

# ABORIGINAL FOOD SECURITY IN NORTHERN CANADA: AN ASSESSMENT OF THE STATE OF KNOWLEDGE

Executive Summary



Council of Canadian Academies  
Conseil des académies canadiennes

*Science Advice in the Public Interest*



**ABORIGINAL FOOD SECURITY IN NORTHERN CANADA:  
AN ASSESSMENT OF THE STATE OF KNOWLEDGE**

**Expert Panel on the State of Knowledge  
of Food Security in Northern Canada**

## THE COUNCIL OF CANADIAN ACADEMIES

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## **Expert Panel on the State of Knowledge of Food Security in Northern Canada**

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## Message from the Chair

The importance of food security and its potential impact on both global and local issues cannot be overstated. National and political security, physical and mental health, and community and individual development are some of the factors that influence and are influenced by food security. It is well established that in northern Canada food insecurity is a serious problem that affects the health and wellness of Northerners, with implications for Canada more broadly.

It is for this reason that our Expert Panel was convened to seek evidence on the state of knowledge of the factors influencing food security in the Canadian North, and on the health effects of food insecurity among Canada's northern Aboriginal populations. The Panel embarked on this mission with some trepidation — not because we were daunted by the task assigned to us. Rather, the trepidation resulted from knowing just how much evidence there is from scientific research and documentation, and also from a rich base of traditional knowledge and grey literature that informs the subject, but of which a comprehensive review has never been conducted.

To understand food security in northern Canada, we considered the unique dimensions of northern Canada's vast geography, remote and diverse communities, a cold but shifting climate, and quickly changing economic and social environments — to name a few. While these are all important and complex factors, the human dimension of food security remained at the core of all of the Panel's work. For generations, northern Aboriginal peoples have relied upon traditional knowledge to achieve sustainable livelihoods. The adaptive strategies enacted in response to the rapid and major transitions occurring within northern communities provide further evidence of Northerners' resilience. Moving forward, interventions and policies can be identified, verified, and evaluated. It became clear to us that sustainable solutions to improve food security must be holistic, be enabled by traditional knowledge, respond to locally identified needs, and be paired with economic development strategies. To achieve food sovereignty, support for local food systems is essential. All of these solutions require Northerners to have and continue to establish program ownership.

To those who are familiar with the challenges of achieving food security in northern Canada, the Panel's findings may not be surprising. To these readers, the importance of this report may very well be in its bringing together in one document all the findings related to the state of knowledge about food security and consideration of interventions to improve food security in northern Canada. To Canadians who are unaware of the severity of the situation, the Panel's

findings may indeed be alarming. Further research is critical for surveillance and monitoring of traditional and market food availability, access, utilization, and sustainability, as well as the health status of Northerners.

We know we cannot turn the tide on the nutrition transition, a result of moving away from the predominance of nutrient-rich traditional and country food towards market food. However, health and wellness outcomes can be improved if everyone works together. Addressing food insecurity in the North is a complex challenge that touches on governance and food sovereignty, on poverty and economic development, and on self-determination and education. We hope the Panel has presented its findings in a report that will provide policy-makers, researchers, and, most of all, those individuals and communities affected by food insecurity in the North, with some tools to achieve sustainable and effective solutions.

I take this opportunity on behalf of our Panel to thank Health Canada for their interest in this subject and the Council of Canadian Academies for convening the Expert Panel. Elizabeth Dowdeswell, Council President, and Janet Bax, our Program Director, have ably guided us through the Council's processes and requirements. We were indeed fortunate to have highly qualified staff assistance from Andrea Hopkins as Program Coordinator, and Laura Bennett and Stephanie Meakin as Research Associates.

A handwritten signature in cursive script that reads "Harriet V. Kuhnlein".

**Harriet V. Kuhnlein, Chair**

Expert Panel on the State of Knowledge of Food Security in Northern Canada

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## Report Review

This report was reviewed in draft form by the individuals listed below — a group of reviewers selected by the Council of Canadian Academies for their diverse perspectives, areas of expertise, and broad representation of academic, industrial, policy, and non-governmental organizations.

The reviewers assessed the objectivity and quality of the report. Their submissions — which will remain confidential — were considered in full by the Panel, and many of their suggestions were incorporated into the report. They were not asked to endorse the conclusions, nor did they see the final draft of the report before its release. Responsibility for the final content of this report rests entirely with the authoring Panel and the Council.

The Council wishes to thank the following individuals for their review of this report:

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The report review procedure was monitored on behalf of the Council's Board of Governors and Scientific Advisory Committee by **Dr. Sarah P. Otto, FRSC**, Professor and Director of the Biodiversity Research Centre, University of British Columbia (Vancouver, BC). The role of the report review monitor is to ensure that the Panel gives full and fair consideration to the submissions of the report reviewers. The Board of the Council authorizes public release of an expert panel report only after the report review monitor confirms that the Council's report review requirements have been satisfied. The Council thanks Dr. Otto for her diligent contribution as report review monitor.



**Elizabeth Dowdeswell, O.C.**, President and CEO  
Council of Canadian Academies

## Preface

The issues and concerns surrounding northern food security challenge conventional definitions of expertise and evidence. The Council of Canadian Academies (the Council) was tasked by the Sponsor, Health Canada, to form an expert panel to generate an evidence-based report on northern food security and its implications for Aboriginal health. A multidisciplinary panel of Aboriginal and non-Aboriginal scholars (the Panel) met five times over 15 months to create this report. A draft version was peer-reviewed by 11 experts. Panellists have extensive experience working with Indigenous communities; most have lived and worked in northern communities, and many continue to do so. Council methodology precludes direct stakeholder consultation; however, the Panel sought the cooperation of national Aboriginal organizations and others in its pursuit of evidence. The composition of the Panel and the nature of the evidence incorporated into this report reflect the Council's definitions of expertise and evidence, including an emphasis on volunteered academic expertise and published, peer-reviewed evidence. The scope and emphasis of the report necessarily reflect the Sponsor's charge to the Panel, and the tone reflects the Council's policy of insistence on presenting and summarizing evidence while avoiding advocacy. Thus the Panel and the final report are both products of the constraints under which they were created.

A major finding of the report is the importance of lived, northern experience and traditional knowledge in defining and addressing the issues surrounding northern food security. Although the report emphasizes academic expertise of published, peer-reviewed literature, the direct experience and knowledge of northern peoples are exceedingly important sources of evidence needed to address the issues. Therefore, the lack of a comprehensive review of northern food security derived from the first-hand experience and knowledge of northern peoples is a major knowledge gap identified by the Panel.

Local, regional, national, and international knowledge, experiences, and policies demonstrate that opportunities exist to move Canadians closer to achieving food security and food sovereignty. However, to generate the most sustainable, responsive, and practical solutions, the evidence base must be expanded so that Aboriginal communities, researchers, policy-makers, and Northerners can create sustainable and dignified solutions to the long-standing complex challenge of food insecurity among Aboriginal peoples in the North.

## Executive Summary

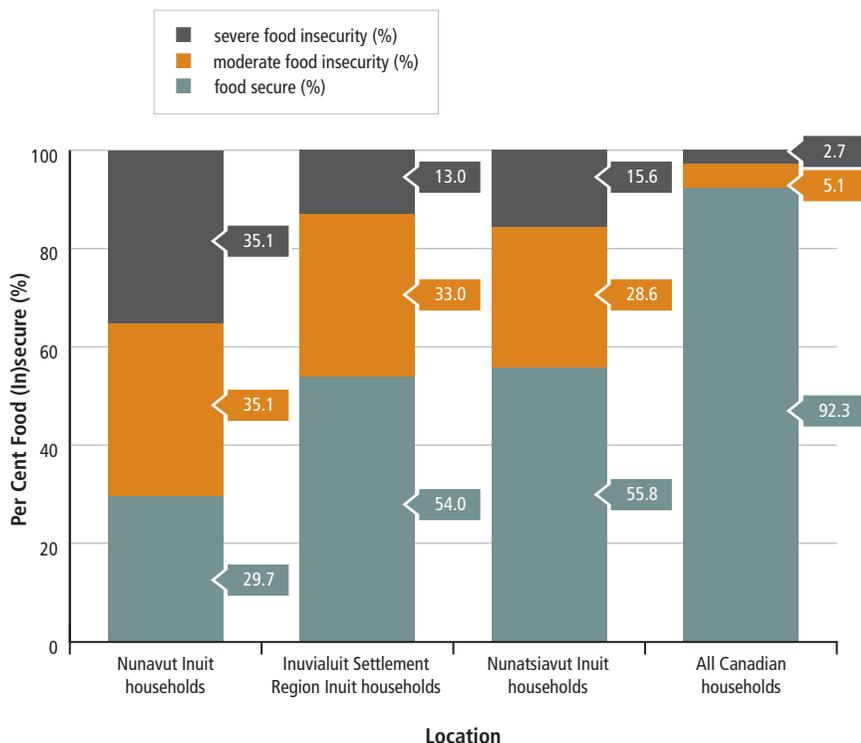
As the world's population increases, as global markets become more interconnected, and as the effects of climate change become clearer, the issue of food insecurity is gaining traction at local, national, and international levels. The recent global economic crisis and increased food prices have drawn attention to the urgent situation of the world's 870 million chronically undernourished people who face the number one worldwide risk to health: hunger and malnutrition. Although about 75% of the world's undernourished people live in low-income, rural regions of developing countries, hunger is also an issue in Canada. In 2011, 1.6 million Canadian households, or slightly more than 12%, experienced some level of food insecurity. About one in eight households are affected, including 3.9 million individuals. Of these, 1.1 million are children.

Food insecurity presents a particularly serious and growing challenge in Canada's northern and remote Aboriginal communities (see Figure 1). Evidence from a variety of sources concludes that food insecurity among northern Aboriginal peoples is a problem that requires urgent attention to address and mitigate the serious impacts it has on health and well-being. Results from the 2007–2008 International Polar Year Inuit Health Survey indicate that Nunavut has the highest documented rate of food insecurity for any Indigenous population living in a developed country. According to estimates from the 2011 Canadian Community Health Survey (CCHS), off-reserve Aboriginal households across Canada experience food insecurity at a rate that is more than double that of all Canadian households (27%). Recent data indicate that Canadian households with children have a higher prevalence of food insecurity than households without children, and preliminary evidence indicates that more women than men are affected.

### **Box 1**

#### **Food Security and Food Insecurity**

As proposed by the FAO Committee on World Food Security in 2013, the most current definition of food security has been expanded to emphasize the importance of nutrition. Food and nutrition security exist "when all people at all times have physical, social and economic access to food, which is safe and 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 and active life." Food insecurity is the converse. It is an outcome of inadequate or uncertain access to an acceptable amount and quality of healthy food.



Data Source: Egeland, 2010a, 2010b, 2010c; Health Canada, 2008

Figure 1

**Prevalence of Household Food Insecurity Across Northern Regions and Canada, 2007–2008**

Data show food insecurity among Inuit households in Nunavut, the Inuvialuit Settlement Region, and Nunatsiavut (data from IPY Inuit Health Survey using a modified Household Food Security Survey Module (HFSSM) survey tool as presented in Egeland, 2010a, 2010b, 2010c), as well as food insecurity among all Canadian households in 2007–2008 (data from Canadian Community Health Survey, 2007–2008 using the HFSSM survey tool as presented in Health Canada, 2008). Proportions are shown within the bars (numbers may not add due to rounding). Nunavut Inuit Health Survey and First Nations Regional Health Survey results are not included because they used a different methodology to collect the data (i.e., different questions were asked), rendering the data unfit for direct comparisons.

**CHARGE TO THE PANEL**

Much remains unknown about the complex factors that influence food security in northern Canada, as well as the health implications of this challenge. To better understand these issues, in October 2011 the Minister of Health, on behalf of Health Canada (the Sponsor), asked the Council of Canadian Academies (the Council) to appoint an expert panel (the Panel) to respond to the following question:

*What is the state of knowledge of the factors influencing food security in the Canadian North and the health implications of food insecurity for Northern Aboriginal populations?*

In addition, the Sponsor asked five sub-questions:

- 1. How are social, environmental, economic, and cultural factors impacting food security, and the subsequent health of Northern Aboriginal populations? Considering the interaction among these factors, what are the knowledge gaps associated with enablers and barriers to food security?*
- 2. What are the current knowledge gaps in food security as a determinant of health for Northern Aboriginal populations, particularly in the areas of nutrition and environmental health? What are these knowledge gaps in the context of store-bought and country food? What is known about the relationship between country/traditional food and food security, for example, the use and importance of traditional foods, harvesting practices and resources to support these, food sharing systems, marketing systems, and their contribution to food security among Northern Aboriginal populations? What are effective ways to promote country/traditional food consumption, especially among youth, taking into consideration nutrition education, skills development and approaches to knowledge exchange (e.g., intergenerational; use of technologies)?*
- 3. What is known about the evidence base that informs strategies to mitigate food insecurity among Northern Aboriginal populations? What can be learned from strategies implemented by other circumpolar countries, such as Greenland?*
- 4. What contribution are traditional knowledge networks of Northern Aboriginal communities making to food security research?*
- 5. What are the international approaches to developing scientific evidence and knowledge systems in support of interventions to mitigate food insecurity among northern Aboriginal populations?*

A multidisciplinary panel of Aboriginal and non-Aboriginal scholars met five times over 15 months to create this report, which was peer-reviewed by 11 experts. While the direct experience and knowledge of northern peoples are exceedingly important forms of evidence needed to identify and address northern food security issues, Council methodology precludes direct stakeholder consultation. However, the Panel sought cooperation of national Aboriginal

organizations and others to gather additional evidence. Volunteered academic expertise, published, peer-reviewed literature, and credible grey literature formed the basis of scholarship and evidence for this report.

## **PANEL'S APPROACH TO THE ASSESSMENT**

While food insecurity is not a new problem, the ways in which it is currently experienced in northern Canada are highly contemporary. Processes of colonialism and environmental dispossession, rapid and sometimes unpredictable environmental change, economic transitions and material poverty, changing demographics, and current logistical challenges are some of the factors that shape this modern version of food insecurity. Food safety issues, changing food knowledge and preferences, and the extent to which intergenerational knowledge transmission and self-determination are practiced represent other factors that affect contemporary food security. Alone, these factors are complex. This complexity is heightened in consideration of how the factors connect with one another, and, of course, with people. To create appropriate and effective policy and program responses, the Panel agreed that it was critical to identify the level and scope of food (in)security; individual, household, community, regional, and national contexts necessitate different types of analysis and engagement.

With this in mind, the Panel chose to take a holistic approach to the assessment. It developed a people-centred framework that highlights the dynamic interplay between northern Aboriginal peoples and the diverse factors that affect their lives (see Figure 2). Rather than being understood as discrete entities, the concepts of food security and food sovereignty emerge from the inter-relationships of the multiple factors and themes in the framework. The framework conveys the breadth and complexity of the factors that the Panel deemed necessary to respond to the charge, while also providing insight into (a) the relationships that emerge at the intersections of the factors, and (b) the various factors that are important considerations in strategies to mitigate food insecurity. Each factor presented in the framework was considered in the report; some understandings and linkages remain clearer than others.

The complexity of the interactions of all these factors and themes points to the need for multidisciplinary approaches to understanding and resolving the issues. The Panel envisioned this framework as a tool to be used by policy-makers, researchers, and individuals and communities affected by food insecurity in the North to analyze food (in)security at the level that is most meaningful to them, and to achieve sustainable and effective solutions.

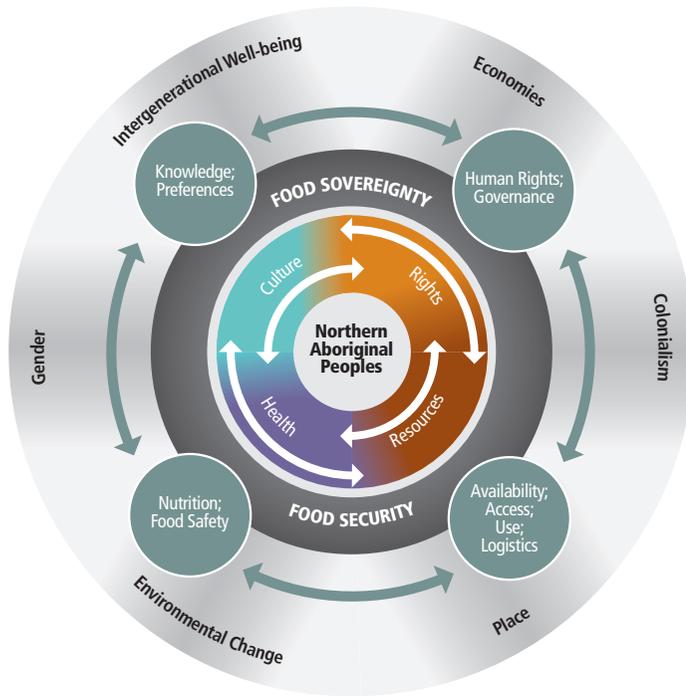


Figure 2

### The Panel's Conceptual Framework

The Panel developed this dynamic, holistic, people-centred framework as a tool for analyzing and understanding food security and food sovereignty in northern Canada. The wheel represents the complex interplay between factors that affect northern Aboriginal peoples, and how food security and food sovereignty emerge from these relationships. Because the framework is fluid, no single factor should be interpreted as static or merely linked to the factor to which it is most closely positioned. Each factor is understood to have multiple relationships with other concepts within the wheel. The framework conveys the complexity of the factors that the Panel deemed necessary to respond to the charge, while also providing insight into (a) the relationships that emerge from these connections, and (b) the diverse factors that are important considerations in strategies to mitigate food insecurity.

### FOOD SECURITY AND FOOD SOVEREIGNTY

Using traditional knowledge throughout times of abundance and scarcity, Aboriginal peoples of northern Canada have developed and adapted dynamic relationships with the environments in which they live. These relationships include shifting practices of harvesting spiritually and nutritionally valuable native plant and animal wildlife species known locally as *country* or *traditional* food. The harvesting of food from the land, water, and sky continues to be a necessary and important part of the lives and identity of the many diverse

peoples known in Canada as First Nations, Inuit, and Métis. With this in mind, the Panel highlighted the importance of pairing the concept of food security with that of food sovereignty, as demonstrated in the conceptual framework. While food security focuses on the pillars of food access, availability, acceptability, adequacy, and use to ensure that all people at all times have physical, social and economic access to food, food sovereignty is based on the principle that decisions about food systems, including markets, production modes, food cultures, and environments, should be made by those who depend on them. Support for autonomous community food systems, community-based research, and community-based solutions that respond to locally identified needs emerged as essential steps towards meeting the goal of sustainable and local food self-sufficiency.

### HEALTH IMPLICATIONS OF FOOD INSECURITY

The Panel agreed that health and wellness can be an enabler of food security, as well as an outcome of being food secure. Conversely, poor health can be a barrier to food security and an outcome of being food insecure. While Aboriginal health is understood holistically in this report, comprising mental, physical, spiritual, emotional, and social dimensions, Aboriginal peoples' basic health status measures and conditions tend to be worse than those of Canadians in general. Compared with most Canadians, Aboriginal populations have higher acute myocardial infarction mortality, higher rates of obesity and other risk factors for heart diseases, and higher rates of mental health problems such as suicide, depression, and substance abuse. Diabetes has reached epidemic proportions in some Aboriginal communities, and First Nations, Métis, and Inuit recount lower levels of self-reported health compared with the general population. The nutrition transition, a result of moving away from nutrient-rich traditional and country food-based diets towards ones based on market food, may increase the risk for diet-sensitive chronic diseases and micronutrient deficiencies in northern Aboriginal communities.

Evidence indicates that people who are food insecure are more susceptible to malnutrition and infection, as well as chronic health problems such as obesity, anemia, cardiovascular disease, diabetes, stress, and child developmental issues. Mental health effects of food insecurity include reduced ability to learn, depression, and social exclusion. The Panel concluded that the toll of food insecurity on human well-being and the economic costs of an emerging public health crisis in northern Canada represent serious concerns that require immediate attention and integrated responses.

## KNOWLEDGE GAPS

While much is generally known about the factors influencing food security in the Canadian North and the health implications of food insecurity for northern Aboriginal populations, significant gaps remain. For example, a rich base of traditional knowledge and grey literature informs the subject, but a comprehensive review of contributions derived from first-hand experience and knowledge of northern peoples has yet to be conducted. Through a synthesis of the existing literature, the Panel identified several priority areas for further investigation, including:

- research and monitoring methodologies;
- health, wellness, and nutrition transition;
- social determinants of food security;
- the supply chain costs of market food systems;
- climate change, the environment, and traditional/country food systems;
- food sovereignty and governance; and
- food security and knowledge translation.

Data gaps limit the extent to which researchers, communities, and policy-makers can report on and monitor food security and health indicators. Ultimately, these gaps have implications for outcome measures. Beyond obtaining data sets that are comparable in quantity and quality to those available for the majority of the Canadian population, there is a need to adapt data collection tools and standards to the varied realities of Aboriginal peoples in Canada. A consistent and relevant understanding of the situation across different communities of Aboriginal peoples, including variables such as region, gender, age, and season, is important in the delivery of evidence-based public policy.

## LEARNING FROM TRADITIONAL KNOWLEDGE AND WESTERN KNOWLEDGE SYSTEMS

Traditional knowledge represents a way of life, but traditional knowledge of the local environment, combined with the related skill sets for harvesting, travelling on the land and water, and food processing, can also be understood as a set of cultural practices necessary for food security and food sovereignty. The extent to which this knowledge is transmitted to future generations plays an important role in determining the health and wellness of individuals and communities. Traditional knowledge has always guided the lives of northern Aboriginal peoples, and a growing number of Canadian and international community-based programs and participatory research projects are making valuable contributions to food security research. Several Indigenous knowledge centres, networks, programs, community-based research hubs, centres for northern research, and food security organizations actively promote the

integration of traditional knowledge and Western science into northern food security research. These channels, such as Food Secure Canada's Northern and Remote Food Network, the Arctic Institute of Community Based Research (YT), the Qaujigiartiit Health Research Centre (NU), and the Nain Research Centre (NL) are important resources for current and future research and policy development related to food security and northern Aboriginal peoples.

## **PROMISING PRACTICES TO BUILD FOOD SECURITY, FOOD SOVEREIGNTY, HEALTH, AND WELLNESS**

### **Short- and Long-Term Approaches**

Because food insecurity is experienced differently at individual, household, community, and regional levels, it follows that strategies to mitigate food insecurity must be similarly diverse. A continuum of programs and policies must be used to address food insecurity, ranging from short-term mitigation (temporary solutions such as food banks and children's feeding programs) to capacity building and skills development programs (e.g., community gardens and cooperative buying clubs), to long-term organizational change and policy responses that focus on root causes (e.g., food policy networks and food system interventions).

### **Multi-Level Approaches and Inter-Sectoral Collaboration**

Declining harvests of plant and animal wildlife species, increased imports and consumption of store-bought food, and the discovery of environmental contaminants in traditional and country food have inspired Aboriginal people, communities, researchers, and governments to action. Grassroots efforts to improve Aboriginal peoples' health and wellness include community-led food assessments such as *NiKigijavut Hopedalimi* in Hopedale, Labrador; resistance to poverty and high food prices through Iqaluit-based Feeding My Family; and the national movement Idle No More, which aims to peacefully honour Indigenous sovereignty and rights and to protect the land and water. At provincial and territorial levels, Manitoba's *Northern Healthy Foods Initiative* aims to build food security and food sovereignty in northern and remote Manitoba communities, and in Nunavut local, territorial, and corporate stakeholders from across the North have collaborated to draft the Nunavut Food Security Strategy. Health Canada's Aboriginal Diabetes Initiative, the Canada Prenatal Nutrition Program, and Nutrition North Canada represent steps taken at the national level. The Panel concluded that a continuum of multi-level approaches based on inter-sectoral collaboration among communities, local agencies, government, and institutions is important for successful and sustainable initiatives.

## Multidisciplinary Approaches

While each of these initiatives is important, no single response can solve the problem of food insecurity. Nutrition education programs are valuable, but they cannot compensate for poor access to food, for example. In addition to multi-level approaches, multidisciplinary responses are critical to building food security and food sovereignty. The Panel grouped a selection of strategies into seven categories:

- programs to increase the affordability and availability of healthy food (e.g., Growing Forward, MB);
- health and education (e.g., Nunavut Food Guide Recipe Program);
- community wellness and intergenerational knowledge sharing (e.g., *Ilisaqsivik*, NU);
- harvester support and sustainable wildlife management (e.g., *Eeyou Astchee*<sup>1</sup>, QC);
- poverty reduction and community economic development (e.g., Bayline Northern Food Security Partnership, MB);
- innovation in infrastructure and local food production (e.g., Northern Farm Training Institute, NT); and,
- youth engagement (e.g., Going Off, Growing Strong, NL).

## Moving Forward

The capacity exists to identify, verify, and evaluate interventions. Relevant and effective responses to improve food security and food sovereignty must be holistic, enabled by local traditional knowledge, and paired with economic development strategies to tackle the closely connected issue of poverty. Long-term alleviation of food insecurity requires clarification of locally identified needs and drawing on the assets of distinct northern communities. Stable funding is also a key factor. All of these solutions require Northerners to establish program ownership. However, it remains important to look beyond individual food decisions and consider how society, including the unique historical context of Aboriginal people in Canada, configures opportunities such that some have more choices than others.

## FINAL REFLECTIONS

A strong, multidisciplinary body of knowledge exists on food security and northern Aboriginal health. Scholarship, including coordinated and community-based research programs, has answered many important questions. Some of the major contributions of this report include the synthesis of these findings, consideration of interventions to improve food security in northern Canada, and development of a tool for community members and policy-makers in the form of a conceptual framework. While the report does not provide policy

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1 Also spelled *Eeyou Istchee*

prescriptions, the Panel hopes the findings will contribute to evidence-based policies and programs, increased cooperation and coordination of northern research agendas among stakeholders, and, ultimately, improvements in the health and well-being of northern Aboriginal peoples.

Canada has the capacity to address the critical issue of food insecurity as experienced disproportionately by northern Aboriginal peoples. There are clear opportunities towards achievement of food security and food sovereignty by using existing local, regional, national, and international knowledge, experiences, and policies, as well as in expanding the evidence base so that Aboriginal communities, researchers, policy-makers, and Northerners can create sustainable and dignified solutions to the long-standing complex challenge of food insecurity among Aboriginal peoples in the North. Public health is a collective responsibility. Canada and Canadians hold many of the essential tools required to tackle this serious and substantial public health challenge, and to create the conditions for social and economic prosperity.