 3,999		30%	3
4,000 to 5,999		0%	0
6,000 or more		20%	2
No, I don’t know		0%	0

A total of 10 respondents answered this question.

Table I26.

(Do you know how many individuals you served meals to last March?)

Response	Graph	Percentage	Number
0 to 999		67%	6
1,000 or more		33%	3
No, I don’t know		5%	1

A total of 10 respondents answered this question.