

Plugging Into the Future

Executive Summary

Boosting the Northern Economy Through Small-scale Science and Technology

This paper describes some of the real success stories that science and technology have or might soon provide to northern communities and residents, and lays out a vision of where we might go from here. I hope it will inspire governments at all levels, businesses, both big and small, and individuals of all ages and backgrounds to develop their own policies and projects that will use science and technology to build a better economic and sustainable lifestyle for all citizens of the North. – **Senator Nick Sibbeston**

Introduction

The benefits of harnessing science and technology in support of small-scale economic development are already found across the North. We examine examples of communities, businesses and individuals who are taking innovative approaches to the long standing problem creating economic opportunity in an environment challenged by isolation, high coast and a harsh climate. Fourteen stories in five areas of northern technology make up the bulk of the paper. It concludes with a vision statement and principles and recommendations for further action.

Success stories are found in:

- Improving digital communication links through satellite and optical fibre technology;
- Developing environmental monitoring;
- Creating research centres of excellence in the North;
- Advancing food security through cold climate agriculture;
- Producing community spin-offs from energy production and mining.

Vision for a Sustainable Future

Change is coming to the north – changes in our economy and climate, changes in the way we live our lives, or don't, in the many small communities scattered across the upper third of Canada.

Sustaining viable economic communities is critical to maintaining our social structures, our cultures and, for Canada, our place in the Arctic. The rapid diminishment of sea ice over the pole is opening the north to all sorts of opportunities for resource development at the same time as it threatens traditional economies. On the international scale, negotiations and agreements reached through the Arctic Council and the International Law of the Sea will be an important way to assert Canada's sovereignty but, ultimately, it will be the ability of northern communities to thrive that will establish our strongest claim in Arctic territories.

At the moment, the Northwest Territories is stuck in a time warp, relying on technologies and infrastructures that were out-of-date a decade ago. Many communities rely on diesel for their electricity supply; areas that once could supply most of their own food now depend on poorly working subsidies to stock the shelves of local stores; digital service is expensive, unreliable and operates at speeds that southern communities would find laughable and infuriating.

Making use of technological advancements which are affordable and community appropriate presents an alternative. Whether wealth creating or cost saving, technology that pays for itself over the short to medium term makes economic sense but often needs a boost through government policy, investment or both. It also needs northern entrepreneurs who realize that with a little hard work and ingenuity, every community can increase its self-sufficiency.

Most importantly, we need, through education, training and targeted incentives, to create the ability of local people to adapt technology to their own needs, permitting new uses and improved technology that leads to real wealth creation and benefits for northern communities. A knowledge economy, built on the creativity and entrepreneurship of our greatest renewable resource, our people – unlike one built on diamonds – truly is forever.

Principles

1. Go local
2. Diversify for stability
3. Invest in community-scaled technology
4. Adopt an evolutionary approach
5. Enable don't direct

Recommendations

- As a first step, create an electronic forum for sharing further success stories from the north and developing best practices in the use of small-scale science to promote economic development.
- Develop tools and processes (e.g. websites, annual conference, task force, innovation awards, speaker series – like TED talks) that help build a strong network of northern entrepreneurs to learn from each other and raise the profile of science and technology as key drivers in the northern economy.
- Increase federal and territorial government support for the utilization of small-scale science and technology-based in community economic development and develop policies that move resources away from sunset industry and commerce to sunrise ones.
- In particular, increase government funding support for community food self-sufficiency using a range of technologies.
- Design scientific research facilities not as way stations for southern researchers but as hubs that help create and spread northern-based scientific capacity and technological innovation.
- Encourage closer collaboration between Aurora College and the Aurora Science Institute to maximize opportunities for northern students to learn from and directly work with science and technology professionals.
- Improve public access to the results of northern research studies.
- Support the expansion of a community-based environmental monitoring industry through continued federal funding of the Cumulative Effects Monitoring Program (CIMP).
- Develop mentorship programs, entrepreneurial training, curriculum materials, and distance education programs for northern high school and college students specifically aimed at developing science and technology skills.
- Support science promotion activities for northern youth and their teachers (e.g. science fairs, science camps, science “road shows”, clubs, competitions, student conferences, workshops, field trips, career days, online resources, community outreach).
- Support the ongoing implementation of the GNWT’s Science Agenda, Building a Path for Northern Science, particularly as it relates to sustainable communities.