

A UNIVERSITY
OF THE ARCTIC:

TURNING CONCEPT INTO REALITY

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CONTENTS

Foreword

Executive Summary

1. Overview: The Concept and its Development	1
2. The Context	2
2.1 Social and economic issues	2
2.2 Environmental issues	3
2.3 Industrial and commercial issues	4
2.4 Global and political links with other regions of the world	5
2.5 Education	6
3. A University of the Arctic: Vision and Objectives	7
4. Turning concept into reality: Phase Two, feasibility study	9
4.1 Consultation	9
4.2 Potential structures	10
4.3 Cost-benefit analysis	11
4.4 Organization of the feasibility study	12
5. Conclusions and General Recommendation	13

Acknowledgments

Annexes

A. The original Concept presented at Kautokeino, Norway, 12-13 March 1997

B. Russian language version as presented under the meeting of Senior Arctic Officials in Ottawa, Canada, October 7-9 1997.

Foreword

The concept of a University of the Arctic, as a collaborative effort of the northern countries, reflects the increasing internationalisation of education and the recognition of the integrity of the circumpolar region. It is not a new concept. There are many examples of successful international collaboration that build on the existing strengths of academic and research institutions to meet perceived needs. The unique feature of the proposed University of the Arctic is that it extends internationalisation to a new level of collaboration. It is a logical extension of existing links within higher education and of the cooperative environmental networks that have emerged in recent years.

The link between environment and higher education is not accidental. The environmental issues are of circumpolar dimension and involve students, staff and facilities from many educational establishments and institutions. But the need for more integration in higher education is much wider than the polar environment. As identified by the Circumpolar North Ministers of Education, the social, economic and political imperatives in northern affairs require an international forum for academic development and education. Appropriate systems are required to share experience and understanding; to explore the implications of new and old solutions; to identify the similarities and differences within the circumpolar region; and to strengthen the knowledge base from which the northern regions can relate to other regions of the globe.

It is in this context that the concept emerged-- an idea whose time has come. Turning the concept into reality will require a great deal of political will and the constructive support of many organizations. As a first step, a number of organisations have helped in the production of a Development Plan. Wide consultation has not been initiated at this stage; that is the task of the next phase, a feasibility study.

The Senior Arctic Officials under the Arctic Council considered the Development Plan at their meeting in Ottawa, Canada, 7-9 October 1997. The meeting strongly supported the further development of the concept, as the written response, here quoted in part, shows:

The report entitled "A University of the Arctic: Turning Concept into Reality. Phase 1: a Development Plan," was reviewed and welcomed by the Senior Arctic Officials (SAOs) and Permanent Participant Indigenous Peoples Organizations. Typical of the language used in various comments was "very interesting," "exciting," "intriguing," "very supportive" and "would make a very positive contribution." A number of SAOs were also interested in the possibility of an announcement on the topic at the next ministerial conference under the Arctic Council in the Autumn of 1998.

The SAOs . . . requested Canada, Norway and Sweden to ask the Circumpolar Universities Association to further develop the proposal in association with the Permanent Participant Indigenous Peoples Organizations. This approach was chosen in order to maintain the development of the proposal in the combined academic and indigenous peoples communities.*

It is on the basis of the above that the editors of the report have produced the present finalized document for publication. The proposal to create a University of the Arctic now enters its second phase, a feasibility study, and we await its outcome with interest.

The Editors:

O.W. Heal, Richard Langlais, Outi Snellman

*letter from David P. Stone, Chief, Environmental Services and Research Division, Natural Resources and Environment Directorate, Northern Affairs Program, Department of Indian Affairs and Northern Development, Canada, to Outi Snellman, Secretary General, Circumpolar Universities Association, 18 October 1997.

A UNIVERSITY OF THE ARCTIC: TURNING CONCEPT INTO REALITY

Executive Summary

1. **Needs.** The Alta Declaration on the Arctic Environmental Protection Strategy from 13 June 1997 recommends “that sustainable development, including environmental strategies, scientific advice and traditional knowledge, be an overriding objective for all activities under the Arctic Council.” The vision of sustainable development encompasses five key interdependent needs for the Arctic:

- to enhance opportunities for the dispersed communities, indigenous peoples, and increasingly autonomous northern regions;
- to manage the circumpolar environment to protect resources and human health;
- to strengthen the economic base within the region;
- to increase understanding of global links in environment, finance and policy;
- to expand the knowledge base of the Arctic through education and research.

2. **Vision.** The **University of the Arctic** would be a dispersed higher education institution, focused on the environmental, cultural and economic integrity of Arctic regions. The University, through circumpolar cooperation, would address the fundamental understanding of sustainable development.

3. **Proposal.** The institution would:

- be geographically dispersed;
- combine centers and facilities of international standing from existing national higher education institutions;
- provide disciplinary and interdisciplinary courses that are fully circumpolar in content, staffing and student participation;
- capitalize on modern computer developments for distance learning, multilanguage communication, planning and management;
- enhance opportunities for regional and national dispersed community and adult education.

4. **Action.** The **Development Plan** has identified a very strong case for a circumpolar initiative in higher education to meet the particular needs of the Arctic. It **recommends** that a detailed feasibility study be undertaken in 1998, involving wide consultation with academic, environmental, political, cultural and industrial interests. The **feasibility study** would address the main questions:

- How can a University of the Arctic address issues of sustainable development?
- Who will benefit from a University of the Arctic?
- Which economic activities will the University of the Arctic benefit?
- What are the costs and benefits of increased international collaboration and sharing of expertise and facilities?
- In which research fields could a University of the Arctic contribute most?
- Which structure best fits the identified strategy and mission?

A UNIVERSITY OF THE ARCTIC: TURNING CONCEPT INTO REALITY

1. Overview: the concept and its development

Cooperation amongst the arctic countries has increased considerably during the last decade as international dimensions of economic, social and environmental issues have developed. Education, training and research have shown parallel internationalization. With many common features shared by the circumpolar countries, bilateral and regional connections have expanded. It is now logical to consider the establishment of a fully circumpolar University of the Arctic. The strength of the case lies in the benefits from exchange of understanding of the many facets of sustainable development, combined with educational needs of arctic residents and indigenous peoples, and with the opportunities for cost sharing in expensive facilities.

With these considerations in mind, a **concept of a University of the Arctic** was presented by Canada and Sweden with input from the UK, to the Senior Arctic Officials under the Arctic Council in Kautokeino, Norway, 12-13 March 1997. The concept envisaged a geographically dispersed institution combining the strengths of existing establishments bringing students and staff together.

Canada and Sweden undertook to follow a step-by-step approach by reviewing the feasibility of the concept, consulting with countries and relevant organizations, and proposing options (including a work plan) for collaboration between universities and other institutions of Arctic Council Countries and Germany, The Netherlands and the United Kingdom.

To undertake the initial planning, a small Task Force was established combining representation from major circumpolar regions and organizations (Circumpolar Universities Association, Northern Forum Academy, Sami Council). Recognizing the scale of the planning process, the importance of extensive, structured consultation, and the need for regular assessment by the Arctic Council and other key organizations, a phased approach was adopted.

The present report represents **Phase 1, a Development Plan**, designed to define the scope, focus and consultation to be undertaken in a full-scale analysis of the feasibility of a University of the Arctic. **Phase 2** would comprise a **feasibility study**, to be undertaken in 1998. It would aim to define the main options for the structure of a university, and provide a detailed analysis, including wide consultation, of the opportunities, costs and benefits of the options.

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2. Context

What are the needs which justify a University of the Arctic?

The Arctic can be defined in many ways. Here, for practical reasons, a broad view is adopted, approximating the main administrative provinces, states etc. of the northern parts of the Arctic countries. Through this definition, the development of higher education needs and opportunities can be readily related to the national context in terms of data and administrative responsibilities whilst retaining a comparable circumpolar perspective.

The basis of need lies in the central and overarching vision to establish sustainable development in the Arctic, as advanced in the Alta Agreement of the Arctic countries. The vision of sustainable development encompasses five distinct, but interrelated aspects of change:

- social and economic development;
- the state and change of the environment;
- industrial and commercial development;
- increasing needs in education, training and research;
- the Arctic in a global context.

2.1 Social and economic issues

To what extent are demographic, economic and political changes in Arctic regions resulting in changing needs for higher education?

The Arctic is characterized by a combination of highly dispersed and isolated rural communities engaged in a broad mix of economic activities, but where subsistence lifestyles remain important, and larger urban communities with well developed infrastructure, services and economies. Locally available resources are, however, often insufficient for satisfying the diversity of educational needs in both rural and urban situations. Poor transportation, undeveloped infrastructure and limited education facilities are typical. These features, plus the nature of much of the employment, also result in particular gender inequalities within rural and urban communities. The rapid pace of modernization, while welcome, often creates disruption of traditional ways of living and threatens cultural integrity.

A distinctive trend in the Arctic is the increase in political autonomy arrangements. The recognition of indigenous peoples' rights meshes with calls for locally-derived solutions in achieving sustainability. At the same time, growing awareness of the Arctic and global context shows the importance of shared knowledge. The need for new locally-staffed corps of public servants to satisfy autonomous arrangements is a great challenge for education. The general level of education, although increasing, tends to be below national averages. Secondary educational availability is improving but the opportunity for higher education

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within the Arctic region is very limited. Where higher education has been developed, the impact on society has been significant, not only in improved qualifications, but in enhancing employment opportunities for the region.

2.2 Environmental issues

The different Arctic countries and regions have similar environments and environmental issues. *What are the main issues of circumpolar importance, even though they may be of local origin or solution? What relevance to the Arctic are the international conventions on sustainable development, pollution, climate change and biodiversity?*

Sustainable development: the International Convention on Sustainable Development signed by the Arctic countries, requires a new approach to long term integration of social, economic and environmental dimensions of resource utilization. The implications are usually circumpolar and often global in relation to supply, demand and environmental consequences. The balance of growth of industry, tourism and renewable resource use in relation to population growth and human expectation are central issues of national and international policy.

Pollution: although many sources of pollution are of local origin, transportation by air, sea and ice causes long distance redistribution. Atmospheric and ocean circulation pathways bring contaminants from lower latitudes. Particular concerns relate to biomagnification during transfer through food webs to human populations, especially indigenous peoples' consumption of traditional foods.

Climate change: historically, the Arctic has experienced significant climatic variation. In recent decades there have been marked regional variations in trends. Change is likely to continue, not necessarily with the same distribution, but more significant than in lower latitudes. In addition, enhanced atmospheric carbon dioxide concentrations and UV-B radiation can affect natural resources and humans. Potential impacts on marine and terrestrial resources and on engineering and construction could have important economic, social and policy implications, with feedbacks to lower latitudes (e.g. rising sea levels). The issue of climate change is critical to northern regions, yet there are many uncertainties in both the causes and consequences of the various dimensions of climate change.

Biodiversity conservation: the Biodiversity Convention is a major piece of global legislation. Species diversity is low in the terrestrial Arctic but high in the seas. The global drive for conservation of biodiversity relates largely to land use impacts in temperate and tropical regions. In contrast, the Arctic flora and fauna may be more vulnerable to increasing pollution, industrial exploitation and climate change. Nevertheless, conservation is an increasing imperative and many Arctic species are also subject to pressures during periods spent in lower latitudes.

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The issues of pollution, climate change and biodiversity are of major immediate and long term concern in the Arctic. The causes and consequences are synergistic. They are integral components of the wider concept of sustainable development and are subject to important international policies. Arctic Environmental Protection Strategy (AEPS) has initiated the concerted international effort required to focus expertise on the integrated understanding and management of the Arctic.

2.3 Industrial and commercial issues

Industrial and commercial developments are increasingly circumpolar in their influence and organization. To what extent do these influence the needs and opportunities for higher education?

The balance and importance of industry, commerce and the service sector vary considerably between countries and regions. However, there are recurrent features which indicate trends of relevance to the development of links between education and the industrial sectors in northern regions.

The **service sector** is of major importance in all Arctic areas. Tourism, in many areas of the Arctic, is the fastest growing economic activity with sustained growth rates, sometimes greater than 20%. Much of this growth is international, requiring increased education in multi-cultural issues and languages. Increased autonomy of northern regions requires increasing administrative capability combined with other management and communication skills.

Renewable resources, such as fishing, forestry and reindeer herding, are major traditional industries at both subsistence and industrial scales. These are subject to change in technology and to international supply and demand. Their exploitation on a sustainable basis demands an educated workforce at all levels, combined with research to improve cropping efficiencies whilst maintaining long term viability and minimizing environmental disturbance.

Non-renewable resources (minerals, oil and gas) are the basis of dominant Arctic industries. Extreme and sensitive environments create particular challenges for them. Pressures for exploitation are increasing, requiring increased professionalism and awareness of opportunities and limitations provided by the particular Arctic conditions. As exploitation increases, so does the demand for technical, administrative and managerial expertise. Such expertise is usually imported but enhanced education within the region could generate the necessary skills and contribute to the social and economic sustainability of the region.

Information technology has been identified as a potential successful industry for the Arctic, because it is not impacted by high transportation costs. While it has become an important

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industry in for example Finland, growth elsewhere has been hampered by lack of an appropriately educated local workforce and the need to use non-economical transient workers.

Indications from a cursory review are:

- industrial and commercial activities have many common features between countries;
- activity in both production and service sectors is increasing in most Arctic countries. Demands in different countries are often similar and have important international links;
- exploitation of resources in the Arctic is of direct benefit to lower latitudes, particularly hydrocarbons, minerals, fisheries and forestry, and tourism;
- exploitation of natural resources presents common challenges throughout the region resulting from the extreme climate and problems of long distance transport.

Examples of significant employment sectors and trends:

- the **fishing industry** directly employs 100 000 people in N-W Russia, 15 000 in Norway, 10 000 (12% of work force) in Iceland;
- **forestry** employs similar numbers of people to fishing, but both supply and demand are fluid e.g. boreal forests in Archangelsk, Murmansk and Karelia generated 35m cubic meters of timber in 1985 (25% of Russian harvest), declining to 8m cubic metres in the 1990s;
- **reindeer herding**, a key industry for Sami people, is changing e.g. in Norway reindeer populations rose from 90 000 in the mid-1970s to 210 000 at the end of the 1980s, exceeding the vegetation carrying capacity in some areas;
- **tourism** in Iceland increased annually by about 20% between 1980 and 1995.

2.4 Global and political links with other regions of the world

What educational challenges emerge from the increasing globalization of environmental, financial, and political linkages between the Arctic and other regions of the world?

Many of the challenges of sustainable development and environmental protection that Arctic regions are facing today are global. The Arctic is increasingly coupled with the rest of the world through environmental, political, and financial ties. Political and managerial decisions that take place within the Arctic have implications in the South. Conversely, southern decisions making impinges upon Arctic environments and cultures. Not surprisingly, the International Convention on Sustainable Development, signed by all Arctic countries, requires a global approach to understanding the spatial, temporal, cultural, and economic dimensions of resource utilization. The recent report of the Arctic Monitoring and Assessment Program highlights the transboundary nature of Arctic pollution, not just amongst circumpolar countries, but often with sources in the temperate regions of the globe.

The tools with which the challenges can be tackled are also global. At the political level, the establishment of the Arctic Council in the fall of 1996 reflects a growing realization among the Arctic countries that they can meet the challenges of sustainable development

and environmental protection only through international collaboration both among the Arctic countries and between them and the South. The creation of the Northern Forum, which is a circumpolar association of regional governments and enterprises, shows that global policy and politics is no longer an issue of nation states alone. Finally, the commitment of the global financial community is a key factor in securing the success of the project on sustainable development and environmental protection. Corporate decision makers in investment, finance, banking, and insurance, who by and large are based outside of the region, need to be convinced of the sustainable development underpinnings of long-term economic activity in the Arctic.

2.5 Education

To what extent are the Arctic's educational and training needs being met? Are there significant gaps in the provision of and access to higher education?

Education in the Arctic faces dramatic change. In Russia higher education, particularly in the small institutions of the far north, is faced with a major crisis in funding. At the same time there is a global trend to reduce the money spent on higher education. The European Union is creating new opportunities and new challenges in higher education in Scandinavia and Russia. In Canada, the emergence of Nunavut and of new First Nations governments has resulted in the need to train a new cadre of northern administrators and decision-makers. Questions of access--those raised both by geography and levels of academic preparation--still need to be convincingly addressed. And, while there is a strong trend towards internationalization in higher education, disparities in levels of academic development continue to be a major obstacle to this in the Arctic.

At the same time that there is a growing consensus amongst Arctic peoples and governments that concerted action is required to protect the Arctic environment and ensure sustainable development, relatively little has been done to actually train northerners for this important stewardship role. Clearly, action on the articles of the Alta Declaration on the Arctic Environmental Protection Strategy, requires new educational solutions.

The need to improve educational services through coordinated international action is reflected at all levels. Thus the Circumpolar North Ministers of Education have initiated three actions to improve educational services:

- research to identify successful educational projects in schools;
- establishment of an international network of elementary and secondary schools linked to school improvement schemes;
- establishment of a consortium of small northern colleges and universities to consider strategies for improving teacher training and post-secondary educational delivery services.

Current international initiatives to bring together leading specialists and advanced-level students in areas of critical importance to the Arctic--such as university courses on Svalbard (UNIS) and the International Arctic Research Center (University of Alaska Fairbanks)--need to be strengthened. New economies of scale need to be found. The special input of low-latitude institutions with their high levels of expertise and specialization needs to be integrated into northern development. New research and training programs that allow for an interdisciplinary, problem-oriented approach are also required.

Existing networks for higher education cooperation and international exchange programs (the Circumpolar Universities Association and the Northern Forum Academy, the North Consortium's student mobility project, the Circumpolar Social Sciences PhD Network and the Barentsplus Program) need to be sustained and expanded so that there are opportunities for true circumpolar participation. Information technologies that are appropriate to the peoples and landscape of the Arctic need to be selected; the potential is not only for local and regional development but also to provide a basis for international distance learning, communication and cooperation.

Clearly, a higher education that is cost effective and sustainable is required.

3. A University of the Arctic: a vision

Therefore, to meet the global challenges of sustainable development in the Arctic effectively, comprehensively, and on a long-term basis, a concerted international effort is required that integrates existing circumpolar education and training on a global scale. The challenge of globalization is to increase understanding of the global scale of the environmental, financial, and political issues that Arctic regions are currently facing, and to develop genuinely international educational responses to the challenges.

The concept of a University of the Arctic envisions a higher education institution committed to the environmental, cultural and economic integrity of Arctic regions through scholarly excellence and international cooperation in education and research.

A University of the Arctic can be designed to overcome the limitations of project-specific agreements between universities. It constitutes a formal, flexible and long term forum within which to focus the diverse interests and capabilities of existing institutions. The University is thus an essential structural requirement to support realization of the vision of sustainable development in the Arctic.

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A University of the Arctic has relevance to the context of the major circumpolar and global issues identified above. It can provide opportunities for economies of scale in shared provision of high cost sophisticated facilities for post graduate training and research, whilst reaching out to the most remote communities. Some universities have already developed community networks to address problems of community structure, cultural issues and the needs of indigenous groups, and these networks could be further linked in a University of the Arctic. The enthusiasm found for such methods in many Arctic countries suits the networking and regional cooperation paradigm of development advocated by many researchers.

However, there are current limits to collaboration, because maintaining the resource base of a university is often tied to results that an individual university has achieved, not to its collaborative efforts with other universities. Furthermore, agreements over collaboration often involve too few universities and are too specific in their agendas to meet the broad mission of sustainable development that is envisaged for the University of the Arctic.

Arctic populations are dynamic, with considerable immigration and emigration. Population growth obviously increases the demand for higher education, but so do declining populations; higher education is expected to reduce emigration. There is evidence that higher education's net effect is positive, with universities in newly-developing regions inducing immigration that would not have otherwise occurred. The universities themselves are important employers in the Arctic and can have a significant impact on the local and regional economy.

Environmental, industrial and commercial issues are genuinely international rather than mainly local or regional. Their study requires specialized expertise and facilities. Circumpolar collaboration in the provision of courses and the sharing of specialized expertise and facilities could result both in cost savings and in widening and deepening the subject coverage. The need to understand the circumpolar nature of many of the issues drives this initiative.

Objectives

Based on the analysis of the issues, needs and opportunities, the objectives can be defined. An initial view is that the University should be established:

- to increase the education of Arctic residents in the understanding of the characteristics and issues which are common to the circumpolar region;
- to encourage improved understanding of the circumpolar issues and opportunities by peoples from lower latitudes;
- to increase the understanding of the integrity of the Arctic, its peoples, environments and economic opportunities, through improved research and training;

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- to improve understanding of the interdependence of circumpolar regions and those of lower latitudes;
- to increase the cost-effective use of facilities and resources committed to education and training, through international collaboration.

Implementation

To deliver these objectives a University of the Arctic would:

- be geographically dispersed;
- combine the centers and facilities of international standing from existing national higher education Institutions;
- provide disciplinary and interdisciplinary courses that are fully circumpolar in content, staffing and student participation;
- capitalize on modern computer developments for distance learning, multi-language communication, planning and management;
- enhance opportunities for regional and national dispersed community and adult education.

4. Turning concept into reality: Phase Two, a feasibility study

4.1 Consultation through the feasibility study

Extensive consultation is necessary to determine the level of support for the establishment of a University of the Arctic and to obtain the views of organizations and individuals on its focus, structure and function. The various organizations have distinct interests and the consultation exercise should target these. Various international and regional associations and networks could provide the focus and potentially assist the consultation process. The main categories of organizations are:

- national governments and regional administrations of the Arctic countries;
- governments of non-Arctic countries with specific interests in the north;
- intergovernmental unions and councils;
- universities, colleges and international associations concerned with higher education in the north;
- women's groups;
- indigenous peoples and minority groups;
- industry and commercial organizations with major national and international interests;
- international education and research organizations and networks.

4.2 Models of university organization and structure

What is the most appropriate structure and organization of a University of the Arctic to meet the identified needs?

Many structures and organizations for a University of the Arctic can be envisaged, ranging from a single site, international establishment covering all major subjects, through to a 'virtual' University dependent entirely on distance learning approaches. At this stage, two main options were considered most appropriate for the identified goals. However, a flexible approach is necessary to meet the requirements of different subjects and a combination of features must be considered as an option.

1. A dispersed university: a governing body and small administration would be responsible for selection and quality assurance for courses to be run at contributing institutions. Courses, internationally staffed and open to students of all nationalities, would be recognized by both the University of the Arctic and component institutions. The University would be built from national institutions which have special capabilities in Arctic education and research.

2. A university support system: this model envisions multinational agreements between institutions to organize and run courses and staff/student exchange. Funding would be targeted at initiatives which enhanced circumpolar experience and international use of facilities. Academic awards would be the responsibility of institutions receiving funds.

Distance learning techniques can be employed under either of these models in situations where the nature of the subject, the characteristics of the learners, and the availability of the technology make them effective.

Examples of existing international collaborations in higher education:

- **University Courses on Svalbard (UNIS)** is a private foundation established by the Norwegian government and owned by Norway's four universities. It provides residential experience of the High Arctic for students from any country, at undergraduate, Masters and PhD levels. Courses in Arctic Biology, Geology, Geophysics and Technology are given by national and foreign staff. Degrees are awarded by the home students' home institutions. UNIS is closely linked with the international research base at Ny Alesund.

- **NOVA University** contains many features of the dispersed university model, with 10-12 specialized international postgraduate courses in agriculture jointly organized and staffed by the seven Nordic component universities. Degrees are awarded by the contributing institution. A key vision is the 'division of responsibility on subjects not broad enough for each country to develop or to maintain at its own expense.'

Examples of university support systems include most of the systems of the Nordic Council of Ministers and the European Union. Existing bilateral agreements and inter-university cooperation networks between Northern universities are additional examples.

4.3 Costs and Benefits of international cooperation in education and research

To what extent can international collaboration create economies of scale in addressing the needs of dispersed small populations? How should one measure the cost-effectiveness of structural alternatives? What are the probable economic impacts of these alternatives?

Cost-effectiveness of structural alternatives

The cost of alternative structures for a University of the Arctic may be measured using the following metrics:

- total cost per student with detailed breakout by field;
- analysis of marginal cost structure for different levels of use with detailed breakout as above;
- incremental investment requirements for alternative structures at different enrollment levels.

Probable economic impacts of alternatives

In addition to direct costs, alternative structures for a University of the Arctic will have indirect macro-economic impacts. These will include:

- the direct economic multiplier effects of incremental investment. This would include multiplier effects from capital investment and more sustained multiplier effects from continued operating costs reinvested in local economies. It should be noted that the multiplier effect will vary with location due to differing rates of local vs. external spending;
- multiplier effects resulting from increased investment by other funding sources (e.g. the United States National Science Foundation) due to improved facilities.

In addition, there may be indirect multiplier effects arising from population changes. These would include:

- impacts from the presence of additional students in local communities;
- local economic development made possible by increases in education. This would include the impact of changes in spending resulting from replacement of transient employees from “outside” with local residents;
- impacts from out-migration resulting from lack of local opportunities for a better educated workforce.

It should be noted that the multiplier effects are non-linear and are strongly dependent on local economic structures and behaviors. They will differ substantially by location.

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Cost-benefit weighting

The costs of alternative structures are fairly easy to measure and would be directly reflected in educational spending. The benefits would be diffused throughout the entire regional economy. Decisions on relative weights to assign costs vs. benefits in selecting a structure are political and not subject to purely economic rationalization. Also, many of the benefits will have non-quantifiable aspects.

4.4 Proposed organization of a feasibility study

The present Development Plan has identified the scope for a full feasibility study that could be undertaken in 1998. The objectives of the feasibility study will be:

- to provide specific recommendations to the Arctic Council, based on a detailed analysis of the needs and options, and on widespread consultation, as outlined in the Development Plan;
- to present the findings to the Arctic Council for its meeting in Autumn 1998.

It is recommended that:

- a Steering Committee be responsible for overseeing the feasibility study and will provide wide representation of major interested parties;
- a small working group, with individuals covering broad subject areas (rather than representing particular interest groups), will be responsible for producing the study;
- the working group will be supported by a secretariat and an independent international business consultancy.

The feasibility study should:

- include extensive consultation with major stakeholders;
- assess the need and levels of support for, and benefits of a University of the Arctic;
- assess possible structures of governance and administration appropriate to the vision;
- identify and outline priorities for programs of study and research;
- define the main options for delivery, including appropriate information technologies;
- estimate initial and ongoing costs of various structural options;
- recommend a course of action.

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5. Conclusions and recommendations

The Task Force has examined the original **concept** and undertaken limited consultation. On the evidence outlined in the **Development Plan** it is concluded that there is a very strong case for the establishment of a circumpolar University of the Arctic. Such an initiative would provide an effective, multinational and multidisciplinary mechanism to increase the expertise and understanding necessary to implement the vision of sustainable development for the Arctic.

Therefore, it is recommended that the Arctic Council, in collaboration with other appropriate authorities, initiate an in-depth feasibility study to be undertaken during 1998.

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Annexes

A. The original concept presented at Kautokeino, Norway, 12-13 March 1997.

The general concept is for a network of universities of member states to contribute their particular expertise and facilities to form an international, dispersed, collegiate faculty of the university. Key features would be :

- the pooling of resources;
- the opportunity for students and staff to move between constituent universities;
- organisation of core modules to maximise interaction between staff and students from all countries; and
- a flexible system adaptable to different subject needs and levels of education.

A series of courses, including research training, would be designed to provide an integrated understanding of the Arctic as a whole. Each course would contain a core module, held at a single host faculty/university, and attended by all students registered for that course. Students would then attend courses, in their own or other countries, offered by individual member faculties/universities. The courses may be entirely taught or may contain a strong dissertation/research component that would provide the opportunity to train at top-class specialist institutions or facilities.

Four course subjects that have particular relevance to the issues and challenges in the Arctic and which might be considered for initial review are: Environmental science, sociology, resource management and international administration. Within each subject, the collaborating faculties/universities would contribute individual modules in which they are particularly qualified through international leadership in the subject or having specialist facilities of the highest international standards (for example, component modules on, perhaps, marine biology, environmental pollution, or vertebrate ecology, would be provided by different faculties/universities as options within environmental science).

Staff from member faculties/universities with strong relevant expertise would be selected to organise and host the core module for a particular element(s) provided by their home university.

One faculty/university with strong relevant expertise would be selected to organise and host the core module for a particular course. This would be for a period of, perhaps 3-5 years. Different faculties/universities would provide core modules for different courses or subjects, thus distributing the effort and opportunity amongst the member faculties/universities.

On completion of the course, students would be awarded a degree at the relevant level, either by their home university with due acknowledgement of the international component, or by an internationally agreed awarding body.

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The availability of modern, interactive electronic systems now allows greatly enhanced communication within dispersed communities. Such facilities would provide means of presenting short specialist courses, seminars and workshops etc., international student-supervisor interaction, course planning and administration and general information exchange. In practise, whole programs in certain subjects could be organised by this means. An additional benefit could be in making key course elements available in different languages. However, person-person interaction is central to academia, is a key part of international exchange and is essential where practical and real-world experience is central to the subject. Thus, electronic communication systems can provide an efficient and cost-effective adjunct to the main concept.

Costs and benefits

Most of the elements of the University of the Arctic already exist in terms of facilities, staff and students. They are currently dispersed amongst the various national universities, each of which has to sustain the high costs incurred in maintaining a reasonable coverage of subjects for a relatively small number of students.

Students would benefit particularly from the international perspective, from intensive contact with students and staff from other countries, from first-hand contact with the wider arctic region and from access to experts and facilities of international standing.

Staff would benefit from interaction with international colleagues of their own and different disciplines and from contact with students from a wide range of backgrounds. There is potential added value in development of collaboration in research.

Among the benefits to be gained by collaborating universities would be:

- the ability to increase access to their own major resources;
- to strengthen their portfolios by offering access to major experience and facilities at other universities in subjects in which their own capacity is limited;
- to develop their own specialisations without loss of breadth; and
- to increase the international visibility of their universities, providing attractive career opportunities for existing and new staff.

The Member States would benefit from:

- a cost-effective means of enhancing the training and education of younger generations;
- expanding the career opportunities for staff;
- increasing access to an international fund of knowledge about the arctic, it's human and natural resources, and it's capacity for sustainable development.

B. Russian language version as presented under the meeting of Senior Arctic Officials in Ottawa, Canada, 7-9 October 1997. Translated by Translation Bureau, Public Works and Government Services, Canada.