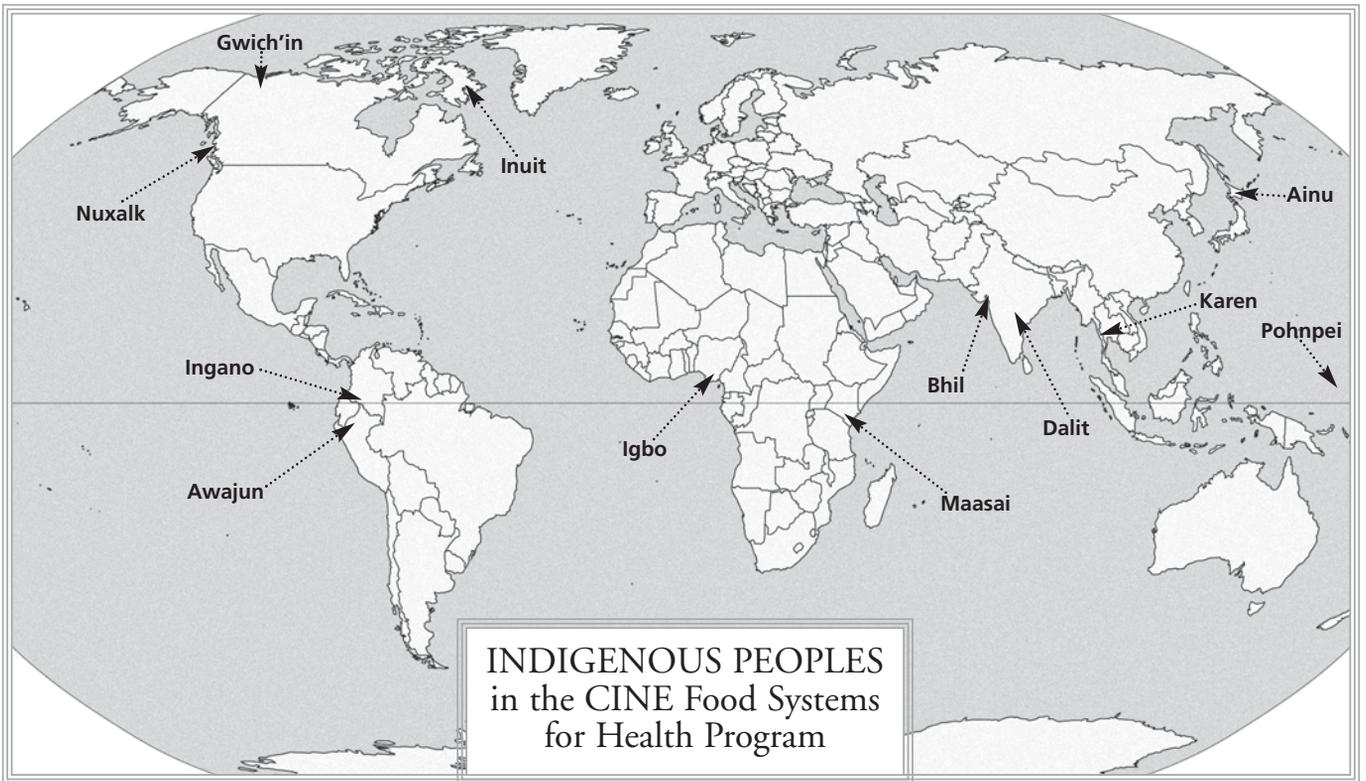




Introduction

Why are  
Indigenous Peoples'  
food systems important  
and why do they need  
documentation?

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This book is about the food that is close to the hearts of Indigenous Peoples in their local cultural environments. The authors and chapter writers describe 12 diverse global examples of how Indigenous Peoples themselves researched their food diversity, cultural understanding of their food, the impacts of the environment on their food and how these resources they know so well are critical for their nutrition and health. We worked together to figure out ways to capture these essential principles and how to present them to readers who may be indigenous or not, and who may be students, researchers, development advocates and/or policy makers in diverse interdisciplinary fields. By documenting this remarkable knowledge we want to encourage greater appreciation for Indigenous Peoples' food systems and enforce the call for their promotion and protection.

These stories show how Indigenous Peoples' food systems contain treasures of knowledge from long-evolved cultures and patterns of living in local ecosystems. The dimensions of nature and culture that define a food system of an indigenous culture contribute to the whole health picture of the individual and the community – not only physical health but also the emotional, mental and spiritual aspects of health, healing and protection from disease. However, these food systems which are intricately related to the complexities of social and economic circumstances are becoming increasingly more affected by the forces of globalization. Within the larger society in which they live, despite the wealth of knowledge rural Indigenous Peoples have of their local environment

and food system, they often face vulnerabilities derived from extreme poverty, discrimination and marginalization. This can mean that access to their resources becomes limited, causing unnecessarily poor health outcomes. It is within this context that the scientific work described in this volume seeks to define and describe the diversity contained in circumstances surrounding 12 rural Indigenous Peoples' food systems that are windows to Indigenous Peoples everywhere. Our long-term goal is to find solutions to difficulties faced in using, developing and sustaining this knowledge to improve the well-being and health of Indigenous Peoples globally.

### Context of research

Who are Indigenous Peoples? The definition of indigeneity varies in different global regions, with no single criterion that can be applied universally, except to note the accepted principle that people have the right to define themselves according to their culture. Within the context of the work described here, we maintain that Indigenous Peoples are those who retain knowledge of the land and food resources rooted in historical continuity within their region of residence. The local food systems that they are currently using are those we define as “traditional food systems”, which invariably include some foods that may be used by many outside of the indigenous culture (e.g. salmon). In essence, we describe as “traditional foods” those foods that Indigenous Peoples have access to locally, without having to purchase them, and within traditional knowledge and the natural environment from farming or wild harvesting. Alternatively, we define “market

foods” as those foods that enter communities often through global industrially sponsored retail outlets, and which must be purchased (e.g. sugar, oil). In some circumstances, Indigenous Peoples may purchase some of their culturally based traditional foods (i.e. wild meat, local rice varieties) from others with land and/or time to harvest them. In other cases, Indigenous Peoples count as their own species that were introduced from other regions (e.g. Karen chilis). Throughout, it is the intent of this volume to document how Indigenous Peoples today think about and use local food resources that are identified within their cultures.

We aspire to strengthen the evidence base of current circumstances surrounding food systems and health by using 12 community groups of Indigenous Peoples located in different global regions: Ainu (Japan), Awajun (Peru), Baffin Inuit (Canada), Bhil (India), Dalit (India), Gwich'in (Canada), Igbo (Nigeria), Ingano (Colombia), Karen (Thailand), Maasai (Kenya), Nuxalk (Canada), and Pohnpei (Federated States of Micronesia). The chapters themselves are presented geographically – from North America to South America, Pacific, Asia and Africa (see Map).

### Indigenous People case studies with traditional food descriptions

In these 12 case studies, the Centre for Indigenous Peoples' Nutrition and Environment (CINE), leaders of the communities of Indigenous Peoples and their academic partners in the same country collaborated for research in two phases: 1) documentation of the cultural food system with a defined protocol (see <http://www.cine.mcgill.ca/documents/manual.pdf>) and 2) implementation of health promotion interventions using culturally sensitive and environmentally relevant elements of the local food system. This volume describes the first phase of the research: documentation of the inherent strengths of the local traditional food system, the influx of industrialized and purchased food, and the circumstances of the nutrition transition in these indigenous communities.

This information sets the stage for the second phase of the research: to demonstrate how these local foods

contribute to food security, nutrition and health. Our long-term objectives are to address scientific issues, public health, and policy, with the goal of influencing local, national and international policies for environmental protection of Indigenous Peoples' land and food resources. In this way, communities can be encouraged to strengthen their use of local food and sustain knowledge of their local food systems for essential contributions to cultural protection, well-being and health.

### International initiatives stimulating this programme

This effort of Indigenous Peoples and their academic partners takes place within the International Decades of the World's Indigenous Peoples, and the recent Declaration of the Rights of Indigenous Peoples approved in the General Assembly of the United Nations. The research has been supported and presented in several fora of the United Nations System. A basic chronology demonstrating the evolution of the Task Force (TF) on Indigenous Peoples' Food Systems and Nutrition of the International Union of Nutritional Sciences (IUNS) and this project is as follows:

2001. Creation of the TF following the IUNS meeting in Vienna, with the objective to secure support from the Food and Agriculture Organization of the United Nations (FAO) and the International Development Research Centre of Canada (IDRC) to document traditional food systems (TFS) of five groups of Asian Indigenous Peoples: Bhil (India), Dalit (India), Karen (Thailand), Miao (China), and the Mogh and Nayakrishi (Bangladesh).
2001. Meeting of Asian case study partners in Salaya, Thailand, to draft the food system documentation methodology.
- 2002–2003. Preparation of a United Nations World Health Organization (WHO) publication on Participatory Health Research with Indigenous Peoples: Planning and Management and Preparing Research Agreements ([http://www.who.int/ethics/indigenous\\_peoples/en/index1.html](http://www.who.int/ethics/indigenous_peoples/en/index1.html)).
- 2004–2006. Funding quest for 12 case studies for Phase 1 and Phase 2 of the research.

2004. Meeting of case study partners at The Rockefeller Foundation's Bellagio Study and Conference Center in Italy. Confirmation of Phase 1 research methods and plans for intervention proposals. Creation of CINE web document (project Book 1) for Indigenous Peoples' food system methods (<http://www.cine.mcgill.ca/documents/manual.pdf>).
2005. Meeting of Awajun and Ingano partners in Lima. Preparation of draft versions of adaptable food-security and physical-activity interview methods.
2005. Convention on Biological Diversity (CBD) initiative with the United Nations System Standing Committee on Nutrition (SCN) established in Brazilia.
2005. Funding established for photo documentation of case-study food systems.
2005. Meeting of case study partners in the Futululu Environmental Centre in St Lucia, South Africa. Preparation of publication on intervention methods and evaluation (Public Health Nutrition 9(8): 1013–19, 2006).
- 2005–2006. Four FAO and IDRC posters prepared and distributed internationally to highlight food diversity and for the International Decades of the World's Indigenous Peoples: Global, Asia, Africa, Pacific Islands.
2006. Case study partners' meeting in Montreal to compile Phase 1 results publications.
2007. Second meeting of case study partners at The Rockefeller Foundation's Bellagio Study and Conference Center. Finishing details on book of chapters of Phase 1 results.<sup>1</sup> Consideration of appropriate definitions of Indigenous Peoples and policy activities for case studies at several levels.
2007. The project is considered in the Standing Committee on Nutrition (SCN) of the United Nations System – the Working Group on Household

Food Security and the Working Group on Nutrition, Ethics and Human Rights-Task Force on Indigenous Peoples and the Right to Food.

2007. The publication of this volume was described at the 7th International Food Data Conference in Sao Paulo, Brazil.
2008. This book (Project book 2) was described at the Second International Conference on Health and Biodiversity (COHAB2) in Galway, Ireland.
- 2008–2009. Phase 2 of case study interventions are discussed at our third meeting at The Rockefeller Bellagio Study and Conference Centre in preparation for a book (Project Book 3) to be presented at the IUNS International Nutrition Congress in Bangkok.

## Overview of findings

The information presented in these chapters provides a detailed understanding of the diversity, complexity and cultural appreciation of these food systems of Indigenous Peoples. An impressive array of food species and varieties is documented, some of which still require scientific identifications and nutrient-composition analysis. Locally available food-species numbers varied considerably depending on the ecosystem. For example, the Maasai of Kenya documented 35 food species in an arid, drought-

**Table 1 Percentage of adult dietary energy as traditional food and number of species/varieties in the food systems**

<i>Indigenous Group</i>	<i>Energy %</i>	<i>No. of species/varieties</i>
Awajun	93	223
Bhil	59	95
Dalit	43	329
Gwich'in	33	50
Igbo	96	220
Ingano	47	160
Inuit	41	79
Karen	85*	387
Maasai	6	35
Nuxalk	30*	67
Pohnpei	27	381

\* Estimated for adults.

<sup>1</sup> At the 2007 meeting of case study partners in Bellagio, Italy, considerable discussion was held on the title for this book. It was agreed to include both nutrition and health in the title, and that a footnote be made to the many dimensions of Indigenous Peoples' food systems that were expressed. These included the concepts of food diversity and/or biodiversity, culture, environment, food security, economy of family food, food self-sufficiency, and self-esteem and cultural morale in using local, cultural food. It is hoped that this introduction captures the diversity of the discussion, and includes the many thoughtful perspectives of our excellent team.

prone zone, while there were 381 local food species/varieties documented for the Pohnpei culture in the Federated States of Micronesia. Other results show 220 species in the Igbo environment in West Africa, 223 for the Amazonian Awajun and 387 for Karen (Table 1). Detailed data on each food system are presented in the chapters.

The extent of use of these impressive food systems also varied (Table 1). For example, the adult Awajun and Igbo were found to consume close to 100 percent of dietary energy from these local food resources. The Maasai, Pohnpei, Ingano, Bhil and Dalit cultures are shown here to have considerable erosion of dietary energy, supplanting traditional species in the form of commercial (or donated) cornmeal or white refined rice. The Canadian Gwich'in and Inuit have less than 45 percent of dietary energy as traditional, local food, with the majority of the balance of energy derived from refined flour, fats and sugar.

Nutrition assessments were made in most cases, using anthropometry and dietary intake, and other biological measures that were accepted within the culture and/or otherwise available. Food composition databases were used as developed within the countries of the academic collaborators, and standards for determination of nutritional adequacy, including views on stunting and other nutrition parameters, were reflective of the home countries.

There are many common themes in the chapters. First, it is important to recognize the need for research methods that are suitable for this diverse set of rural communities of Indigenous Peoples. Academic research partners worked together with community leaders to agree on the goals, objectives, methods and ultimate use of the research findings by creation of meaningful research agreements (see [http://www.mcgill.ca/files/cine/partresearch\\_english.pdf](http://www.mcgill.ca/files/cine/partresearch_english.pdf)). It was recognized that this information from “the people” is to be used for their benefit. In all cases, work was conducted with groups of communities with a total population size that was usually less than 1,000. In several areas it was necessary to overcome skepticism toward the research in these grass-roots communities, so that the necessary in-depth studies within the culture could take place. Assurances had to be given that the research was for

the people directly involved, and not for the benefit of pharmaceutical bioprospecting. Usually, there was a reluctance to include blood samples as part of the research process for both adults and children. Nevertheless, we had important and necessary assurance of the willingness and enthusiasm of communities to undertake this work for their benefit. In fact, the research methods, process, goals and end-products became very popular in communities, and in spreading word of success of the projects. Indigenous leaders would like to expand the work to other communities so they may also consider the benefits of greater understanding and use of their local food.

In the 2007 meeting at The Rockefeller Foundation's Bellagio Study and Conference Centre all case studies recognized the value of using traditional food/medicine resources as a platform to conduct awareness building and education on nutrition and health and to conduct education activities. Several of the case studies (Awajun, Nuxalk, Bhil, Ainu, Karen) have prepared photo books of the traditional food resources to be used as educational resources in local schools and at community meetings.

Commonalities also existed on the intention to increase traditional food availability to communities, and to improve the quality of imported industrialized purchased food. The theme of “connection to the land” prevailed throughout all case studies, as a common struggle to protect indigenous cultures, with attention also to the need for conservation of ecosystems containing these resources. At the same time, information on nutrient density and quality of food imported to communities was highly appreciated. Attention to women as gatekeepers to family food availability was consistent across the case studies, with imperatives to increase women's self-esteem and to find ways to lighten the burden of food preparation methods by including food scientists and engineers in project intervention plans. Moreover, attention to food safety of these food resources was noted.

Understanding the science of these local food resources was recognized to be at the heart of projects in each area, and attempts were made to build the scientific notation and food composition data to

benefit community food education, nutrition education and local abilities toward understanding health benefits of foods, especially for youth in the regions. Efforts at food composition analysis were mixed, with some case studies completing more of this work than others. The logistics of sampling and the expense of laboratory work were key factors that limited additional work.

Case study partners had to make compromises when implementing the suggested methodology to collect data. As noted above community areas, by requirement of budget and logistics, were small and limited in numbers participating in age and gender groups. For example, there were small numbers of school-aged children, but sample sizes were still meaningful in identifying anthropometric issues of stunting or obesity. Another example was the difficulties faced in the Ainu study when it was realized that many in the targeted communities were reluctant to identify themselves as Ainu because of the history of discrimination. Throughout, and despite our best efforts, there were few case studies that could give complete information on all the species and varieties

of foods in their area. While the frustrations of missing data are recognized, it also highlights the imperative to continue this work.

Even in recognition of these constraints, this book provides 12 fascinating and unique chapters of descriptions of Indigenous Peoples' food and health circumstances. The unique styles of writing and presentation were preserved as much as possible, and the photos presented capture the people, food and environments of these unique traditional food systems. Each of the case studies proceeds independently with publications on their findings, and the reader is encouraged to seek these additional resources.

### Policy implications of the research

This project has captured the attention of leaders in many sectors of local, national and international governments and agencies. A forward-looking approach is needed in all sectors to address Indigenous Peoples' food security, and for building attention on the rights of Indigenous Peoples to maintain their cultures, environments and preferred food systems ●