

Nunavut Research Agenda

Research Policy and Needs for Nunavut



Nunavut Research Institute
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**Nunavut
Arctic College**

Preface

In an effort to encourage more effective coordination of research activities in Nunavut, the Nunavut Research Institute has undertaken a review of Nunavut research needs and interests.

The Institute has conducted a comprehensive review of existing documentation on research needs and has undertaken extensive consultations with agencies and organizations across Nunavut. The feedback from these consultations has been invaluable.

It is expected that the *Nunavut Research Agenda* will serve as a guide for researchers and government to help ensure that future studies are beneficial and relevant to communities in Nunavut. In addition, the Research Agenda will be used by the Nunavut Research Institute (NRI) to develop collaborative research projects which address issues and needs of importance to Nunavut.

Lyn Woodhouse
Chair, Nunavut Research Council

About The Nunavut Research Institute

The mission of the Nunavut Research Institute is to provide leadership in developing, facilitating and promoting traditional knowledge, science, research and technology as a resource for the well-being of people in Nunavut.

NRI acts as a research broker on behalf of Nunavut community groups and individuals, provides information on research projects in a wide variety of areas, provides advice on research funding programs, and can assist in the development of project proposals for submission to funding agencies and programs. The Institute has developed positive working relationships with many universities and government agencies that conduct or fund research in Nunavut.

All individuals conducting research in Nunavut are required to obtain a license from the Institute. The licensing process is used to obtain community feedback about specific research projects. The Institute also undertakes and supports research through research centres in Iqaluit and Igloodik.

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Introduction

Since the late 1960's there has been general agreement that Canada needs a northern science and technology policy directed at northerners' needs as well as national and international goals. The principle of local relevance and involvement has been repeated whenever the topics of northern development or northern research have been discussed. Most concern has stemmed from the fact that, until recently, little research was initiated by northern residents. There is new recognition of the need for northern-initiated research, as well as the development of positive research relationships with Nunavut groups or individuals.

In 1972 an attempt to list research goals for northern Canada was made at a seminar sponsored by the Government of Canada. The Minister of Indian and Northern Affairs endorsed existing national research goals and added objectives in environmental protection, cultural recognition, and the evolution of territorial government. Perhaps the single most important conclusion reached at the 1972 seminar was the need to recognize northerners as full partners in research. For the first time, it was highlighted that northerners in general, and the Aboriginal population in particular, must be consulted before scientific work has begun and must participate meaningfully in scientific research.

In 1977, the Science Council of Canada published *Northward Looking: A Strategy and a Science Policy for Northern Development*, advocating a strategy of mixed development using science and technology to support small-scale, community-based economic development.¹ The Department of Indian and Northern Affairs followed soon afterward with its *Guidelines for Scientific Activities in Canada's North* (1978) - a publication which took the position that northern science activities should balance northern and national goals.² In 1986, the Association of Canadian Universities for

Northern Studies (ACUNS) held a major conference on northern research and education in Yellowknife. Many of the papers and presentations were done by northern organizations and individuals involved in research. Different experiences and lessons were revealed, as were plans by the Science Institute of the NWT to develop a northern research agenda recognizing community-based research priorities. The promise of a Northern Research Agenda, however, was never fulfilled by the Science Institute.

"I know it is often said that we are never certain about what scientists do, but in the end it is often research that helps in improving the lives of everyone. No matter what we do, we always recognize that there is a need for scientific research to improve our lives, whether in terms of making ourselves healthy, protecting our wildlife, protecting our environment, protecting our waters, or leaving a legacy for our children. I want to say that the government is interested in taking a more active role in influencing the northern research agenda for a number of reasons. One of these is these is using technical research as a way of improving the economic base of the NWT. It is also important for northern communities to become more involved in influencing and directing research ideas. For many years, northerners have participated in research designed to meet the needs and priorities of others, and it is only fair that now we have an opportunity to see research that meets our needs."

*The Honourable Richard Nerysoo, former
Minister of Education, Culture and
Employment, 1994.*

A report prepared by the Canadian Institute of International Affairs in 1988 concluded that, despite well-meaning attempts in recent years to give science a northern orientation, the vast bulk of the scientific work undertaken in the North continues to be initiated in the South in response to southern needs and priorities.³ Almost 25 years has passed since the 1972 seminar, and after countless conferences, reports, and

meetings Canada still does not possess a science and technology policy which addresses the research, science and technology needs of northern communities.⁴ Many research initiatives which take place in Nunavut continue to be developed on an *ad hoc* basis by academic researchers pursuing their interests and government agencies doing mission-oriented research.

Several organizations have played a role in the evolution of policies and programs which support the development of Nunavut research. These institutions include, but are not limited to, the Department of Indian Affairs and Northern Development, the Northern Heritage Society, the Science Council of Canada, the Canadian Polar Commission, the Circumpolar Institute of Canada, the Arctic Institute of North America, the Inuit Circumpolar Conference, and more recently the International Arctic Science Committee and regional organizations such as the Nunavut Wildlife Management Board, the Inuit Heritage Trust, and the Nunavut Research Institute. There is considerable potential for collaboration between these organizations, and with universities and associations such as the Association of Canadian Universities for Northern Studies.

Research Needs and Interests for Nunavut

The focus of the *Nunavut Research Agenda* is to highlight research needs and issues which have been identified as requiring study or more information. The NRI has consulted with representatives of many agencies in Nunavut, as well as undertaken a comprehensive review of relevant documentation. Similar initiatives, such as the Integrated Research Plan prepared in 1993 by the Royal Commission on Aboriginal Peoples, have shed much light on research issues and needs common to Northerners in general. For organizational purposes, the issues raised in the *Nunavut Research Agenda* are separated into Social Issues and Medical and Health Research; Other Social Sciences Research; Environment and Ecosystems; Education

and Training; Physical Sciences and Engineering; and Technology Development and Transfer. The pervasive themes of traditional knowledge and participatory action research are incorporated into many of the categories.

Participatory Action Research

Participatory Action Research is designed to improve a situation. Case studies of social problems, for instance, may suggest prescriptive solutions. Surveys about particular issues can provide information about the state of an existing problem. Observation methods may also provide insight into social issues which policy makers, often too busy to study an issue, can act on. Participatory action research priorities for Nunavut include social issues, health and medical issues, environmental issues, and even political and economic issues. From a northern community perspective, participatory action projects are often the most successful.

Traditional Knowledge

Traditional knowledge can be defined very broadly to include knowledge on all issues associated with life and the environment. Indeed, most research priorities outlined in this Agenda incorporate traditional knowledge. Most traditional knowledge research is done using oral techniques, such as interviews. There are still questions, however, about how traditional knowledge can be collected, and what to do with the information. Several organizations are currently collaborating on the development of a traditional knowledge research strategy for Nunavut.

1.0 Social Issues, and Medical and Health Research

Social science research is, and will continue to be, an extremely high priority of communities and regions in Nunavut. In particular, there is a need to direct communities to agencies and/or people that

can assist in action-related research on health and social needs, as well as to encourage researchers to seek the direct involvement of northern agency representatives in their work.

1.1 Social Issues

Public documents and representatives of numerous community-based northern organizations indicate that addressing social issues like unemployment, drug addiction, alcoholism, family violence, suicide, nutrition and health are all of great importance in Nunavut. Considerable research has already been conducted on these issues in Nunavut and other Aboriginal communities in Canada. However, there seems to be an ongoing need for Nunavut regions and communities to define the specific types of social and participatory action projects which they would like to develop and participate in. Priority social research issues in Nunavut include:

- case studies of community approaches to social, justice, policing, or health problems;
- application of traditional knowledge to social, political, economic and environmental issues;
- socio-economic and political factors contributing to major social problems in Nunavut;
- participatory action solutions to specific social and justice issues;
- statistical analysis of social indicators such as birth rates, death rates, incomes, crime rates, education levels, migration, lifestyles, and demographics in Nunavut;
- analysis of the “Community Wellness” concept and its implementation;

- impacts of territorial population growth on social services and social problems;
 - impacts of reduced government spending on social services and social problems; and
 - social effects of local environmental quality and economic development activities.
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Front line workers we surveyed identified alcohol and drugs as the major issue facing their communities. This self-destructive behaviour produces physical, social, economic and legal problems for people with addictions, their families and communities... The human and social costs of this problem is enormous. It seems to play a role in most cases handled through our community health centres. It is linked to many of the local offenses and criminal matters before the courts. We heard that there is a clear connection between addiction and domestic abuse, sexual assault, and the spread of sexually transmitted diseases.

Government of the NWT, Special Committee on Health and Social Services, Final Report, 1993

1.2 Medical and Health-Related Research

There are many opportunities for participatory action research in medical and health areas. Priority research needs in this area include:

- community participation in health care and sickness prevention;
- nutritional and socio-cultural value of traditional foods;
- development of a Nunavut database on contaminants and human health;
- cultural differences in health care;
- alternatives to medical evacuations and hospitalizations;

- cross-cultural health and medical communication;
- socio-economic impacts on health;
- new forms of technology for delivery of health services;
- health care demographic factors within Nunavut;
- illness, lifestyle, and health service use statistics;
- dietary studies;
- effectiveness of health care, rehabilitation, and therapeutic services;
- sickness causation trends in Nunavut; and
- the special needs of mental illness patients.

2.0 Other Social Sciences Research

2.1 Politics and Governance

Nunavut politics, government, and policy-making at the community, regional, territorial, national and international levels have recently become areas of much social science research interest. New public institutions, policies, legislation, regulations, and programs are quickly being developed in Nunavut. Political research priorities for Nunavut include:

- background studies, comparative analyses, and government program evaluations;
- evolving relationship between Inuit and the federal government;
- role of Inuit and non-Inuit in Nunavut government;

- politics, institutional development, and implementation of Nunavut;
- evaluation of Nunavut Land Claim implementation;
- political, social and economic impacts of Land Claim implementation on Nunavut;
- public sector financial and policy evaluation;
- effects of public sector down-sizing on Nunavut;
- policy and programming, legislative development, administration, and territorial division processes; and
- policy innovation, reduction of duplication in government services, policy transfer, and lesson-drawing.

2.2 Economics

Research about Nunavut's economy is primarily needed to decrease community reliance on public financing. Research priorities include:

- economics of tourism, industrial, and scientific research opportunities;
- future of the traditional economy;
- research supporting export marketing of Nunavut products and services;
- economic indicators and statistical analysis for Nunavut (e.g. income, employment insurance use, employment);
- economic dependence on government and effects of government down-sizing;
- importance of mineral exploration and mining to Nunavut's economy;

- socio-economic impacts of non-renewable resource development in Nunavut;
- economic impacts of population growth and political development;
- opportunities for export products and technologies;
- northern energy economics, including evaluation of renewable energy potential; and
- Nunavut's labour market (including training requirements).

2.3 *History*

Nunavut currently has many resident historical experts. Priority research issues which have been identified through consultations include:

- collection, documentation and dissemination of oral histories;
- history of individual communities and families;
- historical knowledge and the political evolution of Nunavut;
- making traditional knowledge more accessible to youth;
- Nunavut archaeology; and
- influence of individuals, events, and institutions in Nunavut.

2.4 *Geography*

The research expertise and cooperative assistance of professional geographers has contributed significantly to the development of Nunavut. Geographical research needs include:

- detailed mapping of many areas, including geoscience mapping;

- traditional place naming and mapping;
- development and application of Nunavut geographic information systems; and
- community planning for population growth in Nunavut.

2.5 *Linguistics and Language*

An increasing appreciation of the role of heritage and traditional culture in Nunavut requires research in languages and linguistics. Research needs include:

- interpreter/translator research on a wide variety of terms and concepts;
- comprehension of basic terms and concepts;
- interpretation and translation of oral history documents from Inuktitut to English;
- development of common terminology in environmental, scientific, and technical areas;
- development of a universal writing concept for Inuktitut (Roman Orthography)
- identification of traditional words which have fallen from general use; and
- efforts to put new terms and concepts into general use.

3.0 **Environment and Ecosystems**

There is a need to continue and initiate basic research on Arctic ecosystems and pollution generated within and outside the North. Problems like Arctic haze, ozone depletion, and global warming are still foremost in the

minds of many Nunavut residents. Priority areas of research need include:

- effects of increased ultraviolet radiation in Nunavut;
- continuation of mass balance studies of Arctic glaciers and ice sheets;
- changes in Arctic terrestrial and marine ecosystems;
- disturbance and recovery of terrestrial ecosystems;
- dynamic relationships between human populations and biological resources;
- relationships between local management and national or international regimes affecting use of Arctic resources;
- environmental impacts of industrialization in the Arctic;
- environmental impacts of increasing population growth in Nunavut;
- land use planning processes in Nunavut;
- ecological, physiological, and molecular means of dealing with life in the cold;
- assessment and remediation of contaminated areas; and
- capacity-building to enable Nunavut organizations to undertake monitoring of environmental contaminants present in ecosystems.

4.0 Education and Training

Development of Nunavut has created a great demand for research to facilitate the delivery of education and training. Many respondents to our consultations highlighted research in support of education

and training, including research training to be the area of highest priority for Nunavut. Priority research needs and issues in this area include:

- development of research training programs;
- Inuit cultural and linguistic content in educational programs;
- identification of technical training needs and adaptation to new technologies;
- training needs and employment prospects for Inuit;
- effectiveness of workplace training and models of best-practice;
- computer literacy rates in Nunavut;
- innovative teaching methods in Inuktitut, cross-cultural environments;
- teaching research and problem-solving skills;
- new technologies to facilitate distance education in Nunavut;
- training needs of specific private sector areas;
- relevance of current training programs to employer needs;
- reasons for non-completion of education and training programs;
- methods for assessing student progress in Nunavut; and
- social and emotional needs of students in Nunavut.

In addition to literacy and numeracy (reading, writing and math) skills, people will need a new set of fundamental skills: problem-solving skills,

communication skills, creative skills, the ability to work effectively in project teams, the ability to take initiative and be self-directed, computer skills, and the ability to learn as they go so they can adapt to the requirements of new technology.

People - Our Focus for the Future
Department of Education, Culture and
Employment, Government of the NWT

5.0 Physical Sciences and Engineering

Physical sciences and engineering research in Nunavut is essential for the development, operation and maintenance of infrastructure in Nunavut. Priority research needs and issues in this area include:

- alternative methods for the disposal of solid and liquid wastes (including waste fuels), recycling (including residential wastewater), sewage treatment, and energy distribution;
 - cost-effective, energy efficient engineering of houses and buildings in Nunavut;
 - geophysical and permafrost effects on minerals development, road construction, housing development, waste site locations, etc.;
 - application of cartography, geographic information systems, and remote sensing to improve planning;
 - electrical grounding in permafrost;
 - effective urban planning lessons from other northern jurisdictions; and
 - options to improve energy efficiency of water use in Nunavut and water quality on Inuit-owned lands.
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Research is required to develop more energy efficient methods of operating piped water supply and distribution systems. Presently, the

Rankin Inlet system consumes \$88,000 of fuel oil and \$240,000 of electricity to distribute and supply 153,000,000 litres of water.

*Department of Municipal and Community
Affairs, Government of the NWT*

6.0 Technology Development and Transfer

There is a need to continue building Nunavut skills in technology development, adaptation, and transfer. High priorities for research and development, technology transfer, and innovation lie in following areas:

- development of information technology infrastructure and telecentres for Nunavut;
- integration of Geographic Positioning System (GPS) technology with Geographic Information Systems (GIS);
- commercial fishery technologies;
- appropriate construction materials;
- production of lower cost and/or more energy efficient housing;
- better ventilation systems;
- environmental remediation technologies;
- processing of animal skins;
- food production through the use of small-scale greenhouses and hydroponics;
- northern mining technology (including environmental clean-up techniques);
- cold region construction and transportation technologies;
- renewable energy technologies for use in cold climates;

- satellite-based communication and geoscience mapping technologies;
- snow, wind and dust control;
- northern navigation and information systems; and
- renewable resource management techniques.

Summary

In the past, much of the academic and government-sponsored research done in the North and in the rest of Canada has focused on particular specialties and missions. This is rapidly changing, and is creating opportunities for research collaboration in Nunavut.

Many researchers have become entrepreneurial in order to seek research opportunities related to practical concerns. In recent years, researchers have learned how to translate their own agendas and interests into a language which is appropriate to the research agendas of others - including government, industry, social interest groups, and the public. This is good news for the people of Nunavut, who have long advocated a greater role in and responsibility for research.

There is a growing expectation that northern-initiated research will be initiated in communities and directed by northern peoples. Such research needs can be met through development of institutional partnerships in Nunavut, and through collaboration with southern-based researchers and institutions.

The Nunavut Research Council has instructed staff of the Nunavut Research Institute to create a "living" Research Agenda which can be used as a basis for establishing research partnerships. It is anticipated that this Agenda will change over time as new research issues and needs

are identified, and others are addressed and resolved.

Moreover, the NRI is using the *Nunavut Research Agenda* to establish programs and collaborative research partnerships which address specific research topics suggested by community-based or regional organizations. We are sharing this document widely with those organizations that initiate, fund, conduct or manage research in Nunavut. In addition, the Institute has prepared an action plan which focuses on working together with partner organizations to facilitate implementation of the *Nunavut Research Agenda*.

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Notes

- ¹ Science Council of Canada. 1977. *Northward Looking: A Strategy and a Science Policy for Northern Development*, Report No 26, (Ottawa: Department of Supply and Services).
- ² Department of Indian Affairs and Northern Development. 1978. *Guidelines for Scientific Activities in Canada's North*, (Ottawa: 1978).
- ³ *The North and Canada's International Relations*, Report of a working group of the National Capital Branch of the Canadian Institute of International Affairs, (Ottawa: Canadian Arctic Resources Committee, 1988).
- ⁴ The Canadian Polar Commission have raised this issue several times, and in 1995 prepared a document entitled, "Towards a Policy for Canadian Polar Science and Technology". However, no formal response to this document has been released.