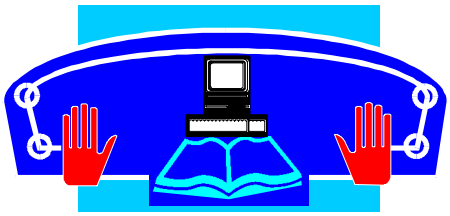

ARCTIC CHALLENGES - REPORT FROM THE NORDIC'S COUNCIL'S PARLIAMENTARY CONFERENCE IN REYKJAVIK

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Arctic Challenges

Report from the Nordic Council's Parliamentary Conference in Reykjavik 16-17 August 1993

NORD 1993:31

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THE NORDIC COUNCIL'S international conference in Reykjavik on 16-17 August 1993 involved a breakthrough for parliamentary co-operation regarding the Arctic. The conference adopted a far-reaching final declaration and resolved to set up a Standing Committee for Arctic Issues.

This report summarises the discussion that took place during the conference. It also includes, as annexes, four important background documents concerning such topics as the indigenous peoples' situation, economic development, environmental issues and security problems in the Arctic region.

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Arctic Challenges

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Reporter: *Tony Samstag*

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The Nordic Council
was set up in 1952 to promote co-operation among the Parliaments and Governments of Denmark, Iceland, Norway and Sweden. Finland joined in 1955. Delegations from the Faeroes, Greenland and the Åland Islands form part of the Danish and Finnish delegations. The Council consists of 87 elected members (members of parliament). The Nordic Council takes initiatives, acts in a consultative capacity, and monitors and gives impetus to Nordic co-operation. The organs of the Nordic Council are the Plenary Assembly, the Presidium and the standing committees.

Nordic Council of Ministers
was founded in 1971 as an organization for co-operation between the Nordic governments. The Council of Ministers puts forward motions at the sessions of the Nordic Council, carries out the recommendations of the Council, reports to the Nordic Council on the results of co-operation and has the ultimate responsibility for activities within the various sectors. Depending on the matters to be discussed, the Council of Ministers meets with different groupings of ministers.

Contents

Foreword

by MP Jan P. Syse, President of the Nordic Council

There were several reasons why the Nordic Council decided to hold an international Arctic conference in Reykjavik in August 1993. Though the Arctic region was already more in the forefront of the political debate than it used to be in the countries around the Arctic rim, the parliamentarians of the Nordic Council felt a need to discuss the Arctic situation in a more coherent way than hitherto. Environmental issues in the Arctic, the development of the regional economy, the situation of its indigenous peoples, and security and cooperation in the area were all matters of current concern in our countries. Our starting-point was that these questions could not be considered in isolation - they had to be discussed in parallel, and by representatives of all the interested parties. And so the initiative for this conference was taken.

A number of topical questions concerning the survival and future of the Arctic region filled the agenda of the conference, and it should come as no surprise that particular emphasis was laid on environmental issues. Arctic environmental problems have attracted increasing attention recently, especially owing to the threats posed by various sources of radioactivity. The Nordic Council wanted to see a constructive discussion of these questions taking place in Reykjavik - a wish that to a large extent was met. The discussions concluded with the adoption of a final declaration containing a number of recommendations to the governments of the participating countries. Delegates also decided to set up a standing committee in order to be able to follow up the conference.

The Nordic Council places considerable emphasis on environmental questions, which have been increasingly important over the past 15 years. A recent public-opinion survey indicated that the inhabitants of the Nordic countries support this policy, confirming that the Nordic Council has got its priorities right. The Arctic is a unique natural phenomenon, with a flora and fauna not found elsewhere on our planet. The flora and fauna of this region are based on a relatively limited number of species with short nutrient chains. This means that interference with any particular species will have more serious consequences here than in areas of greater ecological diversity. Threats to the natural environment come from pollution transported by ocean currents and the wind, as well as from local sources of pollution.

There is an intrinsic merit in preserving the Arctic environment intact. At the same time, we are interested in exploiting its rich natural assets in the form of fish and other natural resources, and also its oil, natural gas and minerals. While the Cold War was a factor to be reckoned with, opportunities to exploit these resources were limited by military considerations. The need for such restrictions has now diminished, though it would be naive to believe that it has completely disappeared.

Even though the threat of a major military conflict breaking out in the Arctic region has diminished radically, the number of weapons and the volume of military resources in the region have not been reduced accordingly. It is disturbing that one of the greatest concentrations of nuclear weapons, nuclear-power installations and atomic-powered vessels in the world is still located in the Kola area. One of the goals of this conference was to initiate a dialogue between the countries that hold the keys to these military installations - a goal that we, alas, were unable to achieve, since the United States of America did not take part. This crucially important dialogue should deal with how these military resources might be used for constructive purposes in the future, as well as with finding forms of cooperation in resource exploitation in order to avoid conflicts between the countries in the region. We hope that we shall be able to engage in face-to-face discussions with our American colleagues on future occasions.

Nuclear-power stations represent another potential threat, and there is also a considerable risk of leakage from nuclear waste. The Nordic Council has taken a number of parliamentary initiatives, suggesting ways of controlling and defusing such environmental time-bombs. The Nordic Council of Ministers has also made efforts to reduce the risks connected with atomic-powered submarines and with nuclear waste.

The debates at the conference centred on four main themes:

- Natural resources, environment and the development of trade and industry

- The situation for the indigenous peoples of the Arctic region

- Security and defence issues relating to the Arctic region

- The institutional frameworks for cooperation in the Arctic region

Researchers and experts contributed to the discussions at the conference by preparing comprehensive background documentation on these questions and the prerequisites in the various specific areas. In other words, the conference did not take place in a political and scientific vacuum. We must now apply this knowledge as a tool in determining the future development of this region.

The Arctic region is unique, and this also implies a global responsibility for developments in the region. Environmental restoration, after decades of damage, is extremely demanding in terms of money and time. No single country can take on a burden like this on its own. All the countries concerned should agree on a methodical approach and be prepared to make long-term investments. Some form of international financing is the only feasible solution.

The political agenda with regard to the Arctic region has tended to be drawn up by governments and powerful industrial and environmental lobbies. Today, it is widely considered that greater parliamentary involvement is required. The questions are so important and the interests concerned so disparate that a political debate must now take place and aim at clearer decisions on the future of the Arctic region. I hope and expect that this conference will prove to be one important step towards decisive action of this kind.

Ahead of us, we now have the task of following up the initiatives that were taken and the statements made in the final declaration from the conference. I sincerely hope that, through this process, we will achieve results that bear fruit. It is our duty - to ourselves as well as to future generations - to succeed.

Final Document

The Nordic Council's International Conference for Parliamentarians on Development and Protection of the Arctic region

We, elected representatives of the Canadian, Danish, Faroese, Finnish, Greenlandic, Icelandic, Norwegian, Russian, Sami and Swedish Parliaments, and representatives of the Nordic Council and the West Nordic Parliamentary Council

noting

- the vital importance of the Arctic region, and of sustainable development activities there, for the life systems of the entire planet, and the pressures exerted by the world's activities on its fragile environment,

- the responsibilities therefore incumbent on the international community to protect and defend the Arctic region against environmental and other threats,

- the opportunities for further utilisation of the natural resources of the Arctic region, while respecting the principles of sustainable development,

- the need to make use of the knowledge of Arctic conditions and problems possessed by Arctic residents, especially Arctic indigenous peoples, in all relevant decision-making forums,

- the abiding interest of Arctic states in the maintenance of international peace and security, and of the need to deal with Arctic military and other problems in non-Arctic negotiating forums,

- the need for an effective regional institutional framework to promote co-operation for environmental protection and sustainable development of the Arctic region,

determined to

- protect and defend the Arctic environment through concerted efforts against threats arising from outside the region and from unsustainable economic activity occurring within the Arctic region and ensure that the future development of the Arctic region takes place in accordance with high environmental standards, and responsible resource management,

- improve living conditions of Arctic indigenous people, and their possibilities of preserving, protecting and defending their original culture, way of life and legal rights in the future,

- encourage increased communication between people and cultures, and the exchange of products and ideas across the circumpolar north, while ensuring that these activities are conducted in such a way that the Arctic environment is not jeopardised,

- persuade the international community to acknowledge its responsibility to relieve the Arctic region of environmental threats, including radioactive and other hazardous wastes which have been dumped or discharged on land or in sea, and to implement disarmament measures in a manner which reduces the pressures from military activity and further environmental contamination,

- and to promote further scientific research in areas related to the well-being of the Arctic region and its people,

therefore recommend

- strengthened co-operation among the Arctic states and other parties engaged in the Rovaniemi process and its elaboration of an Arctic Environmental Protection Strategy, in accordance with the Agenda 21 of the UNCED,

- continued support for international scientific co-operation, e.g. cooperation which is co-ordinated by the International Arctic Science Committee (IASC) and its knowledge-gathering activities including the traditional knowledge of the Arctic region and its peoples,

- further efforts by the Arctic states to achieve consensus on the establishment of an Arctic Council so as to impart direction, energy and profile to international Arctic co-operation,

- further international co-operation between the states concerned to promote future economic and industrial ecologically sustainable development of the Arctic region, including the utilisation of renewable natural resources, and the use of renewable energy sources,

- to strengthen co-operation in multi-species research and management of marine living resources, and in the monitoring and conservation of the biological diversity, habitats, flora and fauna of the Arctic region,

- to promote co-ordination in monitoring and investigation of climatic change,

- to reduce and ultimately eliminate airborne and seaborne pollution such as that from heavy metals, greenhouse gases, PCB, DDT, and chlorinated hydrocarbons,

- intensified intergovernmental collaboration for the development of communications and transportation systems consistent with the economic, social and natural interconnectedness of the region,

- a widening of the practice of including Arctic residents in international negotiations which have a direct effect on Arctic communities and lands, the environment and natural resources,

- that the International Year of the World's Indigenous Peoples should lead to the proclamation of an International Decade for the World's Indigenous Peoples.

and ask the governments to

- initiate a systematic review of international agreements and other commitments to ensure that satisfactory consideration is given to the environment of the Arctic region and that existing provisions are tightened, or that new ones are drafted where applicable,

- ensure that plans to make use of Arctic living and non-living resources also include Environment Impact Assessment (EIA), at a sufficiently early stage of the process,

- support all efforts to create a total ban on nuclear weapons tests, and to put all other civilian and military use of nuclear technology and nuclear material, including waste management, under strict international surveillance and control,

- support, within the framework of the Euro-Arctic Barents Council, a multinational pilot project to gain practical experience in the monitoring and eventual removal of nuclear waste from one or more Arctic locations,

- speed up and report on any new opportunities for Arctic-related measures of confidence building, arms control and disarmament in existing negotiating forums, and to achieve their realisation, if appropriate directly by the Arctic states themselves,

- in collaboration with Arctic indigenous people, develop a co-ordinated programme of activities to enhance the cultures, recognise the rights and improve the circumstances of indigenous people throughout the region and with regard to their own values,

- support current efforts to study the implications of the opening of the Northeast Passage as a regular shipping route between Europe/North America and East/Southeast Asia,

- ensure the presence of adequate prevention and emergency preparedness measures against potential oil spills resulting from the use of tankers in the Arctic,

Furthermore,

to further the implementation of this resolution, we have decided to establish a Standing Committee of Parliamentarians of the Arctic Region, and

we ask the governments concerned collectively to report to the Committee on the progress of implementation of recommendations in this resolution and on all significant issues related to the future of the Arctic region.

Reykjavik, Iceland, 17 August 1993

ARCTIC CHALLENGES

Report from the Nordic Council's Parliamentary Conference in Reykjavik 16-17 August 1993

INTRODUCTION

The Little Grímur Syndrome

As is the custom, on the first night of the Nordic Council's Arctic Conference the host government kindly invited delegates, observers and guests to dinner. The remarks of the after-dinner speaker, Mr Sighvatur Björgvinsson, the Minister of Industry and Commerce, brilliantly summed up the essence of life in the Arctic region, and by implication the daunting problems facing the conference. Here is the gist of what he had to say.

Outer limits

"We who are present here represent the people of the North. We live in areas which are said to be on the outer limits of the habitable world. Modem technology has facilitated our life; but our ancestors, generation after generation, had to fight an oftly deadly struggle for their bare existence. The peoples of the North had to fight the elements, ice, cold, winter darkness, storms and heavy seas, and those who inhabited Iceland in addition had to fight the fire from the centre of the Earth: volcanic eruptions, lava floods and pumice rains. The minds of people who are reared in such circumstances are marked accordingly. The closeness to the elements of nature and the merciless daily struggle with the elements influences thought and attitudes, which become in some respects different from those developed in subtler and milder climates.

"In the northwest of Iceland is an outlying area called Homstrandir, where many farms existed for centuries scattered in fjords and inlets. During the first decades of this century there were two fishing villages in the area; but with the advent of modem technology and transport, and the growing urbanization of Icelandic society, this area, as many other outposts, was completely abandoned, and it now serves as a nature reserve and an unspoiled summer retreat for hikers from all over the world.

A struggle with the elements

"The people who lived in this area faced a struggle with the elements every day of their life. The growing season is short, snow is only absent three to four months a year, and the grassland is limited. In order to survive the farmers had to go fishing in primitive boats when weather permitted, and during the spring they had to collect eggs laid by auks, guillemots and kittywakes in the steep and forbidding seacliffs guarding the settlement.

"Collecting these eggs is a dangerous task. Eight to twelve men sat on the edge of the cliff with a rope tied to a man who was then lowered sometimes more than a hundred meters down the cliffs, where he collected the eggs and sometimes also snared young birds from the nests. There was a constant danger of loose rocks crashing from the cliffs towards the egg collector - and the ropes were not always up to modem safety standards. It was therefore not certain that the collector would be hoisted up alive by his companions above.

"The eggs were divided evenly between the participants, except for the owner of the ropes and the egg collector, who had a double share. Ropes were expensive in Iceland and the egg collector risked his life.

"When I was a young man in Isafjörður, the regional centre, there was an old man who had been one of the most famous egg collectors in the Hornstrandir cliffs. His name was Grímur, and because of his professional skills he was known as 'Egg-Grímur'. He told me this story.

Afraid of heights

"His father was also an egg collector, which was important for the household since it meant a double share of vitamin-rich food in early spring, when the family had been surviving a long winter with nutritional shortages. When the father grew old it was important that the family provide a successor in egg collecting. There were several sons, but the father selected Grímur as his successor. It so happened that Grímur was afraid of heights. He dared not even walk too near the cliffs, whereas his several brothers climbed them like so many mountain goats.

"Grímur therefore appealed to his father and asked him to choose another son, as he was not fit for the task. The father refused sternly. Grímur then appealed to his mother and asked her to use her influence on his father in this case.

'"One evening when he was awake in his bed he listened in on a conversation between his parents. The mother pleaded Grímur's case. She said she did not understand her husband's choice for a successor since her other sons were more suitable.

Then he heard his father say 'Don't you understand, woman? If something happens in the cliffs, the household will 'suffer least damage if it happens to little Grímur.'

"This is the story of Grímur from Hornstrandir. It typifies the daily struggle of the peoples of the North for generations. And I suppose that you who are here present could add similar stories from your own northern regions."

Fishing war

Norway and Iceland happened to be in the middle of a small but increasingly shrill fishing war in the Barents Sea just as the conference convened. The highest-ranking conference speaker, Norwegian Foreign Minister Johan Jørgen Hoist, found himself the man of the hour in Iceland, with rather more work to do than he might have expected.

What with one thing and another, I thought I sensed an uneasy atmosphere about the meeting in Reykjavik, along with a sense of déjà-vu that evoked faint echoes of the warning delivered by Mr Jo Benkow, President of the Norwegian Parliament, at last year's Second Parliamentary Conference on Cooperation in the Baltic Sea Area, against "too many overlapping conferences". The fishing war in particular, trivial though it was, seemed to augur ill for the Arctic in a future increasingly perceived, to the astonishment of many who should have known better, as unstable and dangerous in the aftermath of the Cold War.

I found it noteworthy, too, that as the conference wore on a confusion seemed to arise between two historically distinct categories, so that issues of "security" and "environment" became virtually interchangeable. The underlying logic, apparently, was that with the relaxing of Cold War military tensions, threats to the environment were now the overriding concern in the Arctic region; and any issue perceived as a threat was ipso facto a matter of "security".

Mr Hoist, in one of several replies to numerous criticisms of his discussion of "security" issues, came close to addressing this confusion directly when he reminded the conference that there was no guarantee future Russian governments would not find reasons to use the vast arsenals of nuclear and conventional weaponry accumulated during the Cold War. Perhaps, then, his own tendency to blur the two categories had been after all a kind of rhetorical device, and of course, in the context of a meeting increasingly hostile to traditional military ways of thinking, a survival strategy.

Little Grímur would have understood.

Tony SamStag

The Nuclear Threat

Opening address by Mr Jan P. Syse

The conference addressed four broad themes: natural resources, environment, trade and industry in the Arctic; the indigenous peoples of the Arctic; regional security and defence issues, and relevant institutional frameworks for cooperation. Taking the latter two as one topic, in his opening statement, Mr Jan P. Syse, President of the Nordic Council, sketched out the issues as follows.

- Environment "From a regional point of view there should be a development potential which could give the Arctic a viable economy on the same level as other parts of the countries around the Arctic basin. What is acceptable from this point of view? What methods can be employed to exploit natural assets, minerals, etc., and to undertake industrial production without damaging or destroying the region's natural qualities? There must also be a focus on environmental threats... Who is actively pursuing these development questions at the moment? Are they the right bodies, in view of our desire to sustain the environment of the Arctic regions?"
- Indigenous peoples: "Everyone is interested in preserving the natural assets of the region in the form of fish and other products. In addition, the 'local inhabitants' have a special interest in the preservation of natural assets in a form which favours their production methods and their way of life."
- Security and cooperation: The Barents Sea Council, the Northern Forum and AMAP were examples of institutions concerned to facilitate cooperation in any number of spheres including science, environmental protection, administration and politics, Mr Syse said. "How can duplication of efforts be avoided? What are the security policy requirements? What is the potential role of military organizations in the future? Can they [for example] be utilized for environmental conservation tasks?"

Starting point

Citing a recent public opinion survey in which more than half of those taking part identified "environmental questions" as the most important tasks for future Nordic cooperation, the speaker enlarged on the theme of environment as the starting point for the conference.

The Arctic, he said, is a unique natural phenomenon, containing flora and fauna which are not found elsewhere on our planet. There is an intrinsic value in preserving this environment intact. At the same time we are interested in exploiting its rich natural assets in the form of fish and other natural resources, and also its oil, natural gas and minerals. While the Cold War was a factor to be reckoned with, opportunities to exploit these resources were limited by military considerations; but now the need for such restrictions had changed."

New, constructive uses for existing military installations, he continued, must be the subject of a dialogue that he hoped the conference would initiate; in any case, conflict was still a possibility, if only over competing claims to the exploitation of resources in the Arctic. Meanwhile, nuclear installations in the region posed perhaps the greatest environmental threat. "It is disturbing that one of the greatest concentrations of nuclear weapons, nuclear power installations and atomic-powered vessels in the world is still located in the Kola area.

Nuclear warheads

"Several thousand nuclear warheads are deployed at various bases on the Kola Peninsula. In addition, there is a large fleet of atomic-powered vessels in the neighboring sea area. The threats to environment and to health posed by radioactive leakage from reactors and nuclear warheads on atomic submarines which have been shipwrecked is a matter of further concern.

"Nuclear power stations represent another potential threat. The nuclear power facility on the Kola Peninsula has four reactors, and two of these - the oldest ones - are of the same type as the reactors at Greifswald which were shut down after an inspection in 1990. It has been established that these installations do not comply with reasonable safety standards." The risk of leakage from nuclear waste dumped in the Barents and Kara Seas was another "serious threat to safety and to the environment".

Failure on Kola

The Nordic Council and the Council of Ministers had taken numerous steps to deal with issues of pollution in general and of nuclear pollution in particular. The prominence of these topics on the conference agenda was an earnest of the determination of the Nordic institutions to ensure that discussion continued at a parliamentary level.

All the countries concerned should agree on a methodical approach and be prepared to make long-term investments, Mr Syse continued. Various forms of international financing were probably the only feasible solution. A case in point was the failure of Russia, despite a joint Norwegian-Finnish initiative, to cleanup emissions from its nickel refinery on Kola "because Russia has not been able to put up the funding required for its share of the financial commitment. As a result, emissions from this plant causing extremely serious environmental pollution are still continuing."

The President of Iceland, Ms Vigdis Finnbogadóttir, attended the opening session of the conference.

FIRST THEME

Natural resources, environment and the development of trade and industry

The Arctic region - challenges and opportunities

Dr E. Fred Roots

The first speaker on this theme, Dr E. Fred Roots, chairman of the Council of International Arctic Science Committee, Canada, concluded firmly that "with a few exceptions, commercial exploitation of the natural resources of the Arctic will not contribute significantly to the world as a whole. The wealth and the contribution of the Arctic regions to the world is no less, and in the opinion of many much greater, in terms of these realities; but the contribution is not in the future likely to be in terms of commercial profit, mass markets, or political power."

The next two speakers, however, argued from the assumption that at least some exploitation was possible and even (by implication) desirable, provided that proper environmental safeguards and principles of sustainability were maintained. Such differing approaches seemed to raise a deeper issue: was the Arctic to be treated, a bit like the Antarctic, as a more or less inviolable natural reserve, with exploitation limited to subsistence levels; or did those with an interest in the Arctic think it should take its place in the world, albeit as a region with very special environmental conditions and needs, on the same capitalist terms as any other nation or group of nations?

What is the Arctic for?

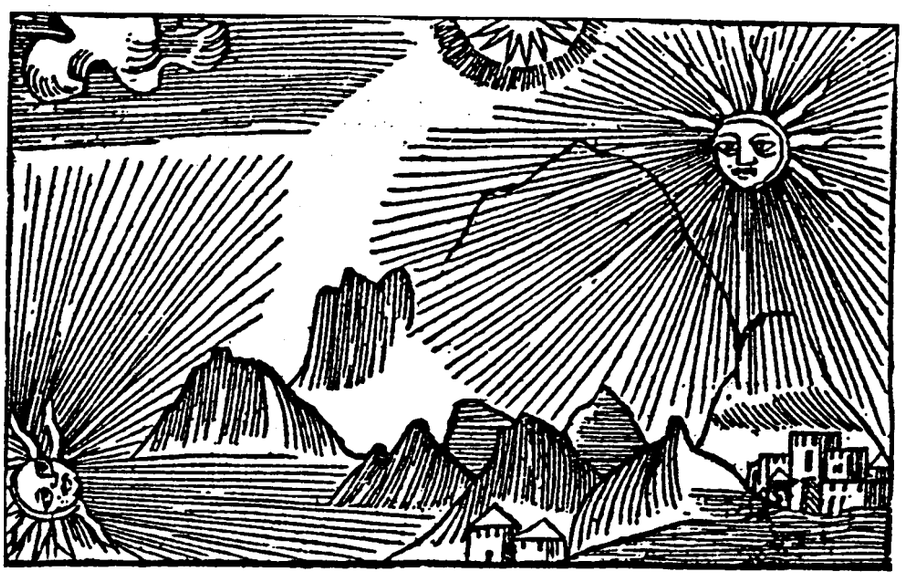
Dr Roots seemed to be arguing persuasively for something like the former; but the question as such - What should the Arctic be for? - remained implicit. The speaker's attempts to contrast "homeland" and "frontier" aspects of the human presence in the Arctic (in total contrast, of course, to the uninhabited Antarctic) did, however, suggest that he was acutely aware of this dilemma.

Dr Root's argument against exploitation drew heavily on historical background. For example: in 1595, when Barents, Jon Rijp and Heemskerck discovered Spitzbergen and what is now called Barents Sea, "they could scarcely believe the abundance of whales, which they described 'as numerous as carps in a pond'". The descendants of their commercial sponsors, scarcely fifty years later, found that even with the inefficient and hazardous whaling methods of the day, the whales were suddenly nearly all gone. Bankruptcies and political repercussions followed. "The same mistake, the failure to understand the consequences of the low biological energy of the Arctic, has been made over and over again, with frustrating outcomes for investments and economic development plans, and, sometimes, tragic results for northern peoples."

In other words, the unique biological characteristics of the Arctic make it very hard to "manage" from a traditional human point of view. Stable sustained productivity by biological resources is not a characteristic of Arctic ecosystems and can scarcely be imposed just to meet human demands. "Territorial boundaries decided by humans mean nothing to the Arctic environment, and management policies based on these can only be disruptive to the resources . ..."

Continuous subsidies

The only way to achieve and maintain high productivity in almost any Arctic enterprise, the speaker continued, was by continuous subsidies from the south. "Such subsidies commonly disrupt and destroy other environmental relationships." Many problems we face in the Arctic region reflect the fact that political institutions, economic structures and practices, market forces and conventional expectations are being superimposed on the Arctic, and they do not fit.



Midnight sun according to *Olaus Magnus*, 1555.

Institutions and practices evolved and developed in areas where natural biological energy is high disrupt low-energy ecosystems; the application of large amounts of mechanical, chemical or electrical energy causes great dislocation in environmental processes dominated by slow chemical reactions and the energy anomalies of the freeze-thaw cycle; and the expectations of increased biological productivity or stability of "harvest" are incompatible with the workings of ecosystems whose survival depends on small-scale units and dynamic fluctuations between scarcity and abundance.

Mystifying and terrible

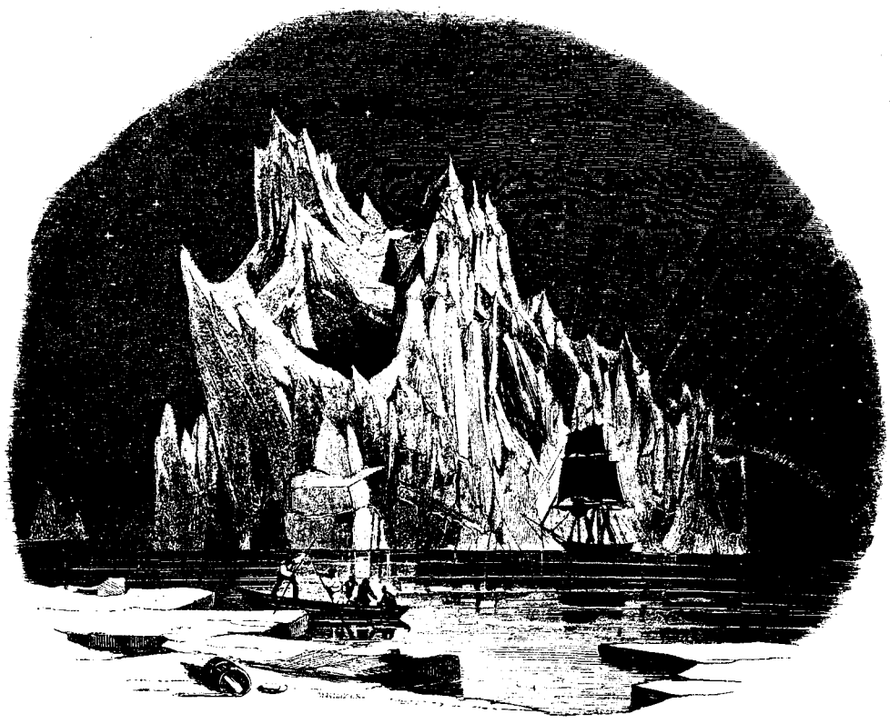
Reviewing some of the historical literature, Dr Roots noted that the Arctic region had been inhabited by man for at least 40,000 years. The first polar explorer of record was Pytheas, from the Greek colony of Masilia, the modem Marseilles, in about 320 BC. The land he identified as Thule, where the sea was frozen, might have been Iceland or northern Norway, according to various sources. The frozen sea was "mystifying and terrible to warm-ocean sailors" and, with a great many other Arctic phenomena, so new to Mediterranean scholarship "that the words to describe them had to be borrowed from Pytheas' Celtic and Norse contacts".

Under the constellation Arktos, the Great Bear, "even the most commonplace and dependable acts of Natures, such as the rising of the sun in the morning and its setting in the evening, were strange and different. Beyond the Arctic Circle the sun went round and round in summer without setting, and in the time of the winter solstice it did not rise at all. The sea froze, great mountains of ice floated on the oceans, strange shafts of light danced in the heavens, and the mariner's lodestone spun endlessly on its thread without pointing to Polaris, the North Star."

In subsequent centuries, these Arctic phenomena had been understood and explained. But the distinctiveness of the Arctic, the sense of wonder and of the magic of Nature, remain. "It is part of our Arctic homeland and our frontier."

Towards an Arctic philosophy

In about 875 AD, the Norwegian Othere (Ottar) made the first recorded voyage to the Arctic Ocean during an attempt "to see how far the land extended, and whether any people lived beyond the wasteland". Sailing around the Kola Peninsula and into the white sea, he founded a trade in walrus ivory. Fifteen years later he visited England and presented a gift of ivory to King Alfred the Great, to whom he also offered exclusive rights to the Arctic in return for a concession on trading rights with England. King Alfred declined.



The northerly icebergs were depicted imaginatively by artists who had never seen them. Frederick Whymper's Icebergs, 1868.

Here was one of the earliest examples, Dr Roots argued, of the tendency to make decisions about the Arctic from a distance. Did King Alfred, the speaker wondered, show good judgment in declining to become involved? "And how different might the history of the region have been if he had accepted? The time is long overdue for the peoples and cultures of northern and non-northern areas to meet as equals. But the realities of the Arctic environment will ensure that practices, expectations and policies from temperate regions cannot be simply extended to the Arctic regions without failure, unpredictable cost, and tragedy. Success in the Arctic is not so much a matter of technology and economy, but of philosophy. Perhaps King Alfred realized this."

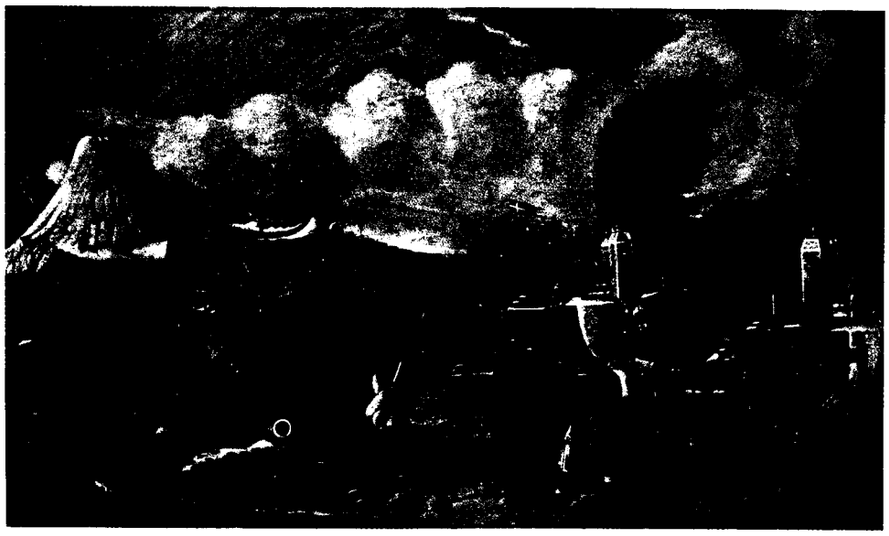
Two Arctic economies

As an example of the "mis-match" between the Arctic region and the institutions imposed upon it, the speaker distinguished two separate economies in the region, which he said had coexisted for at least a thousand years: the flexible, small-scale indigenous economy, "providing the people within it with a culture and society that by any world standards must be considered successful", and "an economy directed from the outside and designed to satisfy the needs, business demands and political motives of non-Arctic areas..." A key factor was the exploitation of resources considered valuable by the outsiders, including ivory, whale oil, gold and other metals, and petroleum: "but not, in the main, resources that were seen as particularly useful to the internal economy". Military and transportation activities also generated little economic benefit within the region.

Virtually all exploitation of resources by outsiders had proved short lived; meanwhile, all northern countries had taken political steps to support or preserve subsistence use of Arctic resources. The tenacity with which indigenous people in all circumpolar countries defend their subsistence lifestyle was evidence of its "viability and reality".

Climate change

Dr Roots noted that the Arctic regions are particularly sensitive to climate change, so that small changes in the global environment may result in large, perhaps

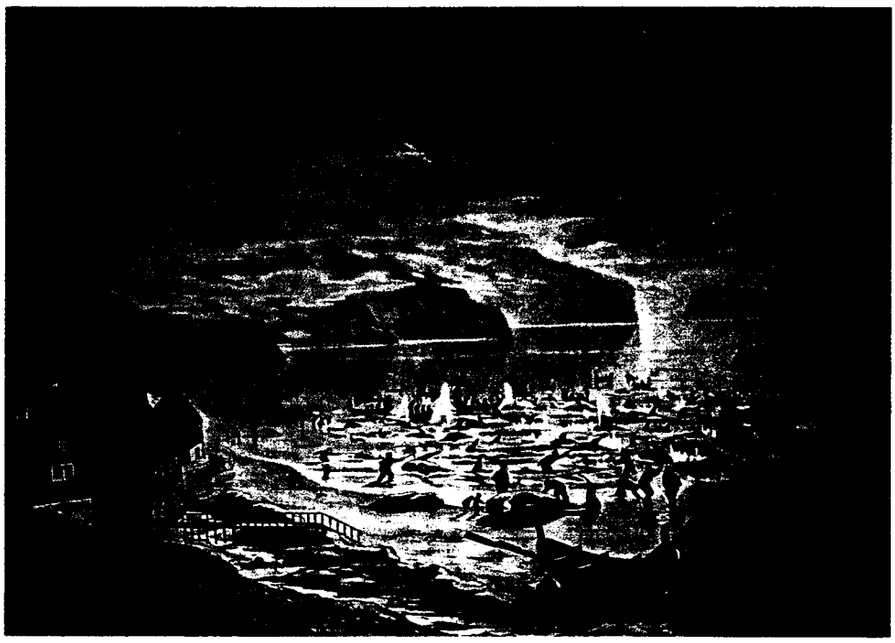


Whaling. Oil painting by *A.R.Spoeck,* 1634. Photograph: *Skokloster* Castle, Sweden.

exaggerated, changes in the Arctic environment in weather patterns, precipitation, river flow, permafrost and sea ice, for example. There was a consensus that rapid changes in climate could well result in a net reduction of biological resources or capacity in many parts of the sub-Arctic and Arctic. Such reduction would profoundly affect indigenous life styles and thwart ambitious plans for, say, expansion of sub-Arctic agriculture and forestry.

The speaker quoted a researcher: "At our present state of understanding, it looks as if a rapid increase of greenhouse gases will make the Arctic regions a place where it will be easier to live, but harder to make a living."

The large groups of walruses were attractive *quarry* for seafarers, since their large tusks resembled ivoy and were therefore much sought after. From Hayes, 1,1., The Open Polar Sea. London 1867.



Whaling in the *Faeroe Islands, from* a Norwegian school wall-chart. Photograph: *Hasse Schröder*.

Fisherman in a kayak. For illustrative purposes the halibut, representing his intended catch, is visibly delineated under the water. From Adams, W. D. H., Recent Polar Voyages. London, Edinburgh and Nero York, 1880.

Environmental challenges in the Arctic region

Mr Heikki Sisula

"The whole circumpolar Arctic is a sink for all kinds of pollutants from the south', Mr Sisula said during his brief presentation. "It is a huge sink, but not infinite."

Eastern North America, central and eastern Europe, China and the Far East had been identified as sources of long-range transboundary pollution carried to the Arctic by the prevailing winds, ocean currents and great continental rivers running into the Arctic seas. Important local point sources of pollutants within the Arctic region included the nickel industry in the Kola peninsula and the nuclear dumping sights in the Barents, Kara and Bering Seas. Intensified offshore oil and gas expiration in the region posed yet another threat.

As chairman of the Arctic Monitoring and Assessment Programme (AMAP), the speaker was ideally placed to review the various institutional-responses to a range of environmental threats to the region. The ministers of the eight Arctic countries had signed, at Rovaniemi, Finland, in 1991, an Arctic Environmental Protection Strategy defining a half dozen "problems and priorities" - persistent organic contaminants, oil pollution, heavy metals, noise, radioactivity and acidification - to which should be added, Mr Sisula said, changes in biodiversity and the effects of climate change on ecosystems.

The Strategy specifies four commitments, of which the work of AMAP, with a permanent secretariat of four to five persons based in Oslo, has been perhaps the most successful to date. The others are Conservation of Arctic Fauna and Flora (CAFF), protection of the Arctic marine environment, and emergency prevention, preparedness and response.

According to the Arctic Environment Protection Strategy, "development in, or affecting, the Arctic must be conducted on the basis of information about the impact of resource exploitation on the environment, ensuring that changes in nature are minimized. " Environmental impact assessment (EIA) should be included in all plans to exploit the natural resources of the Arctic, particularly with regard to planning of the Northern Sea Route or further exploitation of off-shore oil and gas fields in the Barents and Kara Seas.

Scientific audit

A scientific audit report on AMAP was to be published at the next ministerial meeting in Nuuk later in 1993; the first AMAP report on the state of the Arctic environment was due in 1996.

The speaker concluded: "Let there be no misunderstanding about this: we have enough information to start to protect the Arctic environment and, despite human greed, we should start now."

Utilization of living marine resources in the high North

Mr Jakob Jakobsson

After a brief survey of the Arctic and sub-Arctic ecosystems, and some of the disasters that have befallen them, Mr Jakobsson, director of the Institute of Marine Research, Iceland, declared: "I am of the firm opinion that in order to avoid upsetting the balance of these ecosystems one must in the long run harvest all the top predators. Thus one should take some whales, some seals, some cod, some herring and some capelin, not forgetting seabirds and shrimps but taking great care to avoid over-exploitation of any one link in the system."

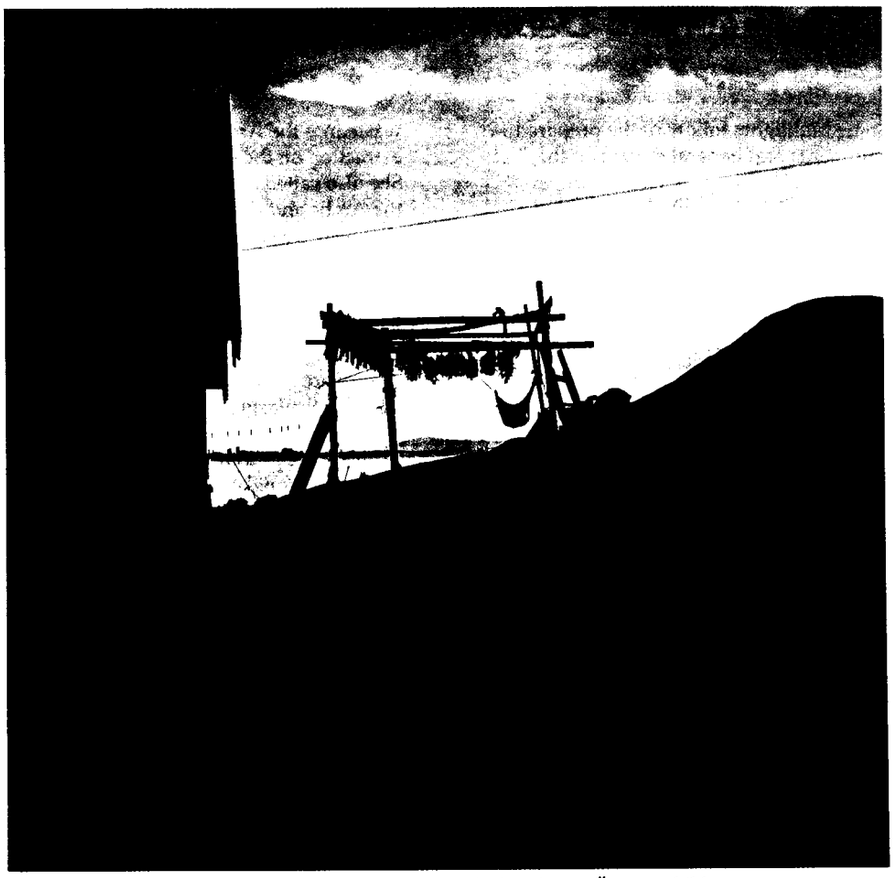
The Arctic seas, he noted, are primarily feeding grounds for species that spawn in sub-Arctic areas which are characterized by high productivity but low biological diversity. In other words, they are rich in fish production but the fish belong to a few species. Experience has shown that such ecosystems are attractive to fishery but have low stability and may be seriously affected by over-exploitation of one or more key species in the system. Large numbers of marine mammals, about 20 species altogether, probably play a far more important role in the large Arctic and sub-Arctic ecosystems than in any other marine systems. These fishing grounds account for about 10 per cent of the total world fish landings.

Collapsing fisheries and seal invasions

Mr Jakobsson noted that even the Vikings had experienced a temporary famine when the Norwegian herring fisheries collapsed about a thousand years ago. Describing more recent crises, he concentrated on relating the depletion of each species to that of others along the food chain.

For example, the depletion of Barents Sea capelin, 1985-6, combined with the aftermath of the herring collapse during the late 1960s, meant that the cod (which had fed on both species) "grazed down other available food, including its own progeny" until the cod starved and the average weight-at-age dropped by about 50 per cent. The subsequent invasion of Arctic harp seals into Norwegian coastal waters in search of food accentuated the disaster and led to "a degradation of the Barents Sea ecosystem". Scientists are still arguing about the causes of these dramatic events in the Barents Sea during the late 1980s.

By the same token, overfishing and environmental deterioration had contributed to wide fluctuations or collapses in cod fisheries off Greenland and in Canadian waters off Labrador and eastern Newfoundland, and on the Grand Banks. The cod fishery at Iceland had also suffered from the combined effect of varying environmental conditions and very high fishing pressure, which has resulted in a low level of spawning stock abundance.



Fish drying. Ukkusissat, Greenland. Photograph: Malcolm Hanes, Äventyrsbild.

Packing prawns. *Nuuk,* Greenland. Photograph: Per *Folkver/Ragnarok.*

Comments and Debate

Some highlights follow of the prepared comments and general debate on the first theme.

• ***Dr Roots*** drew the attention of the Conference to the International Science Initiative in the Russian Arctic (ISIRA), launched by the Oslo-based International Arctic Science Committee (IASC), of which he is president, in order to develop and assist Arctic science, environmental protection and recovery, and sustainable development in the Russian Arctic. National governments and international organizations are invited to support the programme.

• ***Mr Hjörleifur Guttormsson,*** MP, Iceland, called for the Arctic countries to initiate a systematic review of international agreements and other commitments to ensure that satisfactory consideration was given to the Arctic environment, tightening existing provisions or drafting new ones where appropriate.

• ***Ms Helena Dam á Neystabø,*** West Nordic Parliamentary Council member, Faeroe Islands, said the economy of the Faeroes was at the point of collapse because of the environmental problems previously discussed. The international community, and especially Western Europe, had a moral responsibility to recognize that Arctic states such as the Faeroes, Greenland and Iceland had a special status in the world transcending ordinary market mechanisms.

• ***Ms Kristín Einarsdóttir,*** MP, Iceland, urged permanent bans on all dumping of pollutants at sea, all import of hazardous waste into the Arctic region, and all oil extraction on the Arctic continental shelf. She also called for total demilitarization of the Arctic and designation of the region as a nuclear-free zone.

• ***Mr Svend Erik Hovmand, MP,*** Denmark, feared that the peoples of the Arctic, and indeed the Arctic region as a whole, had been overlooked in the turbulence following the end of the Cold War, particularly as there might now be a tendency to focus on the problems of eastern Europe and the Third World. But the international community as a whole would also suffer in the long term if threats to the environment of the Arctic region were ignored.

• ***Mr Vladimir Warfalamijiw,*** MP, Russia, delivered to the conference a recent report on the dumping of radioactive waste and other nuclear materials by the former Soviet Union and called for concrete projects to improve the environment in the Arctic region: "We should stop making general statements", he said.

• ***Mr Eiður Guðnason,*** MP, Iceland, said that all utilization of marine living resources "must be based on scientific data and facts, but not on misunderstood ethical or so-called moral grounds".

• Ms Kirsti ***Kolle Grøndahl,*** Norway, of the Nordic Council Presidium, said student research programmed were being intensified on Svalbard (Spitzbergen), and other signatories to the Svalbard Treaty were welcome to participate. She wondered whether the time had come to reconsider the terms of that treaty. "It is amazing how little we know", she said.

SECOND THEME

The situation for the indigenous peoples of the Arctic region

Survey

Mr Robert Petersen

The speaker, professor at the University of Greenland, spoke of the international community's responsibility to give hope to peoples who are not in a position to control their own destiny and resources. In this regard he cited ILO Conventions 157 and 169 and the UN Declaration of Human Rights of 1948 as appropriate instruments.

The Arctic peoples had suffered "a common fate" in that "other peoples came from the south, and dominated them technically, intellectually and economically". This history of domination, arguably, was even more of a link between the various groups than their common adaptation to Arctic conditions. Cultural change imposed from the south very often removed economic and social responsibility from the local communities; the results included alcohol and other health problems, and high rates of unemployment, crime and suicide.

Mr Petersen stressed one characteristic aspect of indigenous peoples generally: that their social structures were based originally on collective ownership of land and resources from which the necessities of life were transferred into private ownership. He identified the main groupings of Arctic indigenous peoples as Inuit, Arctic Indians, Aleuts, the small nations of Siberia, and the Sami of Scandinavia and Russia. Most lived originally in small communities without common authorities, organized in households or household-based settlements. "The relationship between different units was transparent..."

Hunting, fishing and gathering were primary occupations on which the economy was based, with reindeer husbandry probably more important in the Eurasian Arctic. Trade had not created true secondary occupations but played an important role in the redistribution of resources.

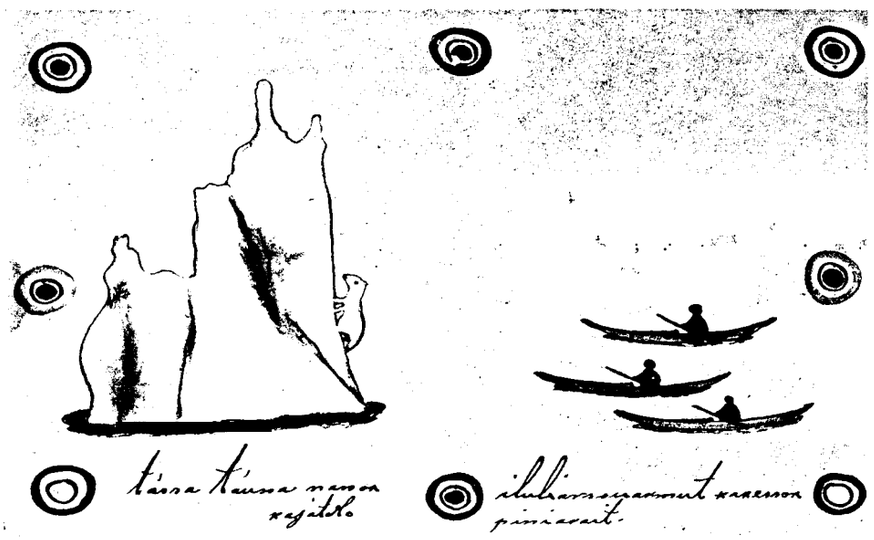
Respect for animals

Traditional skills passed on within the family included "what kinds of animals they might hunt, by which methods and with which implements, to which seasons, and what dangers they might meet during their trips. And they learnt that their hunting might play a role in the availability of animal stocks. They learnt . . the community norms, and one of the most important things to learn was to respect the lives of animals. " Belief that animals had souls meant that killing was acceptable only when it was necessary for survival. Killing stopped when "you were prepared to meet the demands of an average winter". Many Arctic peoples distributed food to the needy as long as the community had supplies. "This kind of common distribution was - often together with the collective land ownership - interpreted as no ownership at all. But this kind of distribution was a kind of insurance system... " Only food was distributed in this way; other products of the hunt were bought or bartered, as were such skills as magic, shamanic help or midwifery.

All education was on a person-to-person basis: None of the Arctic peoples, the speaker said, had created a regular writing system before contact with Europeans and Euro-Americans. Some communities formed cooperative groups of households, and often a number of groups formed a kind of council with a head that might take necessary decisions, but without any authority to change the norms of the community. Justice was the responsibility of the households, families or clans.

History and language

The Scandinavian Sami and the Russian Komi may have been in contact with the south as early as Medieval times. Most Sami now live above 68° North latitude, as minorities; only in Norwegian Finnmark are they in a majority. It is only in the latter half of this century that the Sami have been recognized politically, that a Sami orthography has been developed and the language included in the curricula, and that Sami radio and later television broadcasting have become routine.

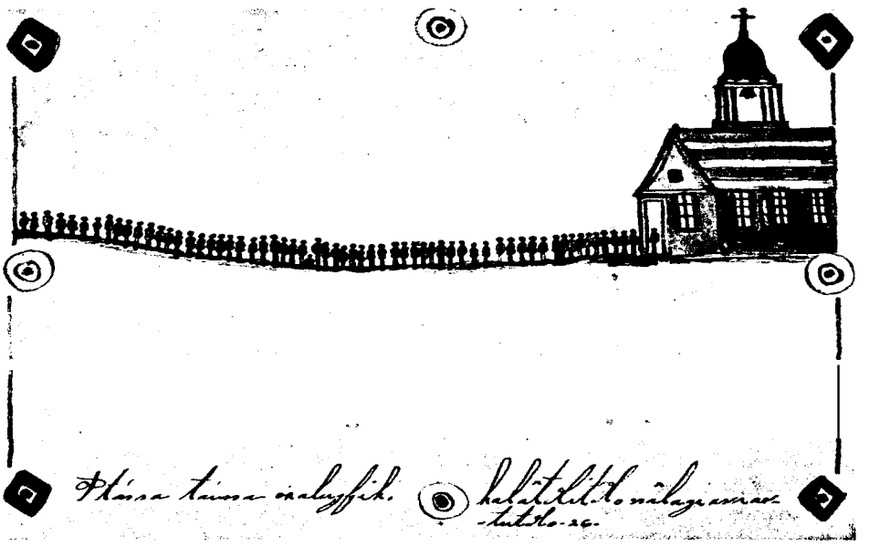


A polar bear, pursued by three kayaks, crawls upon an iceberg. Tinted drawing by *Isag* of *Igdlorpait*. Photograph: Ethnographic Collection, National Museum of Fine Arts, Copenhagen.

In the former Soviet Union, especially in Siberia, many of the indigenous peoples were fluent in several languages, as numerous small nations were obliged to communicate with their neighbors. Writing systems were developed in the Roman or Cyrillic alphabets as early as the 1930s, and a vigorous literature developed; many individuals achieved secondary or even higher academic degrees, although the majority continued the traditional occupations such as hunting, fishing, trapping and reindeer husbandry. Russian nevertheless became the lingua franca, and massive development projects by the central authorities seriously damaged the cultures and livelihoods of the indigenous peoples here as elsewhere.

In the American Arctic, the Alaska Indian, Pacific Inuit (Yupigit) and Aleut came into contact with Russian tradesmen and hunters during the 18th century. From 1825 the Russian missionary Ivan Veniaminov developed orthographies in Aleut, Thlinkit and Tsimshian. The

Goatherd *Jaasaaq* and his goats. Tinted drawing by *Isag* of *Igdlorpait*. Photograph: Ethnographic Collection, National Museum of Fine Arts, Copenhagen.



Greenlanders on their way to church. Tinted drawing by *Isag* of *Igdlorpait.* Photograph: Ethnographic Collection, National Museum of Fine Arts, Copenhagen.

Aleutian and **Inuit** languages were suppressed in favour of English after the sale of Alaska to the United States; all such restrictions were removed by law in 1971.

Inuit literacy

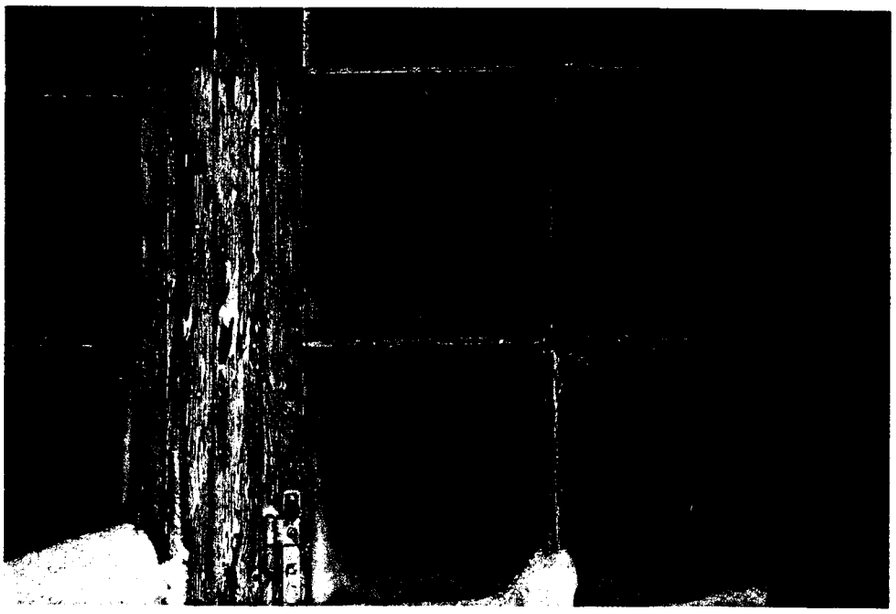
Moravian and Anglican missionaries in Canada developed an orthography for the Labrador Indians and **Inuit** towards the end of the 18th century; a "syllabic writing system to some degree reminiscent of early versions of shorthand" enjoyed particular success, creating by 1920 about 75 per cent literacy among the Inuit over a vast geographical area. In Labrador and in much of the central and western Canadian Arctic, however, the Roman alphabet was used, creating a linguistic divide that persists despite various attempts to reconcile the two systems.

Today, **Inuit** periodicals and **government** publications are numerous; local radio broadcasts are frequent, and a Northern Service of the **CBC** has regular transmissions in **Inuktitut,** as the Canadian **Inuit** language is known.

In Greenland, the Norwegian missionary Hans Egede was instrumental in the preparation of an orthography from 1721; a new system introduced in 1851 was more sympathetic to the structure of the Greenlandic language, known as **Inuttut**. Periodicals, most of them bilingual, have been published since the 1860s. The indigenous language, at one time in danger of being supplanted by Danish, has staged a revival since the introduction of Home Rule, with one survey taken during the late 1980s suggesting that 90 per cent of the population can express themselves in Greerdandic -an "astonishingly high" figure. About 100 fiction, poetry and non-fiction books are now published in Greerdandic annually, plus numerous translations of Nordic and world literature. Radio Greenland, broadcasting 13 hours a day, is 70 per cent **Greenlandic,** 30 per cent Danish; television transmissions are often videos or relays of Danish productions, sometimes translated.

Culture and politics

Mr Petersen described the political development of Greenland as a complex and apparently largely futile process of bureaucratic domination by Denmark dating from about 1860, when the first publicly elected bodies were established. Home Rule, and Greenland's subsequent decision to leave the European Community, made possible a system of regional self-government not dissimilar to that of the Faeroe Islands. Greenland acquired a legislative parliament and a seat on the Nordic Council.



Photograph: *Ivar Silis, Qaqortoq.*

The Canadians initially approached issues of land ownership through treaties, on the assumption that, in theory, the land belonged to its original inhabitants. The concept of treaty was, however, difficult for the Inuit. Political involvement came relatively late; the first political council was set up in the North West Territories only in 1877. Around 1970 the Inuit adopted a more successful system of "brotherhoods" on the Indian, model, initially in reaction to oil exploration of the Mackenzie delta. A series of similar confrontations and compromises has led to the formation of regional self governments, allocations of land rights, compensation and royalty agreements, and the adoption of a Nunavut Act this year creating, in 1999, a new territory in which the Inuit are likely to have a majority in decision-making.

[The various Canadian agreements were discussed in detail by the next speaker, Ms Marianne Stenbaek.]

"The voice of indigenous Alaska"

An Alaskan Indian Brotherhood and Sisterhood had existed since 1912; but only after Alaska achieved statehood in 1959 did native groups begin to gain political influence, culminating in the formation of the Alaska Federation of Natives (AFN) in 1966 as an umbrella organization comprising Indians, Inuit and Aleuts. "Very rapidly, the AFN was accepted as the voice of indigenous Alaska", and in the course of a year its land claims were being taken seriously.

In 1971 the Alaska Native Claims Settlement Act formally accepted the principle of indigenous ownership of their homeland. State land, and regional, native and village areas, were designated, with provisions for "a kind of self-government". Thirteen regional corporations were formed, rights were allocated among the various interest groups, and a shareholding scheme established. These arrangements have proved far from perfect; but they have conferred upon the indigenous populations a genuine influence over resources.

The Small Peoples

Despite a declaration by the Supreme Soviet in 1924 that ethnic cultures and nationalities should be respected, the indigenous peoples of Siberia were subject to pressure from settlement by Russians and Ukrainians, among others, and by development works. Hydroelectric power schemes and the extraction of oil, gas and minerals were especially destructive of the fragile taiga and tundra. Prestige projects took little account of the environment or of traditional ways of life.

Until recently, the fate of many of the indigenous peoples was unknown in the west. In 1989, the Small Peoples of the

Soviet North formed an association with "survival" as its declared objective. More specifically, the association called for self-deterrnination, for exclusive rights to taiga, tundra and river systems, and for re-establishment of the Academy of the Peoples of the North.

Institutional initiatives

Of the various bodies setup by and for the indigenous peoples themselves, the speaker also noted the Nordic Sami Council, established in 1956, and the Sami Parliaments of Finland (1973), Norway (1989) and Sweden (1993). "Their main role is to be advisors for national parliaments. But their political influence is greater than their formal power, as they appoint members of important committees."

The Inuit Circumpolar Conference, established in 1977, was granted formal NGO status by the UN in 1982.

Commentator:

Ms Marianne Stenbaek, Director General, International Polar Institute, Canada

In Canada, indigenous peoples and their concerns are now on the national agenda, Ms Stenbaek said. "What should be remembered is the close ties, traditional and newly formed, between the various peoples of the Arctic so that the political experience of the Canadian Inuit will influence their Arctic neighbours."

During the past 20 years, the aboriginal peoples of Canada had achieved "overwhelming change" with implications for all the other indigenous peoples of the Arctic region. Roughly half of the circum-Arctic world from Greenland to Alaska was now under some form of Inuit control. The Canadian Inuit in particular now possess "unprecedented economic and political power with a land base to sustain them", based at least in part on their development of "an individual and highly successful political style: non-confrontational, consensus seeking, with detailed negotiations based on thorough research of judicial, historical, ethical and cultural issues combined with exceptional persistence".

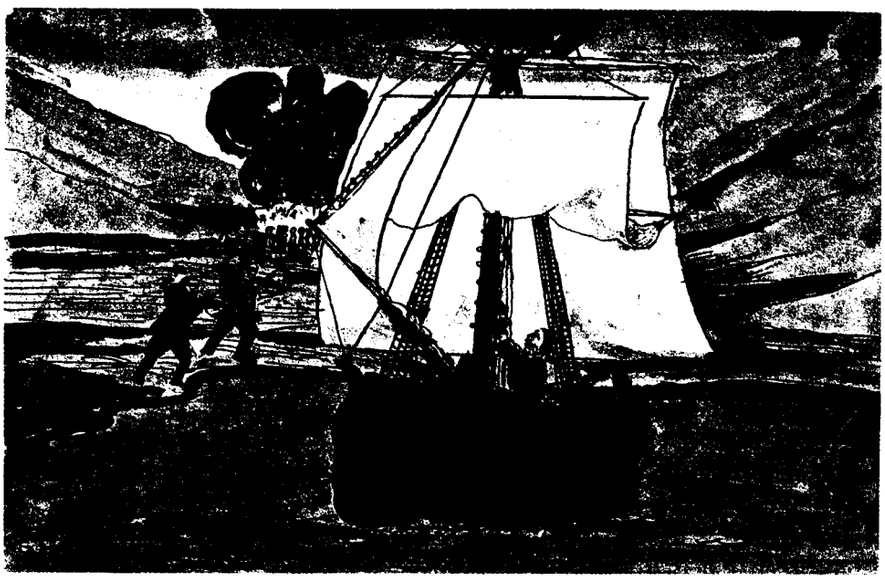
The Canadian experience exemplifies "a fundamental principle that must be observed if we have to do things in the Arctic... that the indigenous peoples have the fundamental right to be participants in the decision-making process - in fact, with the political changes taking place they will often be the ones leading the decision-making process. The Canadian example also shows that the indigenous peoples have much in ethical, political and economic knowledge and power to bring to such cooperation."

Land claims settlements

In 1975 the James Bay Agreement, the first manor lands claim settlement, gave the Quebec Inuit control over economic development and land, plus ownership of land and financial compensation. The Inuvialuit also received land and compensation money in 1984 which made them "major players", as the speaker put it, in oil and gas development in western Canada and the Beaufort Sea.

On July 9, just over a month before the Reykjavik conference, two Bills were given the final Royal Assent by the Canadian governor-general. One Bill ratified the land-claims agreement and the other was a Bill to create the territory of Nunavut by dividing the present Northwest Territory in half. The Inuit-owned lands are 353,610 sq.km, about eight times the size of Denmark or ten times the size of Iceland. The total Nunavut territory comprises about a fifth of Canada. The Inuit also received compensation of $1.4 billion, payable over 14 years.

Nunavut is to have its own legislature; it will become a territory from 1999 and "there is the possibility that it may someday become a province".



"Only one of the Icelandic trawlers eludes the Green landers, since he was on board the ship. " A meeting between the indigenous inhabitants and intruders, depicted by Aron of *Kangeq, from* his series on the northern peoples. Watercolor. Photograph: Ethnographic Collection, National Museum of Fine Arts, Copenhagen.

Indigenous airlines

In addition to the comprehensive land claims settlements, economic aspects of Canadian relations with its indigenous populations comprise numerous business ventures controlled by indigenous groups: Inuit-owned cooperatives like Makivik in Northern Quebec and the Inuvialuit Regional Development Corporation in the Western Arctic, invest in construction firms, own and operate their own airlines and are involved in other major development and investment projects. These bodies are now starting to work closely with other circum-Arctic indigenous peoples.

Ms Stenbaek was equally keen to emphasize the "more intangible ways" in which indigenous people contributed to Canadian society and culture: primarily, through their traditional knowledge of the Arctic region (for example, the multinational cosmetics firm, the Body Shop, she noted, was currently studying the use of traditional materials in the Canadian Arctic), and through approaches to the environment, "of respecting it and viewing it as a gift in temporary trust", as expressed in such concepts as sustainable development,

Third level of government

During the past 20 years the aboriginal peoples had been instrumental in bringing about consensus among the eleven governments (the federal government and ten provincial governments) on inherent rights to self-government. Aboriginal peoples' negotiated self-govemments had been accepted as "a third level of government" with the right to participate at prime ministerial level on decisions likely to affect them. These rights were codified in a series of constitutional amendments known collectively as the Charlottetown Accord - which had not yet, however, been ratified by Canadian voters, largely because of public opposition to other amendments included in the Accord. The speaker was optimistic that the work of the Royal Commission on Indigenous Peoples would settle the issue during the next couple of years.

Other recent changes and initiatives that augured well for the future of indigenous people in Canada included: the newly established Canadian Polar Commission, for the advancement of Canadian Arctic science; a set of ethical principles adopted by the Association of Canadian Universities for Northern Studies "taking indigenous concerns and community consent into regard", and the

recent establishment in Montreal of a new International Polar Institute in cooperation with Danish and Russian institutions, specializing in telecommunications and environment.

The Arctic might ultimately become "a model for world cooperation and peaceful coexistence", Ms Stenbaek concluded: perhaps even in the form of "an Arctic Common Market".

Commentator

Mr Alf Nystad, Member of the Norwegian Sami Parliament

Until quite recently, the speaker said, administration of the Arctic by national authorities had been a failure, particularly when it came to respecting the cultures, ways of life and environment of the indigenous peoples. It was only in the past 10-15 years that Scandinavian politicians had begun to accept Sami identity; the Nordic countries, in fact, had been the last of the Arctic states to try to come to terms with their indigenous populations. Sweden in particular tended to display a "very negative attitude" to Sami claims for hunting and fishing rights, most recently in Geneva this summer.

All citizens in Russia were identified ethnically. "One question we might ask is whether we in the Nordic countries might be permitted to think of 'Sapmi' ['Samiland'] in terms of ethnic identity."

It was important that indigenous peoples retained control over their environment and resources. The most recent United Nations initiatives had borne little fruit; the Sami were now supporting proposals that the UN declare a decade of the indigenous peoples [proposed at the International Human Rights Convention in Vienna in June this year]. Cultural and social developments in the Arctic continued to be confusing; even the various regional cooperation initiatives often seemed to take little account of the indigenous peoples, or to set strict limits on their future participation. And even such apparently innocent measures as the establishment of nature reserves in the Arctic often interfered with traditional livelihoods, the foundation of indigenous culture.

Commentator:

Mr Pekka Aikio, Chairman of the Finnish Sami Parliament

Endorsing and enlarging upon the views of the previous speaker, Mr Aikio said the Sami people insisted that governments "return to the Sami the rights to manage the natural resources in Sapmi and to make decisions in matters affecting the use of the environment...

"The indigenous peoples' right to self-determination, defined at least as cultural autonomy, should be recognized by the nation states... as has the government of Canada with regard to the Nunavut region.

"I will remind you that the Arctic people - on the basis of their traditions through thousands of years - do possess the knowledge of how to use the Arctic environment in a sustainable way."

Modern colonialism

The speaker deplored the "old fashioned" tendency of governments to "establish large protected areas and pass laws which restrict the way of life of the Arctic people". Denying the Sami the right to participate in the management and administration of such reserves smacked

Reindeer Pulling a Sledge. Oil painting *by* David *Klöcker Ehrenstrahl* (1623-90), 1670. Photograph: National Museum of Fine Arts, Stockholm.

of "modern colonialism". He suggested the creation of a Sarni autonomous region, "which would then surely also guarantee the protection of nature..."

Hopeful signs included the current U.N. International Year of Indigenous Peoples (and the proposal for a "decade"), the adoption of ILO Convention 169/89, and the preparation by a U.N. working group of a declaration of rights of indigenous peoples.

Some highlights of the general debate on the Second Theme were as follows.

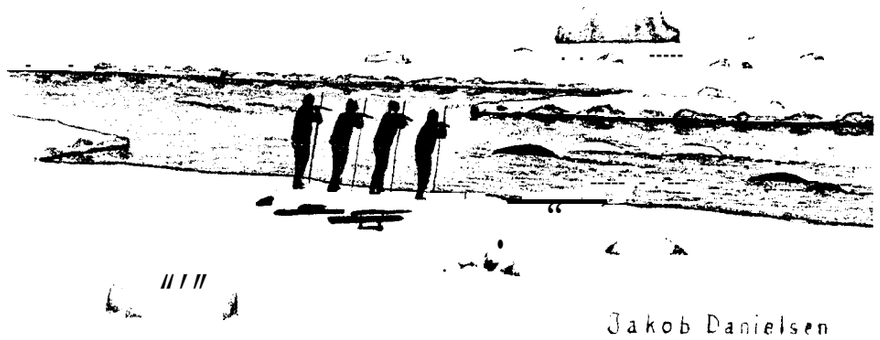
• ***Mr Lee Clark, MP,*** Canada, said he was less optimistic than his compatriot, Ms Stenbaek, regarding the recent progress of Canada's indigenous peoples, because so many had moved from a state of independence to "a large degree of dependency" which was not entirely over yet as they moved toward self rule. This dependency had been learned and would not disappear overnight. Additionally, television, pollution and the international anti-fur campaigns, among other things, had damaged indigenous culture.

• ***Ms Birgitte Husmark,*** Denmark, of the Nordic Council, noted that Home Rule governments, as in the Faeroe Islands and Greenland, were based on a delegation of power from central government in a process similar to that empowering local municipalities and councils. The key to making such arrangements work, she implied, was linguistic freedom, as the language of an indigenous people was the foundation of their culture.

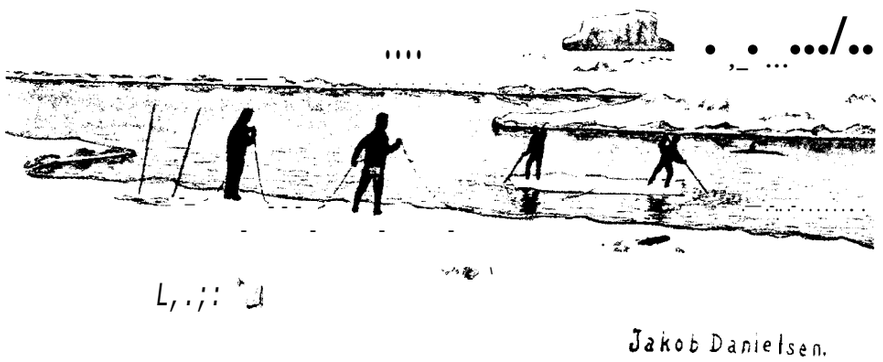
• ***Mr Jonathan Motzfeldt,*** Greenland, of the West Nordic Parliamentary Council, warned of the danger of isolation, often self-imposed, of the North Atlantic area: Greenland, the Faeroe Islands and Iceland.

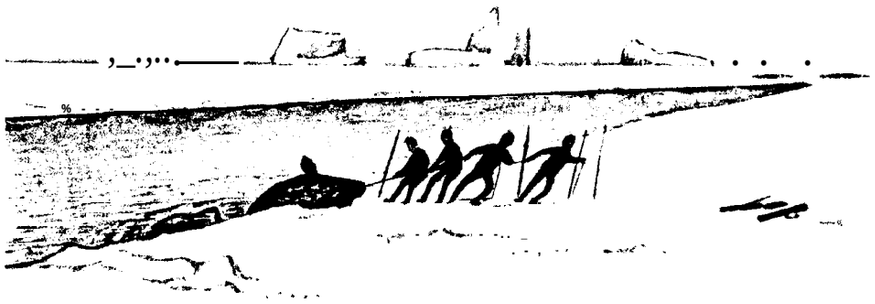
• ***Ms Satu Hassi, MP,*** Finland, noted that the Finns had a linguistic affinity with numerous indigenous peoples; Finnish culture and language were even, arguably, "a branch of Sami". In this context she warned of "ethnocide" among the Khanty and Mansi of Russia, also known respectively as the Ostyaks and Voguls, and whose languages also belong (like Fimish) to the Finno-Ugrian group. With the Nenets, or Samoyed, their traditional living area is the watershed of the rivers Ob and Irtysh in northwestern Siberia.

During a visit earlier this year the speaker observed that these populations are suffering badly, as a result of oppression by the authorities of the former Soviet Union and of continuing exploitation by the gas and oil industry, which has destroyed 110,000 sq. km. of reindeer pasture land, 28 fishing rivers and vast acreages of forest. Mining and timber have also left their mark in the region.

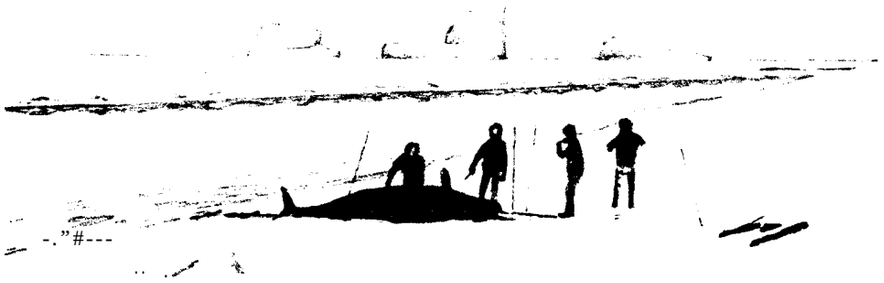


Hunting white whales from the edge of the ice. Series of paintings by *Jakob Danielsen*. Photograph: Ethnographic Collection, National Museum of Fine Arts, Copenhagen.





Jakob Danielsen.



Jakob Danielsen.

The formation in 1990 of the Association of 26 Small Peoples of Northern Russia is seen as a positive step towards the declared aim of "decolonialization" in northwestern Siberia.

• ***Ms Kristín Einarsdóttir, MP,*** Iceland, argued that "cultural diversity" was as important for the well-being of mankind as biological diversity for the environment in general. The Arctic region supported perhaps 40 indigenous groups, some of whom had only recently become known to the Nordic countries. In striving to protect their rights to develop their culture, the importance of women (as in development generally) had to be recognized. This the conference resolution had omitted to do; and among the conference delegates, and in Nordic Council literature, there were far too few women, especially indigenous women, represented.

• ***Mr Per Sævik,*** MP, Norway, stressed the support of the Norwegian government for the work of the United Nations on behalf of indigenous minorities, and hopes for cooperation with the Russian Sarnis.

• ***Ms Maya I. Etteryntyna,*** MP, Russia, said the problems of indigenous populations in the Russian federation were not always understood by outsiders. She herself was a representative of an indigenous people: "I was born on Chicatka... The poor Arctic nations of Russia have complex problems, and their governments do, too."

• ***Mr Hans Dau, MP,*** Sweden, said the Sami now had the power to influence policies of central government, and there had been progress especially on issues of Sami identity. He implied that earlier criticisms of Swedish policies towards the Sami could easily be applied to other Nordic countries; the Swedish Sami Parliament, for example, had been set up according to criteria borrowed from the Norwegians.

• Ms ***Jóna Valgerður Kristjánsdóttir,*** Iceland, of the West Nordic Parliamentary Council, expressed her support for the Norwegian decision to resume the commercial hunting of minke whales: "Hopefully, it will not be too long before we in Iceland do the same."

• ***Mr Martin Uppenbrink,*** director, UN Environment Programme (UNEP), spoke of efforts to establish an Arctic environmental data base for Russia and the Barents Sea region. It was hoped that this might become part of a "circum-polar information system" that would help protect the Arctic environment. He was also hopeful that the World Bank and UNDP would finance several new projects for monitoring the tundra and taiga.

THIRD THEME

Security and de fence issues relating to the Arctic region

Security and de fence issues relating to the Arctic region:

a Norwegian perspective

Mr Johan Jørgen Hoist, Minister of Foreign Affairs, Norway

Arguing that the overriding task in the post-Cold War era was that of drawing Russia - "the single strongest military power in Europe in the foreseeable future" - into Europe, the speaker noted that the Arctic region, the only place where Russia shares borders with western Europe, must itself be "part of the new community of European states".

The issue of Norwegian (and, by implication, Swedish and Finnish) membership in the European Community therefore took on "a broader perspective of security". This was one of several respects in which the significance of the Arctic region had increased since the dissolution of the former Soviet Union.

Russia had lost naval facilities and installations in the Baltic and Black Seas. The Northern Fleet's strategic nuclear force would remain crucial; in fact, the relative importance of Russia's sea-launched strategic nuclear force was likely to increase when the START treaties were implemented. This force was likely to be concentrated on Kola, "Russia's principal naval exit to the world's oceans".

Strategic crossroads

During the Cold War the Nordic countries had been at the centre of the strategic crossroads between East and West. Although a major conflict in this region was now unlikely, weaving a new pattern of cooperation on issues pertaining to security and other challenges in the Arctic region could strengthen the hand of those in Russia who looked to the West for cooperation rather than delimitation. Equally important was a framework for broadening and deepening cooperation between Europe and North America.

The end of the Cold War had in any case removed many of the obstacles to a common security approach to the challenges of the Arctic", which included jurisdictional, environmental and resource management issues as well as military. In that regard, however, "nuclear weapons will remain" and "strategic submarines will continue to patrol the Arctic oceans", albeit in different deployments and in a less confrontational atmosphere. The northern areas would still be "important for strategic early warning and forward air defenses... surveillance and intelligence gathering".

Confidence-building measures, based on the series of incidents at sea agreements concluded during the last phases of the Cold War, would lead to arms control arrangements and regulations that were, however, general rather than specific to the Arctic region.

Substantial military presence

In other words, the strategic outlook for the Arctic included a continuing "substantial" Russian military presence in the region, despite CFE Treaty reductions, and a continued emphasis on Kola as the home port of Russia's most advanced surface and submarine combatants, despite reductions in the overall size of the Northern Fleet. Given such additional geopolitical factors as ice-free ports, access to the Atlantic and proximity to Arctic waters, the region would retain its vital strategic importance to Russia "in much the same way as it did for the Soviet Union".

But Mr Hoist emphasized that new partnerships between Washington and Moscow had transformed if not eliminated former threats and ushered in a new era of cooperative security.

Longyearbyen, a village on the island of *Svalbard.* Photograph: *Lennart Matthiasson, Naturfotograferna.*

The Norwegian perspective

The proximity of the Russian base complex on the Kola peninsula remains one of the main influences on Norway's security policy. "In the context of substantial force reductions in Europe, the strategic emphasis will be on force reconstitution." For NATO the trans-Atlantic sea lines of communication, and therefore Norway's own security, remain vital for such reconstitution. "Security in the North cannot therefore be considered merely as a regional matter. "

Future Norwegian security policy was likely to focus on the EC and the WEU, "the emerging European pillar in NATO", as well as on the traditional transatlantic ties within NATO itself. Norwegian security and incentives for cooperation would increase when, "viewed from Moscow, Russia's relations with Norway are viewed as part of Russia's relations with the European community and not in terms of the relations between the principal heartland power in Europe and a small peripheral state on Russia's border in the North".

New security threats

However far we had come in dealing with traditional threats to security, the gradual opening up of Russia had revealed the enormity of environmental problems in the North. Of particular importance to Norway in this context were the problems related to the ex-Soviet military complex in the Arctic region: the greatest challenge was to rectify "the uncontrolled abuse of a very fragile environment".

The destruction of forests, the creation of man-made deserts, such as those around Nikel and Montchegorsk, and the dumping of nuclear waste at sea, particularly off Novaya Zemlya, must cease, and active steps must be taken to reverse environmental degradation. Monitoring systems and "readiness procedures" are required to deal with radioactive leakage. Commitment and cooperation from all states with interest in the Arctic could help Russia in a new effort to cope cooperatively with common challenges to common interests.

Comprehensive disarmament means new environmental hazards. Priorities include the storage and destruction of nuclear and chemical weapons, and the

The *harbour* at *Ilulissat,* Greenland. Photograph: *Malcolm* l-lanes, *Äventyrsbild.*

safe disposal of decommissioned nuclear power plants and vessels, including spent fuel as well as reactors, for which there is no storage capacity. Cleaning up existing nuclear and conventional pollution is a formidable task in itself.

"One encouraging element in this bleak picture" is recent progress on negotiations on a comprehensive test ban treaty.

Swords into plowshares

The successful conversion of military plants, including the nuclear arms industry, to civilian production was "a prerequisite for the transformation of Russia into a politically and socially stable nation... " Clearly it was in our interests to support this process. But neither Russia nor the Nordic countries combined had the resources to combat the problem in the Arctic region: international organizations like NATO, the NACC, the EC, the G-7, the CSCE and the UN would have to be involved. Norway had sponsored a pilot project within the NACC to study the cross-border environmental problems caused by defence-related activities and installations.

The Rovaniemi process, aimed at building a specially tailored environmental regime for the Arctic, was probably the most relevant of several international treaties addressing environmental problems. Norway attached particular importance to suitable enforcement mechanisms.

In short "Common security means common responsibility."

Other issues

Other issues with security implications included marine jurisdictional delimitations (the recent settlement of the Jan Mayen dispute by the International Court of Justice was an example of a potential cause of political tension and instability that had been defused), management and utilization of natural resources, and utilization of oil and natural gas.

The speaker cited the regulation of the Barents Sea fisheries in accordance with the recommendations of a joint Norwegian-Russian commission as a promising example of management of natural resources. Norway's harvesting of northeast Atlantic minke whales also reflected an ecological approach to resource management, he said.

From *Nuuk,* Greenland. Photograph: Per *Folkver/Ragnarok.*

Inadequate enforcement mechanisms, a frequent problem, had been addressed through various international initiatives such as the current UN conference on straddling fish stocks. The coastal states were also moving against third parties who undermined quota allocations by harvesting fish stocks outside the economic zones. Such problems had now become acute in the Barents Sea... "compounded by the trend towards operating fishing vessels under flags of convenience".

Vital commodities

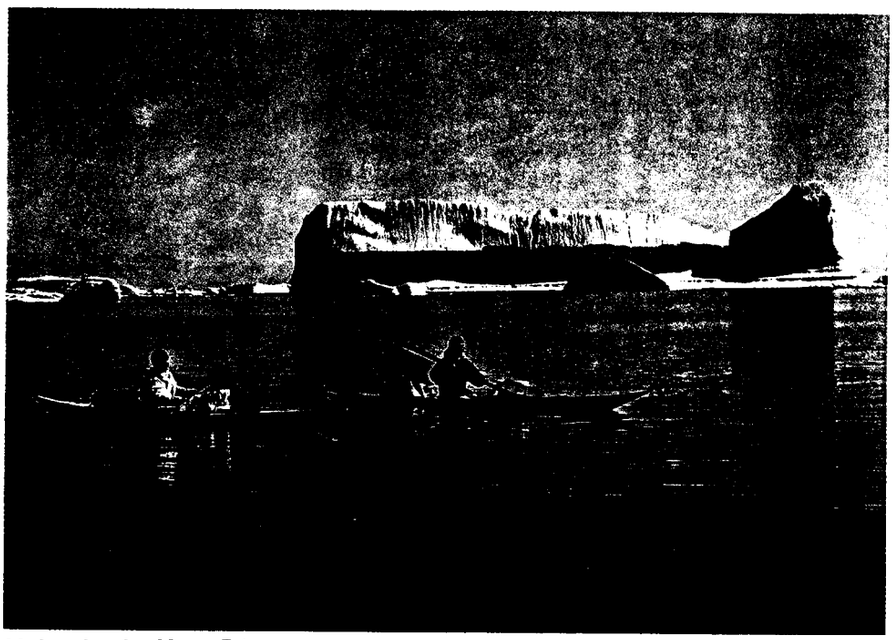
Half of the remaining reserves of oil and natural gas in western Europe are found on the Norwegian continental shelf; these commodities are vital from a strategic and economic point of view. Norway has called for a "Global Energy Policy Interrelationship" to clarify the links between energy, environment and economic development, in a global and regional perspective.

Enormous petroleum reserves on Russia's northern continental shelf represent opportunities for Russian economic development and for cooperation with foreign companies: Norway favours supplying goods and services on a commercial basis for Russian petroleum activity in undisputed areas of the Barents Sea.

New initiatives: the Svalbard example

Before discussing new cooperation initiatives, the speaker adduced Svalbard, and in particular the Svalbard Treaty of 1920, as an instructive example. The treaty was "of crucial importance to security and stability in the Arctic". Despite recognition of Norway's "full and absolute sovereignty over the archipelago of Spitzbergen", all parties to the treaty nevertheless have the right to "most kinds of economic activity, including exploitation of natural resources, on an entirely equal footing with Norwegian nationals." Fisheries are regulated in a non-discriminatory reamer within a 200-mile conservation zone. Norwegian-Russian relations on Svalbard are good.

The Northern Sea Route, also known as the Northeast Passage, was opened formally for international navigation in 1990 following an initiative by President Gorbachev in his Murmansk Declaration of 1987. Implications for strategy and security were among the aspects of this initiative currently being studied.



Modern kayaks. *Narsaq Foto.*

Among other recent measures, the Norwegian initiative that resulted in the creation of the Barents Euro-Arctic Region was one that "should be viewed in the context of weaving a new web of cooperative arrangements which would enhance security and stability in the Arctic region". The Norwegian government also welcomed the Canadian proposal to establish an Arctic Council.

Commentator

Mr Franklyn Griffiths, Professor of Political Science, Toronto, Canada

The speaker took vehement issue with some of Mr Hoist's remarks, citing in particular the Norwegian's assumption that, in Mr Griffiths' paraphrase, "nuclear weapons systems will remain in Arctic waters on ballistic-missile-firing sub marines... for a good deal of time, that Russia will seek to protect a bastion, that is, some way of seeing that its sea-based nuclear weapons survive in Arctic waters". There had been confusion, Professor Griffiths said, between issues of national and collective security, which were not the same, the former being the traditional view. "On all of these matters I would ask: is this not old thinking and should we not be thinking afresh? I ask these questions not rhetorically but with respect.

"We in the Arctic should ask more; we should not allow the Arctic as a region to be marginalized the way it has, to be in this case a kind of Jurassic Park for perpetual interplay of nuclear forces which we will not have closer to home.

"Europe is being denuclearized in various ways, as are Russian and American relations; but the Arctic remains a backwater from the point of view of southern decision-setters on security matters. This is not the way the Arctic should be treated... as a marginal area or a frontier zone where you can do things roughly and in a harsh way that you wouldn't do closer to home.

Fishing, Greenland. *Narsaq Foto.*

"The Arctic needs to be regarded with a greater respect. I think the navies who will insist on mobility and no compromise of their manoeuvrability at sea should be challenged in the Arctic. Why should they, just because they want to sail elsewhere, freely be allowed to do the kinds of things that are destabilizing and troubling Arctic waters? What is the purpose of Russian SSBNS, ballistic-missile-firing submarines, in Arctic waters? I can see bureaucratic and institutional purposes. But this to me is an inadequate rationale for the maintenance of strategic nuclear weapons in the Arctic. One should be more critical of nuclear weapons in the Arctic, and less acquiescing."

It was a questionable assumption, the speaker continued, "that we can have some old-style security of a military kind and yet get on with our new security agenda that has to do with resource management, jurisdictional problems, the environment above all. I suggest to you that these two forms of security do not mix that well . ..."

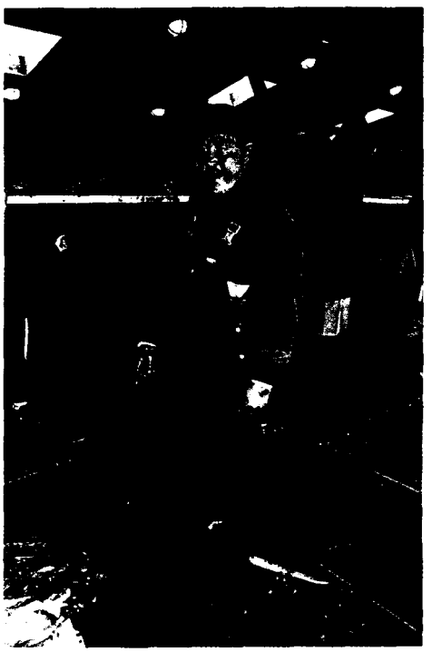
Thanking President Clinton

The speaker proposed that the conference send a short note to President Clinton thanking him for his restraint on the question of nuclear weapons testing as it affects the Arctic. The American President had performed "a great service" in refraining from testing nuclear weapons and in so doing had made it possible for Russia also to refrain from such testing in the Arctic.

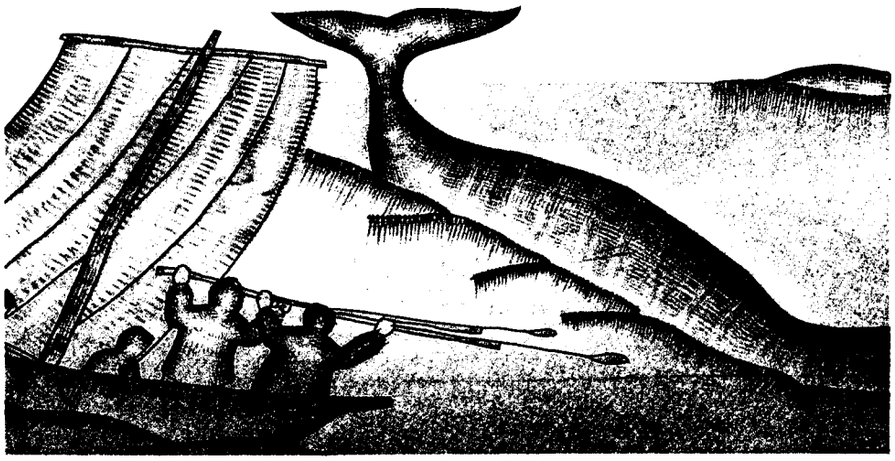
Mr Griffiths added: "One of the reasons the Americans are not here is that they do not see a great deal of interest in the Arctic." If the conference were to write this thank-you note, "we might at the next meeting have an American presence".

Mr Hoist's reply

Offered an opportunity to reply to Mr Griffiths, the Norwegian Foreign Minister said mildly that he did not think they were in fact very far apart; but one problem with making the Arctic region a nuclear free zone was that "these things



Cutters at *the fish* and meat market in *Nuuk,* Greenland. Photograph: Malcolm *Hanes, Äventyrsbild.*



Painting on walrus *tusk, from Tjukotka.*

take time". It took much longer to get rid of nuclear weapons than to acquire them in the first place.

Among the highlights of the general debate on the third theme were the following.

• ***Mr Alexander A. Veshnjakov,*** MP, Russia, also regretted the absence of the United States from the conference, which was "impoverished" as a result. He supported Mr Griffiths' proposal to thank President Clinton, and further proposed that a similar letter be sent to the Russian leadership. Restraint on nuclear testing was one of several recent developments demonstrating that Russia was "moving out of murky waters to which we hope never to return": others mentioned by this speaker were the formal opening of the Northern Sea Route and the Jablokov report on nuclear waste.

• ***Mr Lyle Kristiansen, MP,*** Canada, spoke of the environmental problems exemplified by the 1300 sqkm Hanford Reservation, which he described as the largest radioactive waste site in the world, in the state of Washington, which borders Canada. Hanford was also one of the dirtiest and one of the oldest such sites, dating from the Manhattan Project. More positively, the site was "a laboratory on a vast scale" and a golden opportunity to work with the Russians on the technical and scientific aspects of nuclear waste disposal.

• ***Mr Anders Mølgaard,*** Denmark, of the Nordic Council, reminded the conference that the militarization of the Kola peninsula had not ceased and might even increase, as troops withdrawn from the Baltic states, for example, tended to concentrate there.

Painting on walrus *tusk, from Tjukotka.*

Painting on walrus tusk, from *Tjukotka.*

• ***Mr Ilkka Suominen,*** Finland, of the Nordic Council Presidium, noted that Mr Hoist had failed to mention gas and oil extraction in the Arctic as the huge environmental /security threat that it was. Mr Suominen also expressed his lack of enthusiasm for the Northern Sea Route, on the grounds that in the near future the investment required to maintain it could not be justified by the tonnage that could be shipped through it. He was nervous, too, about recent military build-up near the Finnish border, which he hoped was a passing phase. He supported the proposals to thank Presidents Clinton and Yeltsin for their joint restraint on nuclear weapons testing.

• ***Mr Hjörleifur Guttormsson, MP,*** Iceland, was also disappointed at the "old fashioned and conventional" approach, "lacking in vision", taken by Mr Hoist. The continuing presence of nuclear weapons in the Arctic was bound to end in "catastrophe", whether military or environmental. "The powers in the South have too much say in the policies of the North", Mr Guttormsson declared, and asked Mr Hoist rhetorically: "Who is the enemy?"

• ***Ms Helena Dam a Neystabø,*** Faeroe Islands, of the West Nordic Parliamentary Council, worried that there was a tendency to become preoccupied with the East, Russia, at the expense of the West, the speaker's constituency.

• ***Mr Geir H. Haarde,*** Iceland, Nordic Council Presidium, suggested that any letter to

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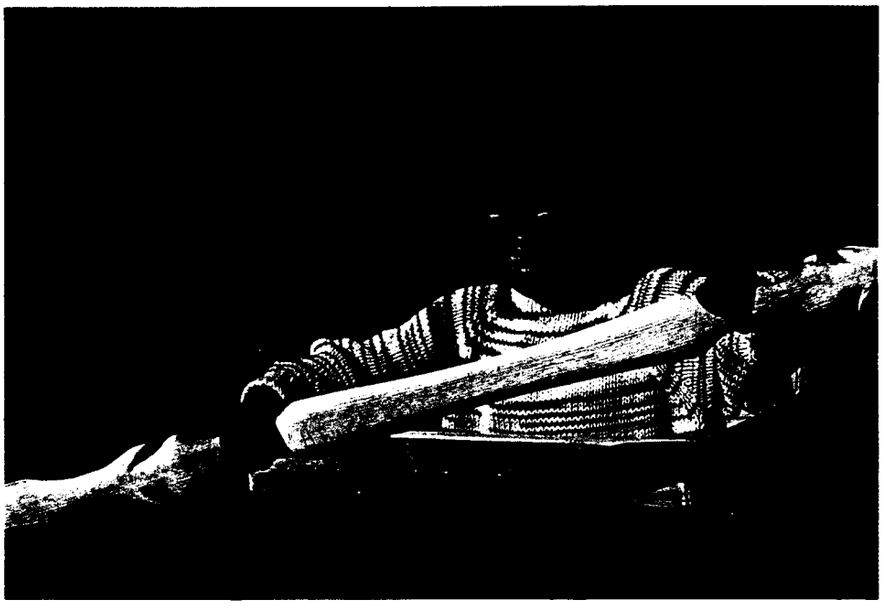


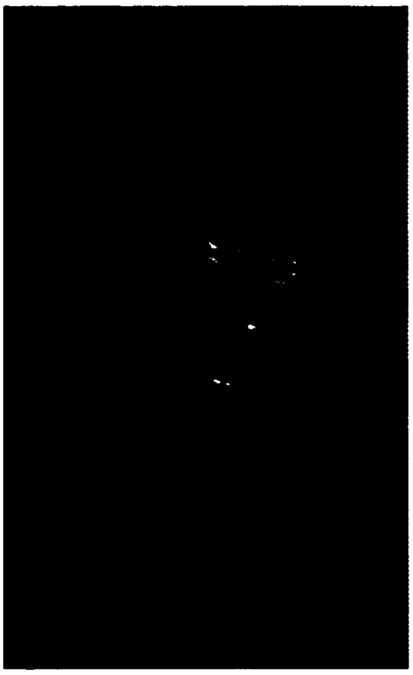
Photograph: G. *Planchenault, Äventyrsbild.*

President Clinton include an explicit invitation to join future deliberations on the Arctic region.

• ***Mr Charles L. Caccia,*** P. C., MP, Canada, joined previous speakers in deploring what he described as "the NATO flavour" of Mr Hoist's remarks. There were dangers in the premise of that speech, he said. He also feared that environmental consequences of using the Northern Sea Route might prove unacceptable.

Mr Hoist replies

Replying to this latest round of criticism, Mr Hoist reiterated that dismantling military arsenals would take many years; new post-Cold War structures had yet to emerge, and in the meantime international relations would continue to be shaped by competition. "You don't start with a **tabula** rasa", he said. Nor could you predict how future Russian governments might choose to use their enormous supplies of weapons.



Greenlander. Photograph: *Ivar Silis, Qaqortoq.*

FOURTH THEME

The institutional frameworks for cooperation in the Arctic region

1. Governmental cooperation

The Barents cooperation, a regionalization project in the Euro-Arctic region

Mr Johan Jørgen Hoist, Norwegian Minister of Foreign Affairs

Reiterating his view that some of the greatest security-policy challenges facing the Nordic area were related to developments in eastern Europe, and that the priority of the cooperative institutions must now be "to assist in moving Russia closer to Europe", Mr Hoist said it was vital to take the offensive rather than merely "adapt to the results of other countries' decisions".

The establishment of the Baltic and Barents cooperation councils was therefore an expression of a Nordic willingness to play an active part and indicative that the societies of the North are willing to consider new patterns of interaction.

A Europe of diversity

Focusing on the Barents initiatives, and noting that "a Europe of diversity is now in the process of being created", Mr Hoist saw regional cooperation as the key to controlling the potentially divisive interplay between nation-building in the East and integration in the West. In short "In shaping the new Europe, we shall need to develop a wider community than that of the nation state" - but "to supplement and provide a framework for individual states, not to replace them".

The Barents cooperation was above all "a European venture". The European Community, which had tended to concentrate on southern Europe, faced the challenge of developing a "Euro-Arctic strategy" just as it had a Mediterranean policy. A special report on the Nordic area recently commissioned by the EC as a follow-up to the report Europe 2000 raised hopes for a more active interest in the region on the part of the EC, if only in pursuit of a coherent policy for developments in northwestern Europe. Before long Russia's border with Europe in the Barents and Baltic regions would be the only borders between Russia and the European Economic Area (EEA) or the EC itself. The Barents cooperation, "a model for East-West cooperation at the regional level", would link the EEA and EC countries with northwestern Russia.

International leverage

In fact, the problems of the region - in particular, in Russia, the storage and disposal of nuclear waste and the decommissioning of nuclear submarines - probably required cooperation, expertise and resources that could not be mobilized in the Barents region alone, but which must be sought in the USA, Japan and the EC as well. The Barents cooperation, in this context, would add political leverage to any regional calls for such help.

Historically, Nordic cooperation had tended to be an internal affair, seldom involving relations between the Nordic countries and their surroundings. It was precisely these relations that could be developed in the years ahead. Nordic cooperation had already played a big part in Baltic developments; in March this year, the Nordic prime ministers, meeting in Oslo, had declared their intention of repeating this experience in northwestern Russia - i.e., in the Barents region.

The Norwegian MP Karl-Erik Schjøtt Pedersen had recently proposed the establishment of a parliamentary assembly for the Baltic region, an initiative that by implication might be taken up in the Barents region, which had yet to see any parliamentary conferences such as those held in the Baltic. The Barents Council was already the only permanent forum in which all the Nordic countries meet with Russia at the political level. Canada and the USA should also become involved in the Barents cooperation, if only because of their economic and strategic interests.

Painting on walrus *tusk, from Tjukotka.*

Economy and environment

Other speakers had observed that most of the opportunities related to the exploitation of the rich natural resources of the region, notably energy, minerals and fish, are long-term ones, Mr Hoist said; whereas many of the problems were all too present. Not only did the various Barents initiatives address these problems, primarily atmospheric pollution and nuclear contamination; but Russian emphasis on economic cooperation had also been combined with Nordic emphasis on environmental cooperation, so that "Although our priorities differ, we are all prepared to find compromises that incorporate both elements. "

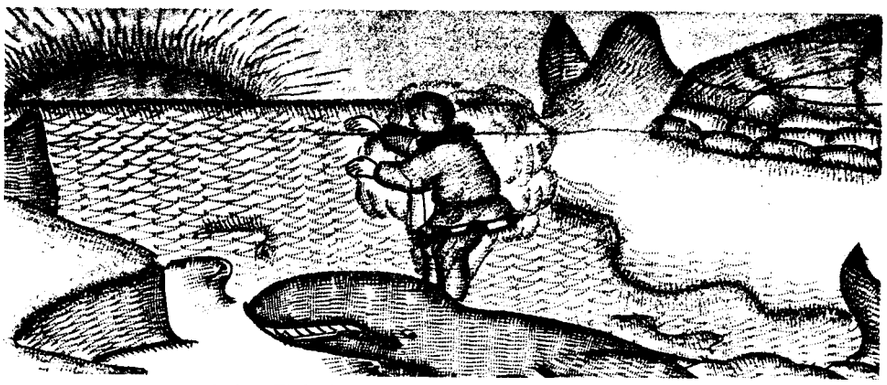
Organization of the Barents cooperation

The Barents Council is a ministerial council, primarily for foreign ministers; but other ministers are welcome, as are "all countries . . . interested in meeting the regional challenges and taking advantage of the opportunities, as set out in the Kirkenes Declaration of January 1993". The council currently comprises representatives of the Nordic countries, Russia, and the EC Commission; seven European and North American countries, and Japan, take part as observers.

As the Barents Council is primarily intended to deal with issues that cannot be solved locally, the principle of subsidiarily is an important aspect of Barents cooperation as well.

A Regional Council has been established comprising representatives of the eight Nordic and Russian counties north of the Arctic Circle, plus a representative of the indigenous peoples, in order to ensure that the cooperation serves the interest of all those who live in the region.

The speaker noted that almost NOK 0.5 billion had been made available for project assistance to Russia and Eastern Europe in 1992-93, with first priority to the Barents



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and then to the Baltic regions. The European Bank for Reconstruction and Development (EBRD) had also expressed "a keen interest" in the Barents cooperation.

A busy year

During the rest of this year alone, the Barents Council had already scheduled meeting for ministers of culture, of transport and communications, and of environment. Foreign trade, research, education and health meetings were planned, and a working group on the Northern Sea Route had been established.

International cooperation in the Arctic - the Arctic Council

Senator Raynell Andreychuk, head of delegation, Canada

The Arctic Council, proposed in 1989 by Canada, would comprise the eight governments of the region and would address the environmental, economic and social aspects of sustainable development in part by recognizing the interrelationship of the Arctic environment and peoples, Ms Andreychuk said.

Common objectives in trade, development, science and technology, energy, transportation, environmental conservation and resource management would benefit from a flexible approach based on consensus. Canada had insisted that northern Aboriginal NGOS such as the Sami Council and the Association of Aboriginal Peoples of Northern Russia be involved not as observers but as permanent participants.

Ministerial level

The council would meet annually at ministerial level or at senior officials level in one of the member countries in rotation. Each government would identify a coordinator; initially Canada would maintain a small secretariat. Observers would be invited as appropriate.

Most of the Arctic states had supported the initiative; but there was "general agreement that the Arctic Council could only live up to its full potential with the participation of all eight governments". Participation by the United States government, currently reviewing its Arctic policy, would be welcome.

Painting on walrus tusk, from Tjukotka.

New era

In the speaker's view, "the new era of Arctic cooperation" dated from Gorbachev's Murmansk Declaration of 1987: previously, bilateral rather than multilateral cooperation had been the rule in the Arctic, one partial exception being the Nordic Council, which had been actively promoting common policies on regional issues for four decades.

Subsequent milestones included the creation of the International Arctic Science Committee (IASC), the launch of the Rovaniemi initiative by the Finnish government, the adoption of an Arctic Environmental Protection Strategy (AEPS), and establishment of the Northern Forum, uniting territorial governments in the region. The creation in January this year of the Euro-Arctic Barents Council marked another important step on the road to pan-Arctic cooperation.

Transboundary issues

The environment was perhaps the most obvious of the various transboundary issues in the Arctic. Recognition of its complexity and international character had grown from the Stockholm Conference of 1972 through the Brundtland Report of 1987 to the Rio Conference of 1992. The Arctic Council proposal was born of Canada's "long experience dealing with northern environment and development issues and... its strong tradition of multilateralism in foreign policy".

The Arctic, Ms Andreychuk continued, comprised about 40 per cent of Canada's total landmass, more than 30 per cent of its freshwater resources and two thirds of its marine coastline. But Canadians living in the Arctic, mainly indigenous peoples, accounted for less than one per cent of the population.

'Commitment to the Arctic

Despite Prime Minister Diefenbaker's call during the fifties for a "Northern Vision", it was not until 1973 that the Canadian government began to introduce what Canadians now see as landmark legislation for protecting the Arctic environment the Territorial Lands Act, Northern Inland Waters Act, Offshore Dumping Control Act and Arctic Waters Pollution Prevention Act. Canada's Green Plan and Arctic Environmental Strategy, of 1990 and 1991 respectively, reinforced the Canadian commitment to the Arctic.

"In the Canadian case, I would argue, the key to environmental and other progress lies in cooperation between the indigenous peoples of the Arctic and the federal and territorial governments." After 17 years of progressive devolution of federal responsibilities to the respective territorial governments, and of negotiations over indigenous land claims, Inuit leaders this year had presented the Nunavut land claim to the federal government. An agreement had been signed to create the terntory of Nunavut in the eastern Arctic by 1999. Nunavut would comprise more than a fifth of Canada's land mass, and its majority Inuit population would have "effective political control over its homeland".

2. Parliamentary cooperation

Parliamentary cooperation in the Arctic region

Ms Birgitta Dahl, MP, Sweden

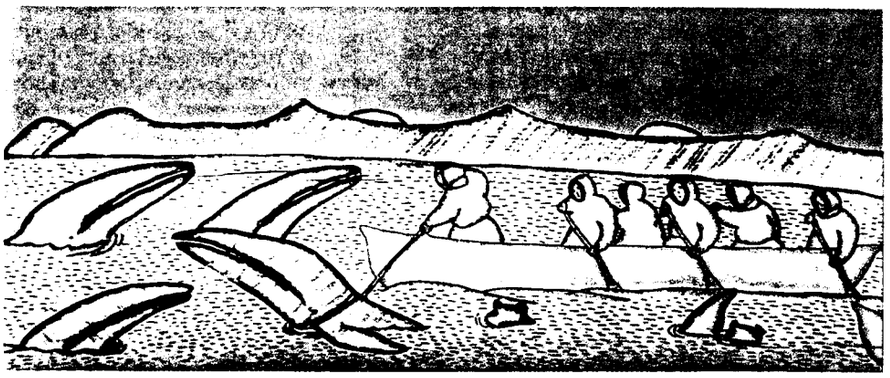
Ms Dahl called for a new body comprising all parliaments, governments and peoples in the region. Although Parliamentary participation was the key to Arctic cooperation, existing institutions were "driven mainly without parliamentarian influence", notwithstanding that parliaments were required to monitor and approve formal agreements between governments. Nor were existing parliamentary bodies, such as the Council of Europe and the Nordic Council, adequate - because their geographical range was by definition too restricted.

Democratic deficit

Emphasizing, as had so many other speakers, the breadth and severity of environmental problems in the Arctic, the speaker continued: "In my opinion there is a risk of a democratic deficit in the future political development of the Arctic region if the parliaments and parliamentarians are not active parts of the process." In particular, a number of severe conflicts - the whaling issue was one example, mammoth bridge-building projects another - required contribution by elected parliamentarians. Even within the EC there was evidence of the ways in which this democratic deficit created tension between parliaments and the Commission, and public distrust of the Commission.

Some parliamentarian involvement was, of course, possible through various agencies of the United Nations (the General Assembly, ECOSOC, FAO, CSD, HLAB, UNEP); and the UN Economic Commission for Europe would continue to play a very important role in regional environmental cooperation. The Council of Europe and the Conference on Security and Cooperation in Europe (CSCE) were also relevant to the Arctic. The CSCE, Ms Dahl added in a vehement aside, "is not obsolete but a very much needed body!"

Noting with approval the proposal in the conference's draft resolution that a Standing Committee of Parliamentarians of the Arctic Region be established, she urged that dialogue continue towards agreement on a future framework for cooperation, possibly the Arctic Council, including both governments and parliamentarians. But she warned of the need to avoid "duplication and distortion".



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The spirit of Reykjavik

Mr Valentine A. Agaphonov, MP, Russia, head of delegation

Mr Agaphonov reminded the conference that the Barents Declaration, drafted in the Norwegian town of Kirkenes in January this year, called for a series of concrete measures in the post-Soviet European Arctic. These, the speaker said, included joint exploration of natural resources, including oil and gas; the protection and restoration of the environment; the conversion of defence industries to peaceful uses, such as the installation of telecommunications, offshore and shipbuilding industries; the creation of favorable conditions for joint ventures, and solutions to the economic and cultural problems of the indigenous peoples.

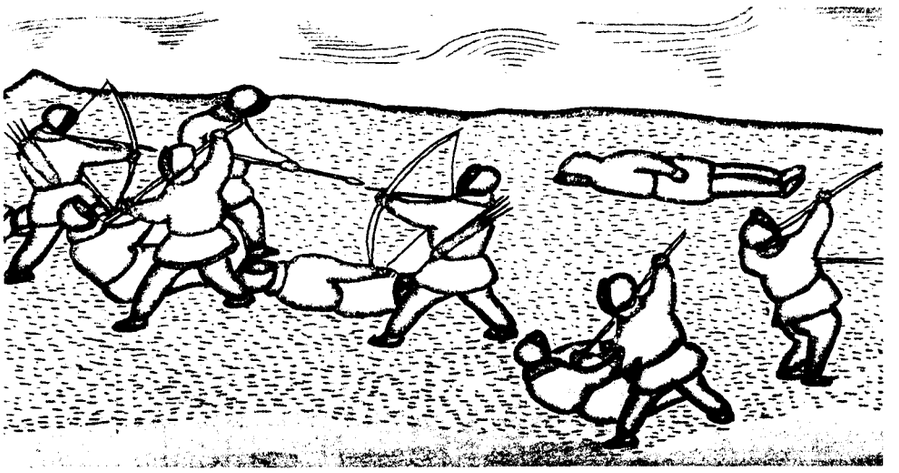
The end of the Cold War and of the division of Europe had made new cooperative ventures possible, but not always easy: regional conflicts and economic disparities were among the remaining obstacles. But the problems of the Arctic should not be unduly dramatized.

In a reference to the Reagan-Gorbachev summit, Mr Agaphonov said the spirit of Reykjavik, site of the world's oldest parliament, had changed the course of history by preparing the way for an abolition of nuclear weapons.

3. Regional and research cooperation

Three speakers made short presentations on this topic.

• ***Mr Erling Fløtten,*** leader of the Regional Council of the Barents Region, thanked the Nordic Council for the support it had given one of the earliest regional bodies in the Arctic, the Nordkalott Committee, established in 1972. The Barents initiative represented a new development in that it welcomed counties from northern Russia as full members, was open to cooperation with other nations, and generated increased funding from the participating governments.



Painting on walrus *tusk, from Tjukotka.*

The Regional Council, with its secretariat in Kirkenes, comprises nine members eight county representatives and one representing indigenous peoples. Among the various initiatives taken at its second meeting in Murmansk in April this year was a grant to improve road connections between Salha and Alakurthi. There are no women represented on the Regional Council at present; a reasonable balance of the sexes is a priority.

• ***Professor Anders Karlqvist,*** International Arctic Science Committee (IASC), asked why Arctic research cooperation was so difficult when its relevance to the needs of the region was so obvious. One reason was organizational: no regional or international scientific body had concentrated exclusively on the Arctic, in contrast to the Antarctic, where SCAR (the Scientific Committee for Arctic Research) had functioned admirably since the late 1950s. The International Arctic Science Committee (IASC) was a response to this need. The speaker described the Nordic countries collectively as "a superpower" in polar science.

• ***Mr Harald Bollvåg*** of the Northern Forum described the Forum as an international circumpolar organization founded in 1991 after proposals made at the third Northern Regions Conference in Anchorage, Alaska, where the body had its headquarters. It is still growing; for the time being its members include most of the northern provinces and territories of Canada, Hokkaido (Japan), Heilongjiang (China), Domod (Mongolia), Finnish Lapland, Sør Tronndelag (Norway) and five Siberian regions. Additional counties or regions in Russia, Sweden and Finland, plus Greenland and Iceland, have been invited to join. The first Northern Forum conference was to be arranged in Tromsø in September-October this year, in conjunction with the fifth World Wilderness Conference.

General debate

Among the points made during the general debate on the Fourth Theme:

• ***Mr Eiður Guðnason,*** MP and former Minister of Environment, Iceland, supported the proposal in the draft resolution to establish a Standing Committee of Parliamentarians of the Arctic Region. The Norwegian initiative to establish the Barents Council was also an important step towards creating an adequate institutional framework; "but by nature it may be too narrow and local in focus and purpose to serve the whole region".

• ***Ms Jóna Valgerður Kristjánsdóttir,*** Iceland, of the West Nordic Parliamentary Council, said the time had come for the small western Nordic nations and indigenous groups to exert more influence in Arctic affairs, and for the United States to become involved.

• ***Mr Esko-Juhani Tennilä, MP,*** Finland, called for improved railway communications in the North, which in turn would help in operating the Northern Sea Route.

• ***Senator Daniel Phillip Hays,*** Canada, supported proposals for the Arctic Council, which he said might also enforce "a code of environmental conduct" for the region in much the same way that GATT imposed standards of economic behaviour on its members.

Summing up

The conference ended with a brief discussion of the final document, and a summing up by Ms Kirsti Kolle Grøndahl as chairman of the drafting committee.

She said the document emphasized the need for peaceful cooperation in the Arctic region, guided by principles of sustainable development, reflecting the views of parliamentarians. The final document did not mention the fishing dispute between Iceland and Norway, the commercial whaling issue, or the last-minute refusal of the United States to participate - which, however, the conference regretted.

Mr Halldór Ásgrímsson, chairing the final session, said the proposals for thanking the Americans and Russians on the nuclear testing issue would be taken up in Presidium. It was likely the proposals would be accepted and the letters written "in an agreeable manner".

Festival dancing. *Painting from Tjukotka.*

Programme

The Nordic Council's Arctic Conference

Time / Venue: **Háskólabíó** and Saga Hotel, **Reykjavik,** Iceland -16-17 August 1993

Sunday 15 August

1700-1900 Registration, Saga Hotel
1930 Dinner, hosted by the Presidium of the Nordic Council, Restaurant "Perlan"

Monday 16 August

0830-0900 Registration, Saga Hotel

0900-0930 Opening Ceremony in the presence of The President of Iceland, Ms *Vigdís Finnbogadóttir*:
The President of the Nordic Council, Mr *Jan* P. Syse
Artistic item

0930-1200 First theme:
Natural resources, environment and the development of trade and industry
Introductory Speakers:
Dr. E. Fred Roots: The Arctic region - Challenges and opportunities
Senior Advisor *Heikki Sisula:*
Environmental challenges in the Arctic region
Director *Jakob Jakobsson:*
Development of trade and industry in the Arctic region - Challenges and limitations

Prepared comments and general debate

1200-1300 Lunch

1300-1415 Continued debate on first theme

1415-1715 Second theme:
The situation for the indigenous peoples of the Arctic region
Introductory speech:
Professor Robert Petersen, Greenland

Prepared comments and general debate
Commentators:
Director Marianne *Stenbaek,* Canada
Member of the Norwegian Sami Parliament, Mr *Alf Nystad*
Chairman of the Finnish Sami Parliament, Mr *Pekka* Aikio

1715-1815 Statements from invited observers

1815-1945 Drafting Committee

2000 Dinner, hosted by the Government of Iceland, Saga Hotel

Tuesday 17 August

0900-1200 Third theme:
Security and defense issues relating to the Arctic region
Introductory speech:
Norwegian Minister of Foreign Affairs, Mr *Johan Jørgen* Hoist

Prepared comment and general debate
Commentator: Professor *Franklyn Griffiths,* Canada

1200-1300 Lunch

1300-1500 Fourth theme:
The institutional frameworks for cooperation in the Arctic region
1. Governmental cooperation
The Euro-Arctic Barents Council by Norwegian Minister of Foreign Affairs, Mr *Johan Jørgen* Hoist

The Arctic Council by Senator *Raynell Andreychuk,* Canada

2. Parliamentary cooperation
   Representative of the Russian Parliament
3. Regional and research cooperation
   Chairman of the Finnmark County Council and Representative of the Regional Council of the Barents Region, Mr *Erling* Flatten
   Representative of The International Arctic Science Committee, Professor Anders *Karlqvist*
   Representative of the Northern Forum, Mr *Harald Bollvåg*

General debate

1500-1600 Drafting committee

1600-1630 Summing up of the conference and approval of the Final Document
Concluding address by Member of the Presidium of the Nordic Council, ***Mr Halldór Ásgrímsson,*** Iceland

List of Participants

Special Invitees

Ms Vigdís Finnbogadóttir, The President of Iceland

Speakers and commentators

Mr **Pekka** Aikio, Chairman of the Finnish Sami Parliament
Ms **Raynell** Andreychuk, Senator, Canada
Mr **Harald Bollvåg**, The Northern Forum
Ms **Birgitta Dahl**, MP, Sweden
Mr **Erling** Flatten, Leader of the Regional Committee of the Barents Euro-Arctic Region, Norway
Mr **Franklyn Griffiths**, Professor, Department of Political Science, Toronto, Canada
Mr Johan **Jørgen** Hoist, Norwegian Minister of Foreign Affairs, Norway
Mr **Jakob Jakobsson**, Director, Institute of Marine Research, Iceland
Mr Anders **Karlqvist**, Professor, International Arctic Science Committee (IASC)
Mr **Alf** Nystad, Member of the Norwegian Sami Parliament
Dr E. Fred Roots, Chairman of the Council of International Arctic Science Committee, Canada
Mr Robert Petersen, Professor, University of Greenland, Denmark
Mr Heikki **Sisula**, Chairman of Arctic Monitoring and Assessment Programme, Finland
Ms Marianne Stenbaek, Director General, International Polar Institute, Canada

Parliamentary Assemblies

Canada
Ms **Raynell** Andreychuk, Senator, Head of the Delegation
Mr Charles L. **Caccia**, P. C., M.P.
Mr Lee Clark, MP
Mr Daniel Phillip Hays, Senator
Mr Lyle **Kristiansen**, MP
Ms Suzanne **Verville**, Secretary to the Delegation

Denmark
Mr **Niels Højland**, MP
Mr Steen Gade, MP
Mr Svend Erik **Hovmand**, MP
Ms **Grethe** Madsen, Executive Secretary

Faeroe Islands, Denmark
Mr **Jørgen Thomsen**, MP

Greenland, Denmark
Mr Peter **Ostermann**, MP

Finland
Ms Eva **Biaudet**, MP
Ms Satu **Hassi**, MP
Mr Timo **Korva**, MP
Mr **Esko-Juhani Tennilä**, MP

Iceland
Ms Kristin **Einarsdóttir**, MP
Mr **Eiður Guðnason**, MP
Mr **Hjörleifur Guttormsson**, MP
Ms **Valgerður Sverrisdóttir**, MP
Ms **Sigríður** Anna **Þórdardóttir**, MP

Norway
Mr **Gunnar Skaug**, MP
Mr Per **Sævik**, MP
Mr Leiv **Stensland**, MP
Mr Ole Gabriel **Ueland**, MP

Russia
Mr Valentine A. Agaphonov, MP, Head of the Delegation
Mr Vladimir **Warfalamijiw**, MP
Mr Alexander A. Veshnjakov, MP
Mr Valery I. **Gerassimov**, MP
Ms Maya L **Etteryntyna**, MP
Mr Victor L **Vassiljev**, MP
Mr Guennadi Pavlov, Counselor of the Embassy of Russia, Iceland
Mr **Aleksi Nikolajev**, Interpreter

Sweden
Ms **Birgitta Dahl**, MP
Mr Hans Dau, MP
Mr Per **Ola Eriksson**, MP
Mr **Åke Selberg**, MP

Sami parliaments
Mr **Pekka Aikio**, Chairman, Sami Parliament, Finland
Mr Alf **Nystad**, Sami Parliament, Norway

The ***West Nordic Parliamentary Council***
Ms Helena Dam **á Neystabø**, Faeroe Islands
Ms **Jóna Valgerður Kristjánsdóttir**, Iceland
Mr Jonathan **Motzfeldt**, Greenland

European Parliament
Ms Cliodhna Dempsey, Principal Administrator

The Nordic Council

The Presidium
Mr **Ilkka Suominen**, Finland
Mr Mats Nyby, Finland
Mr Geir H. Haarde, Iceland
Mr **Halldór Ásgrímsson**, Iceland
Ms **Kirsti Kolle Grøndahl**, Norway
Mr Jan P. **Syse**, President, Norway
Ms Tora **Aasland** Houg, Norway
Mr **Elver Jonsson**, Sweden

Members of the Nordic *Council*
Ms Dorte Bennedsen, Denmark
Ms **Birgitte Husmark**, Denmark
Mr Anders **Mølgaard**, Denmark
Ms **Sinikka Hurskainen**, Finland
Mr **Håkan** Nordman, Finland
Ms Eeva **Turunen**, Finland
Ms Rannveig **Guðmundsdóttir**, Iceland
Mr Ami M. **Mathiesen**, Iceland
Mr Svein Alsaker, Norway
Mr Thor-Eirik **Gulbrandsen**, Norway
Ms Marianne **Andersson**, Sweden
Mr Per Olof **Håkansson**, Sweden

Observers from international organizations
Mr **Harald Bollvåg**, The Northern Forum
Mr **Erling** Flatten, Leader of the Regional Committee of the Barents Euro-Arctic Region
Mr **Arnór Halldórsson**, North Atlantic Marine Mammal Commission (NAMMCO)
Mr Lassi Heininen, Arctic Centre, Finland
Mr Anders **Karlqvist**, Professor, International Arctic Science Committee (IASC)
Mr Lars **Kullerud**, Systems Analyst (GRID-Arendal, Norway), UN Environment Programme (UNIX')
Sir Michael Marshall, President, Inter-Parliamentary Union (IPU)
Lord **Newall**, Committee on Environment Regional Planning and Local Authorities, Parliamentary Assembly of the Council of Europe
Mr R. Spencer Oliver, Director, Parliamentary Assembly of the Conference on Security and Cooperation in Europe (CSCE)
Mr **Páll Pétursson**, Member of the Icelandic Delegation to the Committee of Parliament of the European Free Trade Association (EFTA)
Mr Martin Uppenbrink, Director, UN Environment Programme (UNEP)

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Mr Lars Hedegaard, Editor in Chief, Nordic Institute for Regional Policy Research
Mr Jouko **Juhani Jama**, Secretary General, The North Calotte Committee
Ms Irja **Seurujärvi-Kari**, Lector at the Helsinki University, Sami Council, Finland
Mr Lars-Nils Lasko, Head of Department, Nordic Sami Institute, Norway
Ms Riitta Mansukoski, Special Researcher, Ministry of Trade and Industry, Finland
Mr Par **Stenbäck**, Secretary General, The Nordic Council of Ministers
Mr Noralv **Veggeland**, Director, Nordic Institute for Regional Policy Research
Mr **Johán** H. Williams, Fisheries Counselor, The Nordic Council of Ministers

Mr Bjom **Bjarnason**, MP, Iceland
Mr **Toshiyasu Ishiwatari**, Professor, Nihon University, Japan
Mr **Magnús Magnússon**, Professor, Iceland University
Ms Patricia **Low'Bédard**, Canadian Department of External Affairs
Mr Eugene D. **Schmiel**, Chargé d'Affaires, U. S. Embassy

Reporter
Mr Tony **Samstag**, Free Lance Journalist

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Mr Jostein **Osnes**, Secretary General and Head of the Secretariat
Mr Ove **Caspersen**, Head of Information
Ms **Elin** P. **Flygenring**, Secretary, Cultural Committee
Mr **Svenolof Karlsson**, Editor, Nordic Council Publications
Ms Viveca **Lindfors**, Administrative Officer
Mr **Göran** Lundberg, Secretary, Environmental Committee
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Mr **Bjørn** Andreassen, Senior Executive Officer, The Nordic Council, Norway
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Mr **Henrik** Hagemann, Secretary General, Nordic Council, Denmark
Ms Lene **Hjaltason**, Secretary, The Nordic Council, Iceland

Ms **Maarit Immonen**, Department Secretary, The Nordic Council, Finland
Mr Bert **Isacsson**, Secretary General, The Nordic Council, Sweden
Mr Guy **Lindström**, Secretary General, The Nordic Council, Finland
Mr **Kjell** Myhre-Jensen, Head of Secretariat, The Nordic Council, Norway
Ms **Snjólaug Ólafsdóttir**, Secretary General, The Nordic Council, Iceland
Mr Alibak **Steenholdt**, The Nordic Council, Greenland
Mr Kristoffur Thomassen, The Nordic Council, Faeroe Islands

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Mr Jerry Svensson, Party Group Secretary, Social Democratic Group

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Mr **Hrafn Hallgrímsson**
Ms Ellen **Ingvarsdóttir**
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Ms Susanne **Kabel**, Journalist, Sermitsiaq, Nuuk, Greenland
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Mr **Niels** Lindvig, Journalist, Danmarks Radio, Orienteringsredaktionen
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Mr **Guðmundur** Love, Morgunblaðið
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Mr **Árni** Finnsson, Reporter, Greenpeace Magasin
Ms Claudia Spiewak, Correspondent, Norddeutscher Rundfunk

Mr Larserik **Häggman**, Editor, Nordisk Kontakt Magazine

APPENDIX I

Resources, Development and Environment in the Arctic

by Alf Håkon Heel, University of Tromsø,
Geir Runar Karlsen, NORUT Samfunnsforskning A/S
and Andreas Breivik, NORUT Samfunnsforskning A/S

Preface

This report was prepared for the Nordic Council, during the period April - June 1993. Alf Håkon Heel has written chapters 1, 2, 4 and 5, Geir Runar Karlsen and Alf Håkon Heel have written chapter 3. Andreas Brevik has provided valuable research assistance.

1. Introduction

The first recorded voyage into Arctic regions was made about 300 B. C., by Pytheas of Masilia. Pytheas saw nothing but fog and ice, and found the region unfit for human settlements. Ours is the 'Age of the Arctic': The northernmost parts of our globe have been gradually drawn into the ever expanding sphere of modem economic development, military strategy and environmental degradation. [1] This development poses a number of challenges, related to the situation of the indigenous peoples of the region, conversion of military capabilities to peaceful purposes and the need to reconcile the imperatives of economic development with concern for the vulnerable Arctic environment.

This report will concern itself with the latter aspects: what are the status and prospects for economic development in the Arctic region, and which are the environmental concerns? We shall take a general account of the Arctic, its people and geographical and legal features as the point of departure here. From that we proceed to the question of economic development, focusing on how the region's rich natural resources are utilised. Environmental issues pertinent to the Arctic are reviewed before discussing various institutional developments in the Arctic region - some stemming from concern for the environment.

2. Attributes of the Arctic

2.1 Defining the Arctic

The Arctic consists of the large, ice-covered Arctic ocean, encircled by six countries: Canada, the USA, Russia, Norway, Iceland and Greenland (Denmark) (see map). The Arctic Ocean covers some 14 million square kilometres, which is about two-thirds of the area north of the Arctic Circle.[2] The land masses are enormous - Greenland covers some 2.2 million square kilometres, which is four times the size of France. Alaska covers one-fifth of the size of the lower 48 in the USA.

The Arctic may be defined in a number of ways. Common denominators for the area are fragile ecosystems, harsh climatic conditions, resource-based economies and political vulnerability. No single criterion will serve to give a meaningful delimitation of the Arctic region. And criteria that may be useful on the mainland, maybe irrelevant in marine

[1] The term "the age of the Arctic" was first coined by Oran Young in the article "The Age of the Arctic" in the special issue on the Arctic Ocean in Oceanus, Vol. 29, No. 1,1986.

[2] Most of the geographical references in this report are taken from the Atlas of the Polar Regions. Jones and Bartlett Publishers, Boston 1981.

'The **Circumpolar** North

areas. The Arctic Circle (at 66°N), which delimits the region where the sun does not rise on at least one day during the year and does not set on at least one other day, is commonly regarded as the southern boundary for the Arctic. Another approach would be the isotherm for 10"C mean temperature in July. This boundary does not correspond well to the Arctic Circle - while it is far to the north of the Arctic Circle in most of the Eurasian continent, it lies far to the south of the Arctic Circle in the Northwest Atlantic and the northwestern part of the American continent. A third definition could be the northern boundary for tree growth, which also has a great north-south variation, depending on the climatic conditions. A fourth is the southern extension of permafrost (tundra), which stretches almost to 50 degrees northern latitude in Siberia, but hardly affects northern Norway at 70 degrees latitude. In marine areas the southern extension of sea ice as well as the 10 degrees/July isotherm could be taken as the 'Arctic' boundary. The latter would give a far more extensive approach.

Taken together, these criteria suggest that eight countries are 'Arctic' by virtue of meeting at least one criterion: Canada, Denmark (by virtue of its sovereignty over Greenland), Finland, Iceland, Norway, Russia, Sweden and the USA. In addition, strong and long-standing research interests may also be claimed as a basis for being considered an Arctic nation, and by virtue of this criterion also Germany, Great Britain and Poland may be included among the Arctic nations.

In the various countries mentioned there are different traditions for defining the Arctic. The 1984 US Arctic Research and Policy Act, for example, defines the Arctic as "all United States and foreign territory north of the Arctic Circle and all United States territory north and west of the boundary formed by the Porcupine, Yukon, Kuskokwim Rivers; all contiguous Sea, including the Arctic Ocean and the Beaufort, Bering, and Chucki Seas; and the Aleutian chain." In Norway, on the other hand, the tendency is to take a more restrictive view and restrict the 'Arctic' to areas below the 10"C in July isotherm or the maximum extension of sea ice. This leaves almost all of mainland Norway outside the Arctic.[3]

Generally, the tendency is to take the broader approach to defining the Arctic, for example by the Arctic Circle.[4] It is this approach that will be followed here, and we shall also include the Bering Sea in the Northeast Pacific and the Davis Strait/Labrador Sea in the Northwest Atlantic, as these ocean areas are north of the 10"C July isotherm.

2.2 *Climate and climate related characteristics of the Arctic*

The Arctic climate is characterised by low temperatures, low precipitation (low temperatures reduce the moisture bearing capacity of the air) and two seasons: a short summer and a long winter. Generalisations beyond this are difficult, however, as the climate within the Arctic varies dramatically. There are a number of distinct climatic regions. The general climatic pattern derives from the relative location of land/ice and oceans. Thus, where open water stretches far to the north, as it does in the Northeast Atlantic due to the Gulf Stream, the nearby land masses will have relatively high mean temperatures which are also relatively stable over the year.

Conversely, in continental areas, extreme cold and permafrost may occur southwards far beyond the Arctic Circle, but here the annual temperature variations are far greater, because of the lack of moderating influence from oceans. In Verkhoyansk in Siberia a January low of 67.7°C and a summer high of 36.7°C have been recorded. In Bodw at approximately the same latitude on the Norwegian Atlantic coast, winter temperatures rarely fall below 10"C while summer temperatures rarely exceed 20°C. Generally, temperature variations are greater in the Arctic than in the rest of the northern hemisphere.

The Arctic (as also the Antarctic) plays a crucial role in regulating the Earth's climate. Climatic history seems to indicate that the polar areas serve as 'climatic

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[3] See, for example, the white paper on Norwegian polar research, NOU 19899; Norsk **polarforskning** Ministry of the Environment, Oslo

[4] Some use a still more encompassing definition: See for example, Osherenko, G. and Young, O. 1989: The Age of the Arctic: Hot Conflicts and Cold Realities, Cambridge University Press, Cambridge. Here all lands and seas north to 60 degrees latitude are considered as being "Arctic". This approach would bring the Nordic capitals Oslo, Stockholm and Helsinki within or close to the Arctic.

regulators'. Larger climatic changes have resulted in at least three major glacial epochs ('ice ages'). The last of these, the Pleistocene, lasted for about 1 million years, and ended about 20,000 years ago, with stabilisation of ice in North America and Europe some 7,000-8,000 years ago. Maximum mean temperatures since then were about 4,000-6,000 years ago, since when the atmosphere has been cooling until our times.

Within the major climatic cycles there are however more frequent minor cycles, for example a temperature increase between A.D. 800 to 1,000 which facilitated the colonisation by the Norsemen of Greenland, Iceland and Newfoundland, and a decrease between A.D. 1550 and 1850 ('the Little Ice Age'). Recent years have witnessed a seemingly unprecedented increase in average temperatures (quickest increase in 10,000 years). It is generally believed that this increase is at least partially a 'greenhouse effect' stemming from man-made emissions of among other things carbon dioxide and methane.[5] (See chapter on environmental problems.)

The Arctic Ocean is believed to play a crucial role in this context. It affects the global carbon dioxide cycle in that the waters in the North Atlantic act as 'carbon sinks' where CO_2 is transported from the surface to the water masses and bottom sediments, thereby buffering atmospheric increases in CO_2.[6] These processes are not yet well understood, however, and several large scale research programmed are investigating this issue.

The Arctic's low temperatures cause permafrost of the soil, tundra. Permafrost occurs where ground temperature is below 0°C for more than two years, and it is an important impediment to economic development in the Arctic, as a surface layer thaws in summer and freezes in winter. Construction work is greatly hampered by permafrost, which raises considerable engineering challenges. The extension of permafrost coincides roughly to the 0°C mean air temperature isotherm. Of the land masses in the Arctic, about 80 per cent of Alaska, all of Greenland, half of Canada and half of the land area of the former Soviet Union as well as parts of Scandinavia, Mongolia and northern China are affected by permafrost.[7] The greatest thickness of permafrost recorded is in Siberia, at 1,500 metres.

The Arctic Ocean is locked by ice from October to June. The extension of sea ice is to a large extent determined by the direction and speed of ocean currents. The summer average ice cover is in the order of 5-8 million square kilometres, while the winter ice cover is more than twice that size. Ice islands (which may be up to 30 kilometres wide) and icebergs that break away from ice shelves or glaciers are carried southwards by ocean currents. The limit of sea ice in the Pacific stretches from Hokkaido in northern Japan over the Kamchatka peninsula in Russia to the Aleutian chain off Alaska.

In the North Atlantic, sea ice is much more of a problem, as major ocean currents bring sea ice southwards along the east coast of Greenland (East Greenland Current) as well as the east coast of Canada (Labrador Current) into areas with important shipping lanes. Some 1,000 icebergs cross the 55th parallel each year, at the same latitude as Scotland. The Titanic, which sank in 1912, hit an iceberg at the 42nd parallel, the same latitude as Boston. While sea ice may be considered a nuisance for economic development, it should be noted that important biological processes take place in the marginal zone of the sea ice. The biological productivity at the ice margins is enormous, and is a key process at the base of Arctic ecosystems.

2.3 *Natural resources: the broad outline*

The Arctic seas from the ice margin and southwards along the continents are shallow and highly productive. They provide rich fishing grounds, and rich mineral resources are found on the continental shelves. The world's largest continental shelf is in the Arctic; while it is narrow off America (stretching less than 100 kilometres seawards), it stretches up to 1,500 kilometres out off Russia. The central Arctic Ocean is a deep sea (down to 4,500 metres) with very low biological productivity.

Basic to the rich fisheries is the high biological productivity stemming from 24 hour sunlight and nutrient-rich up-wellings caused by warm ocean currents mixing with colder waters. It is difficult to estimate the total output from 'Arctic'

[5] Intergovernmental Panel on Climate Change (IPCC) 1990: Global Climate Change. Obtained from the Ministry of the Environment, Oslo, Norway

[6] D. James Baker 1986: "The Arctic's Role in Climate" in **Oceanus** Vol. 29, No.1 1986

[7] Atlas of the Polar Regions, p. 15,

fisheries, as many fish stocks migrate over long distances, spawning in other areas than where they have their nursery and feeding grounds. A case in point is the Norwegian-Arctic cod, which has its nursery grounds in the Barents Sea, while spawning more than a 1,000 kilometres to the south, by the Lofoten Islands on the Norwegian Atlantic coast. In a world fisheries context Arctic fisheries are highly significant, producing as much as 5-10 per cent of the world catch of some 85 million tonnes.[8]

Characteristic of the Arctic ecosystems are low species diversity, and fishing is therefore concentrated on a few species, ranging from shrimps at the lower end of the chain to top predators such as seals and whales. The most abundant and economically important fish species are cod, capelin, pollock and herring. The status of the resources varies greatly; while it has been necessary to impose bans on fishing for certain species in the Northwest Atlantic and in the Bering Sea and impose drastic reductions in fishing quotas off Iceland, fish stocks appear to be in a generally sound state in the northern part of the North-eastern Atlantic (the Barents Sea and the Norwegian Sea).

Among the pinnipeds, harbour seals and hooded seals are among the more important, and are harvested by Canada, Greenland, Norway, Russia and the USA (Alaska). A large number of whale species are also found in the Arctic. Bowheads, humpbacks, minkes and finwhales are harvested along with a number of small toothed whale species. Some whale species, like the bowheads, are generally held to be a threatened species, but are hunted by inuits in Alaska, Canada and Russia, the former accounting for almost all of the catch. Other species, like minke whales, are abundant and are taken not only by indigenous populations but also by Icelandic and Norwegian fishermen.

The Arctic contains rich mineral energy resources, onshore as well as offshore. The oil resources are by far the economically most important. By the late 1980's, more than 60 per cent of the oil and natural gas produced in the former Soviet Union came from northwestern Siberia. Some of the largest gas fields in the world are located here. The development of oil fields at the North Slope of Alaska, which commenced with the discovery of the Prudhoe Bay field in 1968, is the largest oil field ever discovered in the USA. By the mid-80's, about 20 per cent of the crude oil produced and about 10 per cent of the oil consumed in the United States came from the Prudhoe Bay area.[9]

In northern Canada, oil reserves of more than 200 million cubic metres were located by the mid-80's in the Mackenzie Delta, and the reserves in other Arctic areas, including the Arctic islands, are considerable. Also in other areas of the Arctic are geological structures which are promising with regard to oil deposits located. Coal is mined at a number of locations in the Arctic. High costs of Arctic mining operations and low prices of other forms of energy combine to render political motives the strongest driving forces for such ventures. A case in point is the Spitzbergen archipelago, where Norwegian as well as Russian coal-mining is undertaken at high cost, for strategic considerations. In Alaska (the Brooks Range) and in Siberia, enormous coal reserves are located.

As to other mineral resources, a large number are mined at a number of locations: copper in Norilsk by the Jenisei in northern Russia and in Whitehorse, western Canada; diamonds at several locations in Siberia: gold in Yellowknife in Canada and in Nome in Alaska as well as in several locations in Siberia; iron in Kiruna in northern Sweden and in Kostomuksha on the Kola peninsula in northwestern Russia; lead and zinc in Faro and Pine Point in Canada and Marmorilik in Greenland (now closed); nickel in Norilsk and tin at several locations in Siberia. A number of other minerals, such as silver, platinum and palladium are also mined. Due to the high development and transportation costs, mineral deposits in the Arctic must generally be richer than those in more temperate areas in order to be developed. The increasing importance attributed to environmental factors contributes further to restrict Arctic mining operations. Russia is by far the largest Arctic mining nation, with Norilsk as the most important centre (see chapter on economic development).

In addition to the living marine resources and the mineral resources, some

[8] The exact percentage is difficult to assess due to the way catch statistics are presented. Besides, catches fluctuate widely, and the relative importance of different areas therefore varies from year to year.

[9] Osherenko and Young, pp. 47-48

other natural resources should be mentioned: One is hydroelectric power, which is a major export article - 'power from the north' - of some Arctic regions as well as a major environmental issue. A second is what may be called scenic resources or wilderness. This is the basis for a rapidly increasing tourist industry in several Arctic regions. A third is the Arctic as a medium for transportation: Oil and gas are being shipped through pipelines from the North Slope of Alaska to the ice-free harbour in Valdez in the Gulf of Alaska. Along the Northeast Passage, Russian icebreakers keep an increasingly important shipping lane open parts of the year.

2.4 The geopolitical attributes of the Arctic

Taking the Arctic Circle as the point of departure leaves us with eight Arctic countries. An estimate of the total human population living in this area is not easily obtained.[10] The 1981 *Atlas of the* Polar Regions suggests that some 2 million people live in the Arctic. Population increase in the region is rapid, however, and the figure is most probably far higher than that by now. Less than 1 per cent of the Earth's population live north of the Arctic Circle.[11]

2.4.1 The *Arctic countries*

The largest Arctic population is found in Russia, which accounts for the bulk of the Arctic populations. In Northwest Russia each of the two cities, Murmansk and Arkhangelsk, has more than 500,000 inhabitants. Russia is also by far the largest Arctic country, as it has half of the land area in the Arctic and about half of the total Arctic coastline. Russia has territorial boundaries towards three other Arctic states: Canada, Finland and Norway and marine boundaries with two: the USA and Norway.

The USA has its Arctic territory in Alaska, which was purchased from Russia in 1867. Alaska is about 1/5 the size of the lower 48, but contains only a fraction of 1 per cent of the total US population. Marine boundaries faces Canada and Russia, while onshore Alaska borders Canada only. Canada has about 40 per cent of its land area in the Arctic. Also in this case only a fraction of 1 per cent of the country's population live in the region. A marine boundary is established in the Northwest Atlantic, towards Greenland. Greenland has some 50,000 inhabitants, of which more than 80 per cent are inuit. Arctic Scandinavia includes parts of Finland, Norway and Sweden. Finland and Norway border Russia. The climate in this Scandinavian Arctic region is sub-Arctic to boreal, and the population density is therefore higher than in most other Arctic regions. The Arctic part of North Norway, for example, has some 400,000 inhabitants.

In the northern Barents Sea, Norway holds sovereignty over the Spitzbergen archipelago, where 4,500 (Norwegians and Russians) people earn a living from coal mining. Norway was given sovereign powers over the archipelago in the 1920 Spitzbergen Treaty, subject to certain rights of other parties to the Treaty to equal treatment as regards economic activities. Up till now coal-mining has been the major economic activity. Exploratory drilling for oil has been carried out, without results of economic significance.

All territorial boundaries among the Arctic states are settled. The only land area in the Arctic where 'normal' national sovereignty is not established is the Spitzbergen archipelago. The situation in the marine areas and with regard to islands is far more complex, however. A number of conflicts regarding marine delimitation and jurisdictional status are still unresolved. These unresolved delimitation cases are highly significant in that they serve to hamper economic development of the region as well as prevent agreement on stricter environmental standards and resource management.

2.4.2 The *marine boundaries*

The ice-covered areas beyond national jurisdiction in the Arctic Ocean are international waters, or *high* seas, in legal terms. Delimitation of the Arctic high seas to the outer limit of the Arctic rim-states' exclusive economic zones is uncertain, however. In the case of Canada, its right to draw straight baselines around its northern archipelago is disputed, as this includes what other states regard as international straits within its internal waters; in the case of Norway, a number of countries have reserved their positions

[10] This is due i.a. to the way population registers are organised in the Arctic countries,

[11] Käkönen, J. 1993: "Demokrati og bærekraftig utvikling i Arktis". Paper, Tampere Peace Research Institute

to the Norwegian view that it has a right to an exclusive economic zone which includes the Spitzbergen archipelago.

Delimitation of the exclusive economic zone between states is according to the 1982 Law of the Sea Convention's article 76 to be effected "..by agreement on the basis of international law in order to achieve an equitable solution." Traditionally, two major approaches to the drawing of boundary lines in the Arctic can be observed: One is to draw the boundary line according to the equidistance principle, where the boundary is located at an equal distance between each of the parties' land areas. A second approach is the sector line, by which a straight line is drawn from the end of a territorial boundary to the North Pole, irrespective of the configuration of land areas. The following are the major disputes:

USA - Canada: The marine boundary between Alaska (USA) and Canada is not resolved. The Canadian position is that the boundary should be drawn northwards along the 141st meridian into the Beaufort Sea, as a prolongation of the terrestrial boundary between the two countries. The American view is that the line should be drawn to the east of the Canadian sector line, according to the equidistance principle. The disputed area covers some 6,000 square nautical miles.

The Canadian government has bolstered its position by several policy moves: In 1965 it started issuing petroleum exploration licences for the Beaufort Sea. The 141st meridian has also been set as the westerly limit of the Canadian 200 mile coastal zone, which was established in 1977. Moreover, environmental legislation (the 1970 Arctic Waters Pollution Prevention Act) also posits the 141st meridian as the westerly limit of Canadian jurisdiction in the Arctic. The USA, on its side, claims an eastern boundary for its fishery conservation zone to the east of the sector line. In order not to escalate the conflict, the two parties have imposed an unofficial ban on the exploration of oil and gas in the offshore areas.

In addition to their boundary delimitation conflict, Canada and the USA also have other jurisdictional conflicts in the Arctic.[12] The legal status of the northern waters in the Canadian Arctic archipelago is disputed by the USA. The waters comprising the five Northwest Passage routes are viewed by the USA as straits, free passage through which reduces sailing distances between east and west by thousands of nautical miles. As early as 1968, the US oil tanker Manhattan made a trial sailing through the Northwest passage, provoking considerable anger on the Canadian side.

To Canada, these waters are part of a pristine Canadian north, vulnerable to pollution hazards involved in shipping. Therefore Canada has claimed these waters to be internal waters, which implies that transits may be denied to foreign vessels. The Canadian argument is based, inter *alia,* on the fact that much of the ice cover in these areas is constituted by land-fast ice, which maybe considered analogous to land territory, and on article 234 of the 1982 Law of the Sea Convention, which give coastal states wide powers to regulate commercial shipping in ice-covered waters (see chapter 4).

USA - Russia: The USA and the former Soviet Union agreed to a 1,600 mile marine boundary in 1990, following 9 years of negotiation. The background to the dispute was disagreement over the exact depiction of the boundary line, stemming basically from different approaches to the drawing of lines. Alaska was transferred from Russia to the USA in 1867, and the boundary established by the 1867 Convention is not congruous with either the 200 mile exclusive economic zone lines or the equidistance line where the zones overlap. The 1867 Convention line is accepted by both parties by the 1990 agreement, and was arrived at by an exchange of resource jurisdiction in a number of 'special areas' between the two parties. Where these apical areas are located within the other party's 200 mile zone, it is explicitly stated that these areas do constitute an extension of jurisdictional competence.

In the Bering Sea there is also a large ocean area beyond, but totally encompassed by, the Russian and the American exclusive economic zones. This 'doughnut hole' has been the subject of much controversy, as it constitutes a high seas area where anybody is free to fish the stocks migrating into it from the Russian and US zones (see chapter on institutions).

12 Vanderzwaag, D. & Lamson, C. 1986: "Ocean Development and Management in the Arctic: Issues in American and Canadian Relations" Arctic, Vol. 31, No.4 pp. 327-337.

Norway - Russia: On the western side of the Eurasian continent, Norway and Russia have been negotiating over a boundary in the Barents Sea for two decades. The Barents Sea, some 1.4 million square kilometres of relatively shallow waters, is among the world's best fishing grounds and it is regarded as promising with regard to petroleum extraction. Moreover, important shipping lanes pass through it and the only ice-free harbour in Northwest Russia is Murmansk. In addition, from a security policy perspective, the area still has a significant strategic role. The gist of the dispute is similar to the one between Canada and the USA: While Russia claims a sector line running from the end of the territorial boundary to the North Pole, Norway claims that the boundary should be drawn along a median line, according to the equidistance principle. The resulting disputed area covers some 155,000 square kilometres.

With the establishment of 200 mile economic zones in 1977, the need to delimit a boundary was further emphasised, in that claims overlapped also in the waters outside the territorial limit. Between the Spitzbergen archipelago and Novaya Zemlya there still is an area of international waters, beyond the 200 mile economic zone of both countries. The continental shelf here will however lie in its entirety within the jurisdiction of the two countries.

Both parties have been careful not to provoke further conflict, and have abstained from oil exploration in the disputed area. As regards fishing, the parties set up in 1978 a 'grey zone' arrangement straddling the disputed area as well as some of the undisputed area of both countries - more so of Norway 's. This has allowed for stricter regulation and control of the fisheries in the area, and has as such functioned admirably. The agreement does not prejudice a final delimitation line.

Further complicating the legal situation in the Barents Sea is the 1920 Svalbard (Spitzbergen) Treaty. The perhaps most important question raised by the Treaty is whether it can be used as a basis for a claim to a 200 mile exclusive economic zone around Spitzbergen, thereby yielding all treaty parties equal rights to the natural resources in the zone. The Norwegian position is that Spitzbergen does not have its own continental shelf - it rests on a shelf stretching northwards from mainland Norway and the natural resources here, outside the 4-mile territorial waters of Svalbard, therefore belong to Norway. In 1978 Norway established a 200-mile fishery Conservation Zone around the archipelago, where fishing is regulated in a non-discriminatory manner. Most countries have reserved their position concerning the Norwegian approach here.

Norway - Greenland (Denmark): Also the Jan Mayen island to the east of Greenland is subject to Norwegian sovereignty (since 1929), without restrictions as in the Svalbard area. The island is inhabited by about 30 people at a meteorological station. In 1980 the Norwegian Government established a 200-mile fishery zone. Since the distance between Jan Mayen and Greenland is less than 400 nautical miles, Norwegian and Danish claims to jurisdiction overlapped, and a conflict over the delimitation of the boundary arose. In June 1993 the International Court of Justice at The Hague settled the matter by dividing the disputed area approximately in two parts, taking the equidistance line as the point of departure. The disputed area was furthermore split into several segments of varying importance with regard to natural resources, which were distributed between the two countries so as to achieve an equitable solution.

The delimitation of the boundary between *Jan* Mayen (Norway) and Iceland was drawn in 1981. Here a dispute over the boundary delimitation was resolved by a joint arbitrary committee. The solution arrived at gave Iceland a full 200 mile economic zone, and contained special provisions for fisheries as well as for exploration for and development of oil resources. Between Iceland and Greenland a final marine boundary is not agreed. The two countries have however found a modus vivendi, including the tripartite negotiations with Norway on capelin management and distribution.

Greenland - Canada: The boundary between Greenland and Canada was settled in 1973, with an agreement between Canada and Denmark on the delimitation of the continental shelf in the north. The agreement entered into force in 1974.

2.4.3 *Delimitation principles in the Arctic*

It is not easy to draw general conclusion as regards the resolution of delimitation conflicts in the Arctic. A number of

conflicts remain unresolved, between Norway and Russia, for instance, and between Canada and the USA. A number of conflicts have been resolved during recent years, for example between Norway and Iceland and between the former Soviet Union and the USA. As to the process of delimitation, where the parties have not been able to settle the issue in bilateral negotiations (as Russia and the USA did), they have resorted either to conciliation commissions (as in the Icelandic - Norwegian case) or to the International Court of Justice (ICJ) at The Hague (as in the Jan Mayen case between Denmark and Norway).[13]

As to principles of delimitation, it can be observed that neither the sector principle nor the equidistance principle has been used in its pure form in recent years. A common denominator for recent delimitations appears to be *equity* in a wider sense than given by area considerations. This is in line with the duty to establish 'equitable solutions' in delimitations of overlapping exclusive economic zones and continental shelves as laid down in the 1982 Law of the Sea Convention (articles 74 and 83). Considerations in this context can be the configuration of nearby land areas, size of human populations in the area and economic significance of the area to the parties. Both in the Bering Sea delimitation agreement of 1990 and in the Jan Mayen case a solution was arrived at by splitting the disputed area into several zones, and then putting together a package on the basis of equity consid-erations. In the latter case the equidistance principle was however taken by the court as the point of departure for the final solution.

The significance to the remaining boundary conflicts of these principles and solutions is difficult to assess. Third-party intervention appears to have some merit. Resort to third-party mediation, be it by ad hoc commission or by the ICJ, requires the consent of the parties concerned. It seems safe to conclude that given the complexity of the cases and the substantial economic and political states both in the Barents Sea and in the Beaufort Sea, mediation is probably not relevant there. As to the principles of delimitation, the trend appears to be towards equitable, rather than equidistance or sector solutions in their pure form.

2.5 Relevant international framework agreements

International law basically has three sources: international treaties, case law following rulings from the International Court of Justice, and state practice. The significance of the latter stems from the fact that if a large number of states have adopted a certain practice over some time, that practice may be regarded as customary international law. A good example is 200 mile exclusive economic zones, which are regarded as grounded in international law by virtue of the large number of countries which have established such zones since the late 1970's.

A basic principle of international law is that states are sovereign: they are independent subjects relative to other states and have full and sole control over their own territory.

The 1982 *Law* of the Sea Convention is the most important outline agreement for the marine Arctic. It has not yet entered into force, but most coastal states have adapted much of their marine legislation to it,[14] and it is therefore generally considered part of customary international law. It is the treaty basis for 200 mile zones, which are currently grounded in state practice. It establishes fisheries regimes both for the 200 mile zones as well for the high seas, it provides guidance for resolving disputes regarding the delimitation of marine boundaries and it contains provisions on marine environmental protection (see chapter 4). It should however be regarded as an outline convention, providing states with certain general rights and obligations. Actual problems related to e.g. resource management are to be dealt with in forums equipped with legal instruments directed at specific problems.

The agreements provided by the United Nations Conference on Environment and Development in 1992 (UNCED) are another significant component of international law here. The conference concluded two international treaties, a declaration containing a set of internationally agreed principles for

[13] In the latter case it was Denmark who took the case to the ICJ.

[14] 60 ratifications are required for the convention to enter into force. 56 states have ratified as of June 1993.

protecting the environment and an action plan for the environment and development for the next century (Agenda 21). The two treaties relate to climate and biodiversity (see chapter 5). Agenda 21 specifies action plans in a number of programme areas relevant to the Arctic, for example oceans, human health, protection of the atmosphere, management of land resources and the management of vulnerable ecosystems. While not carrying the legal weight associated with international treaties, Agenda 21 nonetheless entails a moral obligation on the part of its signatories, which renders it an important part of the international environmental framework. This is so not least because of its high degree of specificity. The Rio Declaration sets out the general principles by which further international co-operation on the environment and development is to be informed. Its Principle 1 states that "Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature."

2.6 Research

2.6.1 The Arctic research tradition

The Arctic has always been attractive to explorers Pytheas of Masilia has been mentioned; King Ottar, who sailed to the Kola peninsula in the 9th century A.D. was another early explorer. Attempts to find the Northeast and Northwest passages began in the 16th century, ventures which were successfully completed by Nordenskjöld in 1878-79 and by Amundsen in 1903-6.

There is a continuous tradition from these early explorers to today's polar research. Personalities in the history of polar exploration, such as Fridtjof Nansen, also made valuable scientific contributions. Science is one of the major human activities in the Arctic. Its important role both in the past as well as in our times in partly to be explained by the fact that science serve as a means to project political influence in polar areas. Scientific activity demonstrates a country's interests in remote areas where other forms of settlement are hard to develop.[15] Another aspect of science is that it may serve as a first step in regime creation processes. Starting out with the establishment of scientific co-operation to provide basic knowledge, states may extend co-operation on more substantive matters with a binding political regime in mind. The so-called Rovaniemi process by which an environmental regime for the Arctic is being formed (see chapter 5) is a case in point.

These political aspects of science should however not overshadow the fact that the polar areas are very important to our environment and that polar science is therefore vital to our understanding of environmental problems related to the climate and the depletion of the ozone layer. Climate changes as well as depletions of the ozone layer will probably have the greatest effect in the polar areas. The Nansen Centennial Arctic Programme (NCAP) which will take place in 1993-95 is geared at obtaining a greater understanding of the role of the Arctic Ocean in global change. The polar areas, by being relatively untouched by Man, are also valuable as reference areas when trying to assess the impact of e.g. pollution further south or in studying ecosystems which are relatively undisturbed. In addition, the polar areas are attractive for basic research, due to their special ecological, geomagnetic and climatic conditions.

2.6.2 *Current Organization of research*

Arctic research has basically been a national endeavour, in contrast to the Antarctic where international scientific co-operation has been institutionalised in the Scientific Committee for Antarctic Research (SCAR) for more than 30 years. In the 1980's, bilateral and international co-operation in the Arctic emerged, however. A major impetus for this was former President Gorbachev's Murmansk address in October 1987, when he raised the question of regional co-operation in the north, to tackle environmental problems, among other things In 1987 the idea of setting up an International Arctic Science Committee (IASC) materialised, and the organisation was formally established in 1990.

The aim of the IASC is to further international scientific co-operation in the Arctic. The organisation is open to all national research bodies, provided that a continuous and interdisciplinary research

15 As stated by e.g. the Norwegian Govemement in its recent white paper (Stortingsmelding nr. 42 1992-93) on polar research in the Antarctic: "Norwegian polar research has an important political function in addition to the scientific one, i.a. by confirming Norwegian presence."

effort in the Arctic can be demonstrated. 14 countries participate: Canada, Denmark, Finland, France, Germany, Great Britain, Iceland, Japan, The Netherlands, Norway, Poland, Russia, Sweden, and the USA.

A number of countries stepped up their efforts in polar research during the 1980's. This can be explained by a mix of scientific, economic and political motives: A major scientific motive is the increasing importance of the Arctic's role in the global environment, and the need to get a better understanding of geophysical and biological processes relating to this. As the Arctic is being drawn into the political, environmental and economic sphere of the south, so too is research being affected. A case in point is Sweden, where polar research was considerably boosted with the establishment of a Polar Research Secretariat in 1984 and a major research programme for the Antarctic (SWEDARP) was launched.

In the USA too, the organisation of Arctic research was modified by the 1984 Arctic Research and Policy Act of 1984. This designated the National Science Foundation (NSF) as chair agency for the Interagency Arctic Research Policy Committee. The NSF contribution to Arctic research totalled $35 million in 1992, and contributions increased by 33 per cent from 1990 to 1992. A third example is Germany, where a new Polar Research Institute has been set up (the Alfred Wegener Institute in Bremerhaven) along with one of the world's most advanced research icebreakers (the *Polarstern*).

3. Economic Development

The question of economic development can be approached from several angles. From an ***economic*** point of view, development is about utilising resources in an efficient manner. Economic development in the Arctic would from this perspective be about ***modernisation,*** the setting up and running of profitable ventures. From an environmental angle, the issue of economic development is one of sustainable use of the natural resources and the environment. And from a political vantage point, the question of establishing efficient mechanisms for protecting the environment and natural resources as well as the issue of distribution of benefits and costs of economic development among different groups would be the salient ones.

In this chapter we shall concern ourselves with the economic aspects of development, describing the current situation with regard to the development of various resources in different Arctic countries. In the two following chapters (4 and 5) the perspectives will be those of the environment and of politics.

3.1 The prospect for economic development in the Arctic

The preceding chapter has highlighted some of the preconditions for economic development in the Arctic. One pull factor is the region's rich natural resources: fish, energy resources and minerals. Another is its political tranquility: compared with other oil-rich regions the Arctic appears a politically stable environment for such long-term investments as are involved in oil exploitation.

The development of the Arctic's natural resources does also face a number of barriers: First of all the *climate* is harsh. Extremely low temperatures have geophysical effects such as permafrost and ice, which complicate many types of economic enterprise. Construction and maintenance of bridges for example in permafrost areas is both difficult and costly compared with similar projects in warmer latitudes. Appropriate *technology* is in many instances therefore a barrier to economic development in the north. Transport or fishing in Arctic waters, for example, require ice-reinforced hulls in vessels intended to operate in ice-infested waters.

A third barrier is therefore *capital,* related to high costs of developing technology and infrastructure in such circumstances. Vast *distances* is a fourth barrier. The distances to the market outlets for products from the Arctic, be it hydroelectric power, minerals or fish, are in most instances enormous, and transportation costs can be immense. Consequently, the scale of operations must be big in order to provide sufficient returns on investments and the high production costs. A fifth barrier is the vulnerable Arctic *environment,* which generally has a slow self-healing capacity. The Arctic is particular susceptible to long-lasting damage from e.g. oil

pollution, as organic materials are broken down at a much slower rate than in warmer areas, and because volatile compounds do not evaporate due to low temperatures.

In addition to these 'objective' barriers, come man-made barriers: *Jurisdictional conflicts* in the Arctic hamper the exploitation of various types of natural resources. Prospecting for oil in the Barents and Beaufort seas is complicated by unresolved delimitation conflicts. Another type of conflict hampering economic development is that of *value conflicts* among various groups: Some interests may favour the development of hydroelectric power while others are strongly opposed. The resolution of such conflicts may take considerable time and delay or prevent economic development. An important question in such circumstances is which and whose values are to prevail - those of the region's population or external interests?

The economic foundation of most economic development in the Arctic region is related to natural resources, which fall into two main categories: renewable, like fish and hydroelectric power (flow resources), and stock resources like oil and copper. Renewable resources can be utilised in a sustainable reamer as long as their reproductive potential is not damaged. For example, as long as the number of whales removed from a whale population does not exceed the number of whales born, the utilization is sustainable. That it not to say that the operations involved in extracting renewable resources are sustainable:

Hydroelectric power projects, yielding renewable and clean energy, normally entail considerable environmental damage. Stock resources become depleted when they are exploited. Oil wells and iron ores are exhausted. The concept of sustainable use in the context of stock resources therefore has to do with the environmental aspects of the operations themselves, the manner in which the extracted resources are utilized, and with the time-scale of production (see chapter 5).

3.2 Economic development - an overview

The longest history of exploitation of natural resources in the Arctic we find for fish and minerals. More recently oil, gas and hydroelectric power have been developed, and along with them, infrastructure in the form of pipelines, roads and electric transmission lines. The Arctic shipping lanes are also increasing in importance, as is tourism.

3.2.1 The *fisheries*[16]

Arctic fisheries have a long history. While the indigenous peoples living in the Arctic or sub-Arctic always have harvested the living marine resources of the region, more large-scale and distant ventures have also been involved for a long time. For example, large scale commercial whaling for right whales off Spitzbergen commenced as early as the 16th century. Dutch and British whalers dominated this venture, which almost caused extinction of right whales in the area. Likewise, in the Arctic parts of the Northeast Atlantic, British distant water trawlers have been active since the first decades of this century. The dominating role of interests external to the region has made itself felt to this day, causing resource depletion in some areas.

'Arctic' fisheries occur in three main areas: in the Northeast Atlantic, in the Norwegian and Barents Seas between Greenland and Norway and Russia, with Iceland delimiting the Arctic area to the south. In this region the Barents Sea in particular provides rich fishing grounds, along with the fishing grounds off Iceland. The economically most important fish species in the Northeast Atlantic area are cod, capelin, herring, redfish, haddock, saithe and shrimps. Among the marine mammals, harbour seals and minke whales are the more important. In the Northwest Atlantic, between Canada and Greenland, cod is the commercially most important species. In the north Pacific, in the Bering Sea and its adjacent waters, the Bering Sea pollock fishery has been by far the most important fishery during recent years.[17]

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16 The figures for stock development and catches for the Nordic countries are taken from Hersoug, B. 1992: **Fiskerinæringens hovedtrekk:** Landanalyser av **Danmark, Færøyene, Grønland,** Island og Norge Nordisk Ministerråd, Nerd 1992:30, København

17 Arctic fisheries are difficult to distinguish from other fisheries, due to the fact that several fish species spend most of their life-cycle in Arctic waters, but to a large extent are caught when migrating into subarctic waters. Conversely, other species, such as minke whales, spend most of their life in temperate waters, but are caught as they migrate

Greenland's fisheries produce some 100-150,000 tonnes annually, but stock sizes and catches fluctuates greatly. Only a few species are of economic significance, the two most important being cod and shrimps. The latter is by far the most important by value, constituting more than 80 per cent of the export value. Fish exports is vital to the country's economy. The only other significant export products are lead and zinc, and following the closure of the Marmorilik mines in 1990 the fish exports account for about 85 per cent of Greenland's export income. The state-owned 'Royal Greenland' company dominates the fishing industry. A number of countries fish in Greenland's exclusive economic zone, in particular along the east coast where there are a few settlements. This fishery provides for free access for Greenland's fish exports to the European Community, its major market.

The country's strategy for economic development has been one of modernization, with considerable capital investments in highly efficient vessels and processing plants. And as mentioned, production is highly specialised, for cod and shrimp, while marketing efforts are directed at the EC. Most of the work force is employed in fishing and associated enterprises. It follows that the employment situation as well as the country's export earnings are very vulnerable to market fluctuations as well as fluctuations in fish stocks.

As regards fish stocks and catches, the cod stock has been dramatically reduced over recent decades, following a sharp reduction in the spawning stock biomass. Cod stocks around Greenland are historically known for wide fluctuations, with rich harvests being followed by long periods of low catches. In the 1980's the total annual cod catch was lower than 10,000 tonnes. The shrimp stock has been heavily exploited since the early 1980's. Catches have fluctuated here too, peaking in 1989 with a total catch of over 180,000 tonnes and declining in 1990 to under 100,000 tonnes. Other species of less importance are redfish, salmon and flounder. Catches of marine mammals are significant, but the export market for sealskins was to a large extent destroyed by the European Community import ban in 1983. Whale meat is only sold locally.

Iceland is among the world's most fishery-dependent nations. In 1991, fish represented about 80 per cent of the country's exports value, earning 55 per cent of the country's hard currency income. Fishing is the motor of the Icelandic economy, generating demand in other sectors of the economy. The total catches of all species vary, peaking in 1988 with 1.8 million tomes, and at a low in 1990 with a little more than 1 million tomes. Cod is by far the most valuable species, but exports are spread over a far wider range of products than is the case with Greenland, with about half of the exports going to the EC.

Iceland was one of the first countries to extend its fisheries zone, thereby triggering two 'cod wars' with Great Britain, to ensure its control over fish stock resources off its coast. The cod stock has fluctuated in recent decades, the main tendency being towards a smaller adult stock, now believed to be less than a million tonnes. Cod catches have fluctuated around 350,000-400,000 tomes annually the last decade. From 1992 onwards, there has been a sharp cutback due to a dramatic reduction in the spawning stock biomass. The haddock stock has also declined, to around 50,000 tomes. The herring stock has increased, while capelin appears to be fluctuating widely.

The Icelandic fishing industry is very capital intensive and highly productive. About 12 per cent of the labour force is engaged in fisheries. The fishing fleet is generally modem, with trawlers having the major share of the demersal fish catches and purse seiners harvesting pelagic species. Along with modernization, a considerable specialization has occurred, causing a contraction in the number of fish processing plants. The economic vulnerability of Iceland is of the same type as Greenland's: dependence upon highly specialised products, most of which are channeled to a limited market.

Compared with Greenland and Iceland, fishing is not as important to Norway. Only a small fraction of the labour force is dependent on fisheries, and the export value of fish is nowhere near that of other marine resources such as oil and gas. Nevertheless, fish products are a significant export item for Norway,

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northwards into Arctic waters in the feeding season. Moreover, the catch statistics are not arranged so as to allow for a separation between Arctic and non-arctic areas. For these reasons, establishing an accurate catch statistic for the "Arctic" is very difficult.

contributing 5 per cent of the export value. About 90 per cent of the catches are exported, about 60 per cent to the EC. The volume of catches has been sharply reduced since the late 1970's, when the 200 mile economic zone was introduced. The sharp decline in important fisheries brought the total catch down to 1.6 million tonnes in 1990. Since then, the improved state of capelin and cod stocks in particularly has brought the total catch up to almost 2 million tomes in 1991.

In the Arctic part of Norway, fishing is almost as important to the economy as in Iceland. Many local communities depend almost exclusively on fishing for their existence. Half of the country's 20,000 fishermen live in North Norway, where we also find a considerable fishing industry. The fishing fleet consist of some 4,000 vessels, only 600 of which are longer than 22 metres. The importance of small vessels to Norwegian fisheries is significant, as most of the smaller vessels use passive fishing gear, which is a more sustainable fishing practice than is the case in other Arctic-areas, where trawl fishing predominates. The herring fisheries used to be of great importance to Norway, but collapsed in the late 1960's. At present, the catches are significant (200,000 tonnes in 1991).

The capelin fishery is fluctuating, mainly due to natural factors. Cod is the mainstay of Norwegian fisheries. As on Iceland, the total stock has been severely reduced, and quotas in the order of 100,000 tonnes were set in the late 1980's. Due to strict management practices for several years, the Norwegian cod quota for northern waters is now around 250,000 tonnes. Other important species in this area are haddock, blue whiting, redfish and shrimp.

Russia is one of the world's major fishing nations - landings have been in the order of 7-8 per cent of world production. The Russian fleet used to operate world-wide, taking a significant share of the country's catches in international waters or in the economic zones of other nations. Now it appears that distant water fishing is viewed as too costly, and efforts are being concentrated to Russian waters. With the disintegration of the Soviet Union, old institutional structures withered and new ones are emerging. Division of responsibilities for management and control of catching operations is still unclear, however. resulting in heavy over-fishing of the Barents Sea fish quotas.

The Russian fishing fleet is rather capital intensive. The Sevryba, which is responsible for operating the larger part of the northern fishing fleet, currently has about 700 vessels. In the North Atlantic blue whiting has been an important species, with cod increasing in importance recently as more emphasis has been laid on the export value of fish. In the north Pacific, pollock has been the most important species.

The United States: The economic dependence on fisheries is considerable in Alaska, being the most important source of employment. Until recently Alaskan fisheries were dominated by joint-ventures with foreign interests, with US fishermen harvesting different groundfish species and delivering their catches to foreign processing vessels. However, this has been replaced by US domestic operations. Currently, Alaska has several abundant species, and stricter management practices are signalled from the National Marine Fisheries Service.

The Alaskan pollock fishery grew from 1.55 millions metric tomes in 1982 to 2.1 million tonnes in 1988, but declining subsequently. In 1991, Alaskan pollock was the largest of all Alaskan groundfish fisheries (72 per cent), while the other most significant species is Pacific cod (15 per cent). In addition, flatfish are caught, but are of marginal importance. The large-scale groundfish fishery is relatively new in Alaska, accelerating mainly during the 1980's. Traditionally salmon has been the most important fishery. In 1990, catches had an ex-vessel value of USD 540 million. In Alaska, the salmon fisheries are the largest non-governmental employer, with sales exceeding those of tourism, mining, or forest products. Besides, the salmon fisheries are an important part of the cultural and historical heritage of Alaska (Low 1991).

In international waters in the Bering Sea (the 'doughnut hole'), into which the pollock stock migrates, the resource has been severely depleted. The total catch of pollock from the central Bering Sea fell from more than 1 million metric tonnes in 1990 to about 10,000 tomes in 1992. Over-fishing has been blamed by US and Russian authorities on Japanese, South Korean, Chinese and Polish vessels.

Canada has access to both the North-Pacific and the North-Atlantic ocean. Its Arctic fisheries are mainly in the east,

where some 80,000 people are employed in the fishing industry. In 1981, Canadian groundfish catches in the Northwest Atlantic were in the order of 140,000 tonnes. Landings declined to 70,000 tomes in 1991, due to oceanographic conditions, predation on fish by seals and over-fishing. The decline came in four major fish species simultaneously: cod, plaice, yellowtail and redfish.[18] The reduction in the cod stock resulted in a moratorium being imposed on the Atlantic cod fisheries from 1992 onwards. The total quota in all sectors for Canadian catches in the North-Atlantic has been reduced by some 50 per cent. Estimates indicate a 50 per cent reduction of capacity in the processing industry, and one expects an equal reduction in employment. However, raw fish is imported from other countries, mainly from Russia. In 1992, Canada imported 10,406.0 tonnes of groundfish from Russia.

In addition to traditional fisheries, aquiculture and sea ranching are also gaining in importance in several Arctic countries. The relatively cold waters of northern areas hamper the growth of the fish, but on the positive side are the low pollution levels of Arctic waters. In Alaska and Iceland, sea-ranching of salmon is becoming an important part of economic development. And in Norway in particular, aquiculture has been growing to become an important occupation in many coastal areas.

3.2.2 ***Tourism***

Tourism in polar areas appears to be growing. 'Wildlife-tourism' or 'explorer-tourism' is part of the green wave, and customers are prepared to pay large sums to experience pristine wildlife. The high-cost profile of organised Arctic tourism can be illustrated by the following example: Beginning in 24 July and ending in 21 September, 1992, a Russian nuclear icebreaker carried tourists through the Northwest Passage. The icebreaker was hired jointly by German and Canadian travel agencies. Trips to the Arctic have been popular for some time, but the activity appear to be loosely organized, with small and scattered agencies specializing in 'adventure' tourism.

Organized Arctic tourism is still in its infancy, however. Many visitors still travel on their own initiative, and infrastructure is in most areas virtually absent. Only a few projects have been initiated for marketing and organizing tourist projects on the Arctic, but only a few appear to have had any long-term economic significance. One of the efforts, the first international symposium on 'Tourism in Polar Areas' was held in Colmar, France, 21-23 April 1992.

The island of Svalbard represents one of the most attractive targets for tourism in Arctic areas. While the mining activities are being scaled down for reasons of high costs of Arctic mining operations, the infrastructure of the industry (houses, shops, roads, transport, etc.) is offering spare capacity which can be utilized for other purposes. Lately, an increasing number of tourists have visited Svalbard. In 1985, the number of tourists was estimated to approx. 18,000. In 1992, an estimated approx. of 22,000 tourists visited Svalbard, and the operators expect an increase for 1993. Most of the tourists come by boat (approx. 70-80 per cent), and most of the boats are registered in Russia, but hired by European tourist agencies. Other visitors come by plane, usually from Tromsø or Oslo from where there are daily connections in summer.

One may generalize from the development of Svalbard to the whole Arctic region, claiming that the increase in the number of tourists at Svalbard indicates a general trend in Arctic tourism. The new trends appear to move from mass tourism in the warmer zones of the world to more ecologically exotic spots around the world, the Arctic being one them. There is a market for tourism here. The basic problem appears to be the lack of infrastructure necessary to accommodate tourists wanting to go fishing, bird watching, whale watching etc. It may also be argued that the Svalbard case is too special, however, as it is far more easily accessible than other parts of the Arctic.

3.2.3 ***Mineral resources (excluding oil)***

Minerals are the cornerstone of modern industrialism. As pointed out earlier, a large number of enormous deposits of mineral resources are found in the Arctic. Among others, lead and zinc are mined in Canada and Greenland, iron in Sweden and gold in Alaska. Russia (Siberia) has the largest deposits of most minerals. The Norilsk region on the Yenisei has been mentioned, and also the Kola region is

18 Sonar News No.1, June 1992.

economically dependent on exploitation of mineral resources.

The Kola region, located in north-western Russia and with a population of 1.2 million people, is an example of economic development in the Arctic being based largely on minerals. The region is of strategic importance for Russia, representing the only Russian ice-free harbour on the Atlantic side. The region's infrastructure is highly developed, with both rail and air traffic to the central parts of Russia. Mining is highly significant in the economy of this region, representing almost half of the industrial output (Doiban, Pretes, and Sekarev 1992). Deposits of apatite-nepheline yielded 8.4 million tonnes of apatite concentrate in 1989.

The region's mining companies also produces 80 per cent of Russia's phosphate, 60 per cent of Russia's phlogopite and 35 per cent of Russia's nepheline (Kalabin et al. 1990; 26).[19] Besides these deposits, the Kola region also has iron ore, yielding 11.8 million tomes of ferrum concentrate in 1989. Deposits of non-ferrous metals such as copper, nickel, manganese and zinc are also located here, the nickel industry being the biggest one with an output of 30 per cent of domestic production in the former USSR.

However, even though the economic development of the region has been rapid during the last 15 years, the environmental consequences of development are severe. Industrial plants operated by the Russian state in the Kola region annually discharge over 800,000 tonnes of harmful substances into the atmosphere, and 80 per cent of the discharge being sulphur dioxide gas (Doiban, Pretes, and Sekarev 1992). Further, around 410 million m^3 of industrial and household effluents, 60 per cent of them non-purified, are annually discharged into the region's water reservoirs. Finally, 55 million tonnes of solid mining discharge are dumped annually. Measurements show that within the past five years the heavy metal concentration in the top 10 cm of soil has increased by a factor of 60 for copper, 40 for nickel, and 6 for cobalt (Evdokimova and Mozgova 1989). Some areas have had their vegetation completely destroyed.

19 Phosphate represents the basis for the agricultural fertilizer industry and nepheline is a source of aluminum.

3.2.4 Oil *and gas*

Oil and minerals are the lodestone for most countries' involvement in the Arctic. As energy becomes more expensive and technology facilitates more efficient exploitation, countries as well as multinational corporations seek both new areas and strategies for exploitation of oil and minerals. The oil and gas industry is economically one of the biggest industries in the world, and oil and gas policies have a significant impact on world politics. A case in point is the allied intervention in Kuwait to secure one of the world's richest oil suppliers from unwanted control by Iraq.

The Arctic is one of the richest regions in the world in oil and gas. Estimates suggest that reserves between 100 to 200 billion barrels of crude oil and 2,000 to 3,000 trillion cubic feet of natural gas are located in the region.[20] In Alaska, the Prudhoe Bay fields were discovered in 1968. At the time of discovery, estimates suggested an amount of 9-10 billion barrels of recoverable oil and 26 trillion cubic feet of recoverable natural gas. Lately, 1.6 to 1.7 million barrels of oil have been produced daily at Prudhoe Bay and the adjoining Kuparuk field. This oil is transported to southern markets through the Trans-Alaska pipeline system.

The dimensions of the Prudhoe Bay and Kuparuk fields are significant in a world oil production context. In 1985, the production from these fields amounted to 19 per cent of all the crude oil produced in the United States and 11 per cent of the oil consumed in the United States, but the relative share of oil on the US market from this field increases every year. Additional reserves in the US Arctic are estimated to over 50 million barrels of crude oil and 300 trillion cubic feet of recoverable natural gas. None of this is currently exploited, mainly due to transport problems and jurisdictional issues in the Beaufort Sea.

The oil and gas fields in the Russian Arctic do not appear to lag behind the oil fields in Alaska, and contribute significantly to the fact that Russia is the biggest energy-producer in the world today. In 1992, Russia produced over 500 million metric tonnes of oil-products. Estimates suggest that 40 per cent of the world's oil reserves are located in Russia. Lately, ¾ of the total Russian oil and gas production has come from five big fields

20 Osherenko & Young p.45.

in western Siberia. In 1991, the 20 biggest fields in Russia held 60 per cent of all currently recoverable Russian reserves, though only 30 per cent of the original stocks remained in these fields.

Russian oil and gas production has decreased steadily since 1988, and in August 1992 the Russians had 29,000 wells which were dry or unrecoverable due to for example inadequate technology. In 1993, the Russian department of energy has predicted a decline in production of 14 per cent, bringing oil and gas production back down to the 1973 level. However, an increase in production is likely in the future - it is basically a question of organization. Estimates suggest that 80 per cent of all Russian oil and gas reserves are hidden under the Russian continental shelves in the Arctic and Asia, but technology is still inadequate for exploiting these resources. Some of the problems encountered by the Russian oil and gas industry suggest the need for further technological development in this industrial sector.

In Russia, it is expected that 22 per cent of all types of equipment used-should be replaced immediately. Only a small part of the equipment used in production is up to international standards. The Russian pipelines have a low standard, partly caused by lack of necessary steel qualities needed for such constructions. As much as 9 per cent, or 1 million metric tomes, of all the oil transported through these pipelines is lost due to leakages. Some pessimistic estimates claim that much of the original amount of recovered oil is lost due to leakages from pipelines, obsolete refineries, and outdated production processes. Whether this really is the case is uncertain, however; the technological problems suggest that foreign companies may be of increased importance to Russian oil and gas production in the future. Currently, several international oil and gas companies are cooperating with Russian interests, but most of these have faced problems due to the unstable political conditions in Russia.

3.2.5 *Hydroelectric power*

'Power from the North' is the catchword for a number of conflicts arising from large-scale hydroelectric power projects in the Arctic, most of them aimed at providing electricity for southern regions, also in the northeastern USA. In northern Canada, the James Bay I Project (in Hudson Bay) has provoked considerable controversy since its inception in 1971. Currently the Great Whale River Project (James Bay II), undertaken by Hydro-Quebec and supported by the government of Quebec, is under debate.

The amount of electric power generated is enormous - phase I of the James Bay Project developed some 10,000 megawatts of power, which is being utilised among other things for industrial development in Quebec, and for sale to regions even further south. The environmental impact of development has been considerable: 1,500 km of roads have been built in the wilderness, 5 villages and 5 airports have been established, and 10,000 square kilometres of land was flooded. Phases I and II together will contribute some 15,000 megawatts of power, at a cost of USD 24.4 billion.

Also in the Scandinavian countries, hydroelectric power has been developed. In contrast to Canada, these areas are more densely populated, and much of the electricity produced is utilised in the region, for industrial development, for instance. Several examples of this can be found in North Norway, where energy intensive products such as ammonia (Glomfjord) and cement (Tysfjord) are produced with 'local' hydroelectric power. But here too development has been the subject of considerable controversy, not least in Norway where the Alta hydroelectric project in the early 1980's became a major political issue, pitting the indigenous population (saami) and environmentalists against the Oslo government. In Russia, several large hydroelectric power projects have been developed, to provide power for heavy industries, in for instance the Norilsk area. Until the mid-80's the idea of diverting the flow of rivers ruining northwards, to provide irrigation water and hydroelectric power to stimulate economic growth in southern regions, was fashionable with Soviet planners. The plans were shelved in 1986, due to the high costs of the projects and the unpredictable environmental consequences.

3.2.6 *Infrastructure*

As emphasized throughout this report, the Arctic is a special case with regard to economic development. Large, unpopulated areas constitute the main topographic attribute, and industrial

enterprises in the region encounter problems with transport in particular, and infrastructure in general. The infrastructure related problems lead to increases in the costs of most Arctic operations. Pipelines for transporting oil and gas, to take one example, serve to increase the costs of the operations significantly: the Trans-Alaska Pipeline System (TAPS) which stretches from Prudhoe Bay to Valdez, a distance of over 800 miles. The cost of this project was estimated to about USD 8-9 billion in 1974, not including maintenance. Another example is the Soviet Siberian pipeline, which has an estimated cost of USD 18 billion.

However, the Arctic may also have the potential for contributing positively in this respect, by reducing transport costs in shipping goods from one continent to another. A project which will improve the infrastructure of the Arctic is the Northern Sea Route (NSR). Presently, cargo-transport from Europe to Asia goes by two different routes, through the Suez Canal or via the Panama Canal. Both channels are affected by political conflict, making them subject to unpredictable closures. A northern sea route, in an area where politics are more calm, may represent an alternative to these routes. Different routes through the Arctic have been discussed, some of the better-known ones are the North-West and North-East passages. However, some have suggested passing straight over the magnetic pole, which would be the shortest distance.

Some comparative distances are reproduced in the following table where the NSR is compared with the two available canals, Suez and Panama.

Trade routes	Canal distance	Via the NSR	Difference
Hamburg to Dutch Harbor (Alaska)	10400	4200	61 per cent
Hamburg to Yokohama (Japan)	11430	6920	36 per cent

All distances are given in nautical miles.

However, the distance saved by utilizing the NSR as compared with the canals is limited by other factors. Ice and weather in the Arctic is hard to predict, and increases the costs of the transport considerably. The average speed of ships is estimated to decrease from 13.5 knots using the canals to 12.0 knots using the NSR. Besides, fees paid to the Russian authorities are presently substantial. As of July 1991, they amounted to USD 97,240 as compared the Suez Canal (USD 43,190) and the Panama Canal (USD 24,000), but these prices are expected to drop.

In spite of these disadvantages, labour costs, fuel expenses, and the time-saving component favour the NSR. Total transport cost by the NSR from Hamburg to Dutch Harbor with an icebreaking cargo ship is estimated to USD 269,498, while by the alternative through the Panama Canal is estimated to USD 348,109. Thus, costs savings would be substantial.

The development of infrastructure is also important to increased economic cooperation across national boundaries in the north. Currently, the northern peripheries are rarely linked to each other with air routes, railways or roads. Instead, communication channels go north - south, forcing northern cooperation to be directed via southern centres. West-bound flights from Kola to Norway, for example, have only recently been established.

3.2.7 ***Prospects for economic development***

The demography of the various peoples in the Arctic region varies, but they share some characteristics. First, they usually live in sparsely populated areas, mostly settled centuries ago. The historical dimension of their occupations -be it fishing or hunting -is prominent, and it represents a deep cultural tradition of the Arctic. On the other hand, the exploitation of vast deposits of natural resources such as oil and gas is based on industrial settlements - usually towns or townlike centres close to the natural resources.

Given these two categories of settlement, corresponding to two different cultures, one can see the potential for a conflict between different economic interests. On the one hand we find the 'historical' people of the Arctic making claims based on historical rights to territories and natural resources. On the other hand we find modem industrialized nations having the political power to enforce their decisions to exploit the natural resources. The Arctic can be

considered as a typical *periphery*. Peripheries are distinguished by being rich in natural resources and by having sparse populations. A number of attributes are typical of peripheries, and they combine to make peripheries vulnerable to external shocks.

Firstly, they are *dependent on the export of one or two economic resources.* The Arctic, being sparsely populated, has no 'domestic' market, and is totally dependent upon the export of its products. In addition, the range of products exported is narrow. Greenland is a case in point, basing some 85 per cent of its export income on a very limited range of fish products.

The problems of being dependent on natural resources vary with the physical condition of the resource and with its market. The situation along the Canadian east coast illustrates this, where the moratorium on cod fishing has caused a 50 per cent reduction in the number of processors. At the same time, fish markets appear to be collapsing, due to abundant landings from the Norwegian and Russian fleets, affecting fishermen in the whole North Atlantic area. Another example is the Kola peninsula in Russia. Mining accounts for 41 per cent of the region's total industrial output, and fishing accounts for 30 per cent. With such a narrow base, the region is very vulnerable to variations in market prices and to resource depletion.

Secondly, *investments are usually foreign.* In this case, the Arctic region is poor in capital. Investments in resource development projects come largely from the southern centres of Arctic nations or from abroad. In Alaska, for example, the federal government has a decisive say in the handling of the state's economy. Since Alaska has developed an oil-based economy, petroleum companies too wield much influence over the direction of economic development. And foreign capital also is becoming important - Alaska is described as a colony of Japan by virtue of the increasing role of direct foreign investment in its economy. The role of foreign investment is even more pronounced in the Canadian Arctic.[21] In Russia too the level of direct foreign investments appears to be on the increase, following the adoption of regulations for joint ventures. In the Kola region, Norwegian, Danish and Dutch interests have invested in the Russian fishing industry.

A third attribute of the Arctic frontier region is a conflict between the goals of the central system and the goals of the peripheral system. For the centres, Arctic development is concerned with providing raw materials and resources to further economic development in the centre. For the periphery, economic development is about maintaining the right to utilize the region's natural resources for the benefit of the region itself. Fishing is one case in point. In North Norway and Russia there is dissatisfaction that their respective governments trade away fish quotas to the EC, thereby reducing the fishing opportunities for the local population. The anti-sealing campaigning of animal welfare groups in the early 1980's, causing the EC to establish an import ban on sealskins, represents another example of southern values being imposed on people in the Arctic. In this case 20 settlements lost 60 per cent of their income.[22]

4. Rich but vulnerable: Environmental issues in the Arctic

The previous chapter emphasized the economic aspects of Arctic development. This chapter addresses the environmental issues the region is facing. Broadly speaking, these fall into two categories: environmental problems stemming from various types of pollution, and problems relating to the use and management of natural resources. The latter problems centres on how they can be utilised in a sustainable reamer, avoiding over exploitation and degradation of the environment. The two types of environmental problems are of course related to each other: pollution may destroy natural resources, as is the case with fish stocks being subject to oil pollution, for example. And the extraction of natural resources can damage wildlife habitats, as in the case of development of mineral resources which requires the building of roads, dumps, etc.

21 Osherenko & Young 1989:60.

22 Käkönen 1993.

4.1 The emergence of environmental problems

We have seen that the Arctic is immensely rich in natural resources. At the same time, the region is vulnerable: the Arctic environment is characterised by limited sunlight, low precipitation, low temperatures and low species diversity and biological productivity. These factors render Arctic ecosystems particularly susceptible to various types of pollution, and also slow down Nature's own capacity for repair of damage. In other words, what may be considered as relatively harmless levels of pollution in warmer latitudes, may have stronger and more long-term impacts in the north. The low species diversity and simple ecosystems also serve to make ecosystems vulnerable to over-exploitation of key species in the ecological chains. When plankton-eating fish like capelin are depleted, this has repercussions in the whole ecosystem - for other fish, marine mammals and seabirds.

Compared with densely populated areas, e.g. in Europe or the USA, the Arctic is generally not seriously affected by environmental problems. What problems exist are to a large extent imported - the Arctic is a net recipient of pollution, for example. Acute pollution problems exist locally in many Arctic regions, however, and some of these have the potential of generating wide-ranging disasters, as in the case of sloppy storage of radioactive materials. Other problems, like the build-up of greenhouse gases in the atmosphere, have emissions in southern latitudes as their most important source.

What follows is a brief description of the state of affairs with regard to some environmental problems. It should be noted that in some cases it is difficult to separate man-made environmental effects from natural changes in the environment, as is the case with climate change. What may be perceived by the genera} public as 'scientific facts, should rather be considered as scientific hypotheses. Furthermore, research is in many cases still preoccupied with understanding the *causes* of the various problems, rather than assessing their *effects*. Hence the frequent use of the word 'may' in what follows.

4.2 Types of pollution problems in the Arctic

4.2.1 Global warming/ozone depletion

The most general threats to the Arctic environment are those related to the global change in the Earth's climate and the seasonal reduction in stratospheric ozone. The former stems from emission of various substances which trap radiation from the Earth within the atmosphere - hence the term 'greenhouse effect' - and contributes to rising mean temperatures. Carbon dioxide, released from for example vehicular traffic and oil-fuelled power plants - is the most important greenhouse gas. The depletion of stratospheric ozone - frequently described as 'thinning of the ozone layer' - is due to emission of aerosols which react chemically to reduce the amount of ozone. The consequence is increased exposure to ultraviolet solar radiation at the Earth's surface, which causes for example skin cancers.

An increase in mean temperatures is likely to have far-reaching consequences for all forms of life - human society included. First of all, all plant and animal life has adapted to certain temperature ranges, and changes in mean temperatures over the very short time spans which are envisaged by the UN expert panel[23] may cause many species to become extinct in their present habitats. It is also predicted that the temperature changes in the polar areas will become greater than elsewhere. Secondly, this may entail a change in current precipitation patterns, combining with temperature change to further affect biological systems.

Thirdly, an increase in mean temperatures may cause a rise in the sea level stemming from expansion of sea water as it gets warmer and from runoff from melting glaciers, leaving present land areas permanently under water. The estimates of actual sea level rise are very uncertain, but the United Nations Intergovernmental Panel on Climate Change calculates that the sea level will increase by an average 6 cm per decade. Fourth, a change in oceanic temperatures may cause ocean currents to change direction and velocity. This may in turn strengthen or weaken the effects already mentioned. It is speculated for example

23 Intergovernmental Panel on Climate Change

that the Gulf stream may be weakened, causing a cooling of the Northeast Atlantic, thereby reducing mean temperatures in Scandinavia. Fifth, the role of the Arctic seas as 'carbon sinks' which absorb much atmospheric carbon dioxide and thereby may play an important role in regulating the 'greenhouse effect', may be affected.[24] As yet, none of these effects can be quantified with a substantial degree of precision.

The depletion of stratospheric ozone was first discovered over the Antarctic about a decade ago. Since then the phenomenon has been observed also in the Northern hemisphere, particularly in the Arctic in late winter or spring. The increased exposure to solar radiation, particularly to ultraviolet radiation, may cause considerable harm to biological growth processes. Particularly vulnerable is the primary production of plant and animal plankton in the oceans, the reduced growth of which will have serious repercussions for the entire ecosystems on which these are based.

4.2.2 ***Persistent organic contaminants***

Persistent organic contaminants such as PCB's and DDT are still widely produced and utilised, despite their being banned in many countries. These substances are highly toxic, and persistent in nature. They have been extensively used for many years, in for instance pesticides. They have a high potential for bioaccumulation, which means that pollution levels rise with each level in the food chain. Therefore human beings, birds and large mammals, which are at the upper end of the food chain, are the most vulnerable to this type of pollution. Arctic residents consume much wildlife as food, and may therefore be more exposed to this type of pollution than those living in areas where the diet is based on cultivated products.

The extent and effects of such contamination in the Arctic are not well known. But by extrapolation from other regions, increases in reproductive failure and a higher incidence of cancers maybe predicted. It is known from the Baltic Sea that the reproductive capabilities of marine mammals (seals and small cetaceans) can be seriously harmed by persistent organic contaminants. In some Arctic locations the high concentration of PCB's in polar bears gives concern for their reproduction.

In general, however, concentrations of such substances are not as high in Arctic ecosystems as in heavily polluted areas further south, such as the Baltic Sea, the southern North Sea or the Great Lakes in North America. Persistent organic contaminants are rarely endemic to the Arctic, but reach the area mainly by long range transport from industrialised areas further south from the atmosphere, rivers and ocean currents. Data from Arctic areas on chlorinated organic contaminants are not sufficiently developed to allow for analyses of spatial or temporal development in pollution levels. Nor are there corresponding toxicological data collected to gain any comprehensive insight into the effects of increases in toxic levels.

4.2.3 ***Oil pollution***

Oil pollution has several sources: vessel discharges, vessel accidents, rivers and drilling accidents. The most important source is river input, especially Russian rivers. Oil pollution has more severe effects in the Arctic than in more temperate latitudes. Periods with little or no light reduce ultraviolet radiation and combine with low temperatures to hamper biological decomposition of oil. The low temperatures also reduce evaporation of volatile petroleum components, compared with more temperate regions. In warmer areas, wave action is a major agent in reducing the effects of oil pollution.

In Arctic areas the ice cover reduces the impact of waves, which means that oil decomposition is generally slow in the Arctic. Thereby the period in which the ecosystem is exposed to petroleum is considerably prolonged, and compared with warmer areas the Arctic is therefore particularly vulnerable to oil pollution. Precisely what effect oil spills have on wildlife and other biota is generally not well understood, however. There is no undisputed evidence that oil pollution hampers primary production, but it is obvious that the effects at higher ecosystem levels are devastating.

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24 The increased atmospheric content of carbon dioxide which stems from man-made sources, is about half as large as would be expected if no $C0_2$ were absorbed by natural processes. It is generally believed that the oceans are the major carbon dioxide *sink*. T. Vorren et al. 1992: Nansen Centennial Arctic Progrannme, Norwegian Research Council, 0s10. P. 22.

As is the case with other pollutants, data covering long-term series and a range of different types of cases are lacking. Case studies exist, however, e.g. from the *Exxon Valdez* accident in the Prince William Sound in Alaska. Here it is suggested that severe effects at all levels in the ecosystem are to be expected from large oil spills (in this case 38,000 tonnes.) Autopsies of marine mammals have revealed damage to the brain, in addition to more visible damage such as oil-clogged fur and feathers. Genetic damage to fish is also suspected as a consequence of oil spill.[25]

Estimates of indirect pollution from rivers and ocean currents are scarce, but the former is indicated to be the more significant, in the order of 200,000 metric tonnes annually. Direct oil spills are mostly associated with oil transport and production of petroleum.

4.2.4 ***Heavy metals***

The effects of pollution by heavy metals are most serious in the higher levels of the ecosystem, as concentrations accumulate in the food chain. Heavy metals such as mercury, cadmium and lead are very harmful to biochemical processes in mammals, leading for instance to loss of fertility. As with persistent organic contaminants, this may have the strongest impact upon human populations who depend upon wildlife as an important food source. The levels of various heavy metals (e.g. mercury, cadmium) that can be measured in the air, soils, waters and bottom sediments in rivers and ocean floors stem partly from natural sources, partly from pollution. The highest concentrations are generally found in water, in lakes and rivers. The concentrations found in the air come from long-range atmospheric transport from industrial areas in the south.

Acid precipitation stemming from the south reduces pH values and increases the breakdown of heavy metals in some Arctic areas. Large concentrations may be found locally, associated especially with mining activities. Downstream the Yenisei River, on which major mining and metal processing industries are located, the level of heavy metals are extremely high.

Good time series data for studying the levels of heavy metals are easily obtained from ice cores from glaciers. A sharp increase in levels of cadmium, nickel, mercury and lead can be observed from about the middle of the 19th century, stemming from the onset of large-scale industrial production. Recent analyses indicate a decrease in more recent decades. In the marine environment, concentrations are low compared with areas further south.

4.2.5 ***Radioactivity***

Radioactive pollution in the Arctic stems from several sources in the region: nuclear power plants, testing of nuclear weapons in the atmosphere, accidents, and from storage of radioactive waste from power plants, vessels used in commercial ventures (icebreakers) and military vessels. There is also radioactive pollution from outside the Arctic region, both airborne and carried by ocean currents. The largest impact of radioactive pollution known to date is related to the Chernobyl accident in 1986 and the atmospheric testing of nuclear weapons in the 1950's and 1960's. Russia is the major actor as regards effects on the Arctic. The country has for instance 235 vessels fuelled by nuclear power, producing 20,000 cubic metres of liquid and 6,000 cubic metres of solid waste annually.

One effect of radioactive pollution is exposure to radiation, which is known to have severe effects on all living organisms, for example by mutation of hereditary material. Long-lived radionucleides like Strontium-90 and Cesium-137 remain in vegetation in fall-out areas for very long periods (both have about 30-years half-life), leaving animals and people dependent on the vegetation for food vulnerable to long-term impacts from radioactive materials.

The London Dumping Convention permits dumping of certain types of radioactive waste under special circumstances (see chapter 5). Dumping of radioactive waste was regularly carried out by a number of nations until the early 1980's. Three-quarters of all radioactive waste that has been dumped (officially) is British. The scale of the British dumping operations was large, and its impact could be measured in the Barents and Kara Seas.[26] Russian dumping was carried out

25 New Scientist 13 February 1993.

26 Yablokov, A, 1993: Facts and Problems Related to the Dumping of Radioactive Waste in the Seas Surrounding the Territory of the Russian Federation Government Report commissioned by the President of the Russian Federation, 24, October 1992,

mainly from the late 1950's until the mid-70's, before the London Convention entered into force. Radioactive waste has been dumped in the Barents Sea at least three times, the last being in 1988. Also Germany, The Netherlands, New Zealand, France and the USA - among others - have been dumping radioactive material according to the London Dumping Convention. There is however no doubt that considerable amounts of radioactive waste have been dumped illegally. The gravity of the radioactive pollution problem is highlighted in a recent report (Yablokov 1993) to the Russian President, describing the situation in the Russian north with regards to storage of radioactive waste materials.[27] No cases of dangerous radioactive contamination of the marine environment in the north have been found thus far, however.[28] The most critical problem with regard to radioactive pollution in the Arctic, is probably a number of reactors with nuclear fuel which is being sunk in shallow waters in the Kara Sea.

4.2.6 ***Acidification***

'Acid rain' is a well known phenomenon also in areas far away from where the sulphuric and nitrous emissions generating it are located. Vehicle traffic and oil-fuelled power plants are among the major contributors here. Acid precipitation and acidification of the air in the Arctic stems generally from long-range air transport, though in some places with industrial development local emissions are also of importance.

The effects of acidification are highly dependent upon the geological conditions in the fall-out areas. In regions with very old rocks, as in eastern Canada and Norway and northern Finland, the flora and fauna are more vulnerable to acidification. In such regions, fish have disappeared from lakes in large areas, due to acidification. Also forest growth can be affected by acidification. A highly visible effect in several Arctic locations is the 'Arctic haze' phenomenon. Cold and stable air masses and the absence of precipitation allow pollutants (sulphur, heavy metals) to accumulate, and suspended particulate matter disturbs solar radiation and strongly reduces visibility.

No general body of knowledge as to the effects of acidification in Arctic conditions exists, however. Studies conducted in warmer areas have yielded results which may not be extrapolated to the Arctic, due to fundamental geophysical differences. It is suggested, however, that the Arctic is more vulnerable than more temperate zones.

4.3 Environmental aspects of natural resource utilisation: The sustainable use principle

Not only pollution *per se*, but also the utilisation and management of natural resources is considered an environmental issue, for at least two reasons: first because the extraction of certain resources often creates severe pollution problems, as is the case with e.g. mining operations which can release heavy metals. A second environmental aspect of resource use is concerned with sustainable use of natural resources, both renewable (flow) resources like fish, and stock resources as minerals.

4.3.1 ***Defining sustainable use***

The principle of sustainable use is widely recognised as the sound approach to the utilization of living resources, from the point of view of the environment. The World Commission on the Environment has defined sustainable development as "..development that meets the needs of the present without compromising the ability of future generations to meet their own needs."[29] The application of the principle is not straightforward, for several reasons, and a distinction should be made between renewable resources and stock resources.

4.3.2 ***Sustainable use of renewable resources***

First of all, attempts at giving the sustainable use principle an operational definition are difficult. When moving beyond the Brundtland Commission's understanding of sustainable development as development which does not close options for future generations,

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Administration of the President of the Russian Federation, Moscow 1993.

27 ". monitoring and control over the state of radioactive objects buried at sea is practically non-existent.." (p.17).

28 Ibid., p. 17.

29 The World Commission on Environment and Development 1987 Our Common Future. Oxford University Press, p. 43.

one is faced with a vast array of approaches. Sustainable use of living resources would at least imply that one should not the resource in a reamer which threatens its reproductive potential. Or one could aim higher, and require resource use to be restricted to extracting only what may be termed the 'surplus production', i.e. what a given resource stock produces each year which would serve to increase the stock in question.[30]

In practice, there is a considerable difference between these two interpretations of the sustainability principle. Taking a fish stock considered as having a biomass of 1 million tonnes as an example, the actual quotas that will result from applying the two approaches will vary with many tens of thousands of tonnes.

A second important consideration would be what approach one is to take to adopt toward the resource: species-by-species, or ecosystem. Until now, most resource management regimes have operated on a single-species basis, disregarding the ecological context in which natural resources are used and managed. One example is the collapse of the Barents Sea capelin stock in the mid-80's which sent shock waves through the entire ecosystem. It was to a large extent due to disregard of oceanographic factors and the relationship of capelin to other species in the ecosystem. A sound environmental approach to resource management requires that one takes into account a resources' relationship to other components of the ecosystem. Such multi-species management is however still in its infancy .31

The difficulty of applying a more ecological approach to resource management sterns partly from lack of relevant data and mathematical models of sufficient predictive power to be useful for management purposes. This stumbling block is however surmountable, as demonstrated by the application of multi-species principles in the management of fish stocks in the Barents Sea. Here, capelin quotas are adjusted downwards to take account of other fish stocks preying on capelin.

A second stumbling block is of a political nature. People living in Arctic regions have always utilized the natural resources available to them. Among the marine resources, also whales and seals have been taken, along with fish and sea birds. In all six Arctic rim states, whales have until recently been hunted. The radical animal rights movement and some environmental groups have however vowed to fight the utilization of marine mammals. Whales and seals are not considered parts of the ecosystem, but accorded a human-like status where they are not natural resources. From the point of view of resource management, this renders multi-species management impracticable, because important predators in the ecosystem are exempted from the management regime. Whales and seals consume considerable amounts of fish, and thereby exert a predatory pressure on the lower levels in the ecosystem, along with man, seabirds and other fish species.

Thirdly, the marine mammals issue is itself part of a larger question of *approach* to resource management. While the use of absolute bans on resource use is currently is in fashion with decision-makers as well as environmentalists in the south, there is a distinctly different tradition of thinking in the North as well as in other resource-dependent regions. The 'wise use' philosophy implies that utilization of a resource may be just as good an application of the sustainability principle.[32] The rationale of the former tradition, which manifests itself in proposals for large sanctuary areas (as proposed for the Barents Sea) and in moratoria on the utilisation of certain resources (such whales), is that in systems where private property rights are absent, the utilisation of living natural resources will with law-like necessity lead to the destruction of the resource.

Frequently cited examples are the collapse of fish stocks, overgrazing of mountain ranges by reindeer herds and the decimation of some large whale

30 It is important to keep the terms 'species' and 'stock' separate. While a species is constituted by all individuals within a taxonomic group, a 'stock' is a geographically distinct subgroup within that species. The minke whale species, for example, is found in all the oceans of the world. There are, however, a number of different minke whale stocks, such as the Northeast Atlantic stock.

31 For an application of the multispecies philosophy to the Barents Sea, see Flaaten, O. 1988: The Economics of Multispecies Harvesting. Springer Verlag, Berlin,

32 A good account of the latter perspective is found in Lynge, F. 1990: Kampen om de tilde dyr. Akademisk forlag, København.

species. The response to this is that such examples of over-utilization of natural resources are more accurate descriptions of large-scale resource extraction ventures from the south than of those carried out by people in the Arctic. A case in point is the small-scale whaling carried out by Greenlandic, Icelandic and Norwegian fishermen, which has proved to be sustainable over time, despite the 'common property nature of the resource in question.[33] This 'war of ideas' between protectionists and wise use protagonists is currently one of the major confrontations between Arctic people and strong political forces in the south. The protectionist group often find allies in politicians who see protectionist measures directed at symbolic issues like marine mammals as cheap political points, scored at no cost.

4.3.3 ***Sustainable use of stock resources***
While the sustainable use of renewable resources is a question of tapping surplus production without harming reproductive potential, the use of stock resources will of necessity reduce the resource. The question of sustainability in the case of stock resources therefore relates to whether the extraction operations are carried out with due concern for the environment and future generations, and to the question of how the resource is utilised - will the actual utilization of the resource harm the environment? The basic question is whether the effects of use are *reversible.* The question of sustainability of course has a bearing upon renewable resources as well - the development of hydroelectric power projects may cause severe despoliation of landscapes by building of dams, roads, etc.

In view of the low self-repairing capacity of the Arctic environment, almost all types of mining operations, hydroelectric development and water diversion schemes, and oilfield exploitation are likely to have irreversible effects. Roads are built, mining shafts sunk, vast areas are inundated and large dumps established, to mention but a few examples. This causes the vegetation to disappear or change, and in areas with permafrost the removal of vegetation leads to increased erosion. The building of dams and roads destroys wildlife habitats, causing distress to animal populations. In many instances the loss of habitat is a greater threat to animal populations than the direct harvesting of these populations. A case in point are the wolves in northern Scandinavia, which are threatened with extinction basically because of the reduction of their habitat.

5. The political perspective: Institutional development

5.1 Introduction

The political perspective on Arctic development is concerned with mechanisms that are established to manage resources and protect the environment, and to distribute benefits and costs stemming from development. The question of sustainable use of the environment and natural resources is one of appropriate institutions of establishing agreement among relevant parties on which environmental standards to abide by and of establishing policies and organizational structures to that end.

There are two important sets of questions concerning the international agreements on environmental and resource management co-operation in the Arctic. The first concerns the scope of agreements, with regard to geographical coverage, types of pollution or natural resources covered and which states that participate. The second set of questions concern the strictness of the regime in question, to what extent it obliges the parties to take effective measures against for example emissions of harmful substances. The two basic questions in the context of Arctic environmental and resource management are therefore: 1) Do the various institutions have adequate scope? 2) Are they sufficiently restrictive? Neither question lends itself to quick and definitive answers. What follows should

33 All minke whale stocks in question appear to have sustained the catch they have been subjected to well. The Northeast Atlantic minke whale stock, for example, is estimated by the IWC Scientific Committee to be in the order of 87,000 animals. For an introduction to the literature on sustainable resource use under common property conditions, see Ostrom, E. 1990: Governing the Commons The Evolution of Institutions for Collective Action. Cambridge University Press, New York.

therefore be viewed more as a review of a number of international agreements in the light of these questions, rather than an accurate analysis thereof.

In the following, institutions for dealing with environmental issues (both pollution and resource management) will be reviewed. Few of the institutions addressed are *Arctic* in the sense that they apply solely to that region. Some are bilateral (such as many fisheries agreements), some are regional and some have a global scope. A selection of the most important institutions (international agreements and their accompanying Organizations) has been made. The chapter concludes with a review of more recent political processes intended to tackle issues relating to economic development and the environment.

5.2 Environment-related institutional development

Many environmental problems are international by nature: the release of nuclear substances in the waters off Great Britain has repercussions in the Arctic, as has the emission of sulphuric acid from industrial processes in central Europe. The international nature of environmental problems requires international approaches. Many environmental agreements are therefore of a global or regional nature. The question here is whether the Arctic coverage of such agreements is satisfactory, and whether the rules that are established to regulate the use of the Arctic are sufficiently rigorous to offer appropriate protection to the environment.

Environmental treaties are difficult to categorise in a coherent manner, as treaties vary widely with regard to scope and direction. Some are global, others bilateral; some are directed at one substance or resource while others have a far wider range. Marine pollution agreements, for example, are often directed at the medium of pollution, rather than at specific substances. Both the London Convention and the MARPOL convention (below) are therefore relevant to a number of pollution problems in the Arctic. A framework for most legal instruments is however the 1982 Law of the Sea Convention, which lays down the basic rights and duties of maritime states.

5.2.1 The 1982 *Law of the Sea Convention and the Environment*

The 1982 Law of the Sea Convention constitutes a framework for international environmental law regarding the oceans, by virtue of the Convention's being customary international law. It is stated the "States have the obligation to protect and preserve the marine environment" (article 192). This general duty goes along with the right of states to ".. exploit their natural resources pursuant to their environmental policies. .", but these policies shall in turn be aimed at protection and preservation of the marine environment (article 193). Furthermore, states have a duty to co-operate on a global basis and as appropriate on a regional basis to protect the marine environment (article 87), from a variety of sources: land-based, seabed, dumping, vessels and the atmosphere (articles 207-212). As regards ice-covered areas, coastal states have the right to establish and enforce regulations to prevent marine pollution from vessels within the exclusive economic zone, provided such regulations are non-discriminatory in nature and have due regard to navigation (article 234).

5.2.2 *International environmental agreements*

A large number of environmental agreements relevant to the Arctic are, or will soon be, in force. They can be categorised according to the medium of pollution. A number of treaties relate to atmospheric pollution. Among the most important is the *Convention on Long-Range Transboundary Air Pollution (LTRAP).* The LTRAP treaty encompasses North America and Europe, and entered into force in 1983. The general purpose is to protect the environment against air-borne pollution and to reduce and prevent polluting emissions.

The treaty is administered by the UN Economic Commission for Europe (ECE), and a number of protocols concerning specific substances have been negotiated under its auspices. Among these are protocols for reduction of emissions of sulphur (Helsinki Protocol, 1985), nitrogen oxides (Sofia Protocol, 1987) and volatile organic compounds (Geneva Protocol, 1991). The protocols commit the parties to submit national reports on emission data and to adopt policies to

reduce emissions. The LTRAP is thus relevant to a number of the Arctic pollution problems discussed in chapter 4, specifically various forms of acidification (1985 and 1988 protocols). The LTRAP does however lack specific measures to deal with heavy metals and persistent organic contaminants. Work is under way to cover also these areas.[34]

Also covering atmospheric pollution is the Vienna Convention for the Protection of the Ozone Layer/Montreal Protocol on Substances that Deplete the Ozone Layer. The Vienna Convention entered into force in 1988. It is global in scope, and are directed at protecting the environment from activities which alter the stratospheric ozone. The Montreal Protocol (in force since 1989) is geared to implement measures to reduce and eliminate emissions that deplete the ozone layer. A number of chemical substances are listed as harmful to the ozone layer, and the parties (more than 90) undertake to reduce the production of certain substances, co-operate on research and to review control measures. In 1992 the parties agreed to a four-year phase-out period for clorofluorcarbons to 1996. The agreement is highly relevant in the Arctic context, as the reduction of the ozone layer is particularly strong in polar areas.

Also related to air pollution is the 1992 framework *Convention on Climate Change* which has as its objective to stabilise greenhouse gas concentrations in the atmosphere at levels which do not cause serious harm to the climate. It shall also secure food production, which may be threatened by climate changes. The member states have agreed to implement measures to reduce harmful emissions of 'greenhouse gases' not covered by the ozone regime (the Montreal Protocol), to promote scientific co-operation and to regularly review the implementation of the Convention. The Convention has a global scope with regard to both membership and geographical coverage. It is also highly relevant to the Arctic as climate change will make itself heavily felt here. The Convention framework does however need further elaboration in the form of specific protocols in order to become more effective.

A number of conventions are related to pollution of the marine environment. *The Convention on Prevention of Marine Pollution by Dumping Waste and other Matter (the London Dumping Convention)* has a global scope and is aimed at the dumping of substances that are harmful to human beings and marine species. The parties are committed to prevent marine pollution by dumping of any substances. The Convention establishes two amexes. The disposal of substances listed in amex I is prohibited, while substances in annex 11 maybe dumped subject to a permit being given. In annex I, mercury, organohalogenic compounds and high-level radioactive waste are listed. Low-level radioactive waste and waste containing for example copper, zinc, cyanide and lead are listed in annex II.

A system for issuing permits for dumping of low-level radioactive waste is co-ordinated with the International Atomic Energy Agency (IAEA). A ban on the dumping of such substances has however been in force since 1983. The London Convention is highly significant for the Arctic, in that it is a major instrument in preventing pollution of the Arctic Ocean. The dumping of radioactive waste in the Arctic, for example, is bamed by this agreement.

Addressing the same types of pollution problems, but with a regional scope (Northeast Atlantic) are the 1972 Oslo Convention and the 1974 Paris Convention. The 1972 *Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft (Oslo Convention)* is directed at the prevention of marine pollution in the Northeast Atlantic region. It prohibits the dumping of hazardous substances from ships and aircraft, but also provides a mechanism for licensing the dumping of certain substances. The dumping of those listed in annex I is totally prohibited. Annex II substances may be dumped when a licence to do so is granted.

The Oslo Convention is supplementary to the *Convention for the Prevention of Marine Pollution-from Land-based Sources (Paris Convention).* The Paris Convention came into force in 1978, and aims at preventing of land-based pollution (by e.g. river run-off) of the Northeast Atlantic. In 1986 the convention was amended to include also pollution via the atmosphere. Annexes list various substances which the parties oblige themselves to prevent from entering the marine environment. In 1992, a *Convention for the Protection of the Marine*

34 International cooperation here has had substantial merit, in that for example sulphur emissions have diminished considerably in Europe during the 1980s (-22 per cent.).

Environment of the Northeast Atlantic was adopted, to replace the Oslo Convention on the issue of dumping of waste and the Paris Convention on waste entering the sea via rivers. The purpose of the treaty is to conserve and restore marine ecosystems and to prevent pollution by adopting the regulations required to this end. These agreements supplement the London Convention in that part of the Arctic bordering the North Atlantic.

Also related to marine pollution is the 1973/78 *International Convention for the Prevention of Pollution from Ships (MARPOL).* It is operated by the International Maritime Organization (IMO). The purpose of the convention, which is global in scope, is to prevent pollution from ships and other vessels (e.g. oil rigs). The 1978 Protocol to the Convention states that a vessel requires an International Oil Pollution Prevention certificate in order to be deemed seaworthy. A number of other international agreements are also relevant for the shipping of oil in Arctic waters, among these the 1990 International Convention on Oil Pollution Preparedness, Response and Co-operation (not yet in force), the 1971 International Convention for the Establishment of an International Fund for Compensation for Oil Pollution (the Fund convention) and the 1969 International Convention on Civil Liability for Oil Pollution damage.

Some of these agreements have a limited geographical scope, and the Arctic region is not well covered. Furthermore, the standards established, for example with regard to transportation, may not be adequate in the ecologically vulnerable Arctic context where both regular merchant vessel traffic and offshore drilling for oil occur.

In case of nuclear accidents, the *Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency* was concluded in 1986, to facilitate international assistance in the case of a nuclear accident. *The International Atomic Energy Agency* (IAEA) is central in this work, but bilateral co-operation is also sanctioned by the treaty. The IAEA was established in 1957 to organize research and establish standards for the peaceful use of atomic energy. It also has an important role in inspecting the world's nearly 800 nuclear installations. The IAEA is party to a number of international agreements, among these the London Dumping Convention. The assistance convention has a global scope, and therefore applies also to nuclear emergencies in the Arctic.

Of particular relevance to dealing with nuclear-related problems is also the 1989 *Convention on the Control of Transboundary Movement of Hazardous Wastes and their Disposal (Basle Convention),* which was adopted to reduce transboundary movements of environmentally harmful substances. The convention has a global scope, and the parties commit themselves to prohibit the export of harmful substances if the receiving state does not accept the import.

5.2.3 *Scope and restrictiveness in the Arctic context*

The number of environmental agreements relevant to the Arctic is considerable. That is not to say, however, that the scope of these agreements is sufficient with regard to types of pollution covered. Nor is it established that the restrictiveness of the existing agreements is satisfactory. Environmental standards can be set too low, and control with implementation of measures too lax.

Of the various pollution problems described in chapter 3, three stand out as not well covered or treated by existing agreements: first of all, dealing with nuclear waste material in a satisfactory way. Existing legal instruments are probably not sufficiently restrictive, and in addition the established international rules are not always complied with. Solid radioactive waste was dumped in the Kara Sea at least until 1990, despite the fact that the USSR was (and Russia is) party to the London dumping convention which has prohibited such dumping since 1983.[35] Secondly and thirdly, atmospheric as well as marine and land-based pollution with heavy metals and persistent organic contaminants is not adequately covered by the existing agreements. Under ECE auspices, protocols to the LTRAP Convention covering these substances are now being negotiated.

5.3 Natural resource-related institutional development

As with the pollution-oriented treaties, the resource-oriented treaties vary with regard to number of resources covered, number of parties involved and

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35 *Aftenposten* 9.11.1992

geographical coverage. Likewise, they also differ with regard to how strictly resources can be managed. The Law of the Sea Convention establishes the legal context for other agreements, and should therefore be considered at the outset also here:

5.3.1 The 1982 ***Law of the Sea Convention and resource management***

While the oceans traditionally have been a 'common ground' for all manner of use - fishing, shipping, warfare - the post world war II period has seen dramatic changes to the legal agreements of the oceans. Coastal states have gradually acquired rights over large ocean areas and the natural resources in them as the traditional freedoms of the high seas became too costly - foreign fishing fleets were ravaging their fish stocks and pollution threatened their coastal waters. When in the early 1970's Iceland challenged the right of British trawlers to fish within a 50-mile zone off their coast, it was at the vanguard of the development of coastal states' rights in international law.

A few years later, however, the United Nations Law of the Sea Conference confirmed that coastal states have sovereign rights to the natural resources in a 200 mile exclusive economic zone (EEZ). In the 1982 Law of the Sea Convention it is thus established that coastal states have "sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living." (article 56). Thereby most of the world's fish resources were brought within the jurisdiction of coastal states, as more than 90 per cent of the world's fish catch is taken within 200 nautical miles off shore.

With regard to living marine resources, coastal states shall determine allowable catches in their EEZ, but the exercise of this right is subject to a duty to take into account the best scientific evidence and to ensure that resources are not overexploited (article 61). The coastal state shall furthermore promote the objective of optimum utilization of the living marine resources in its zone (article 62). Nationals of other states fishing in the zone shall comply with the conservation measures laid down by the coastal state.

A number of fish stocks are 'straddling stocks' in the sense that they occur within the EEZS of two or more coastal states or in one or more EEZ'S and international waters beyond the EEZ's. In such circumstances the convention vaguely prescribes that the coastal state(s) and other states fishing on the stock shall seek to agree on conservation measures (article 63). Marine mammals are exempted from the duty to optimum utilization, and states are required to co-operate in their management (article 65). Whales are to be managed through 'appropriate international organizations'. As regards fishing outside the EEZ, all states "..have the right for their nationals to engage in fishing on the high seas" (article 116). Here the traditional freedom of the high seas prevails, however, subject to states' treaty obligations and the duty to co-operate with other states as laid down in articles 63 and 118.

As to the mineral resources on the continental shelf, there are two relevant international frameworks: The 1958 Geneva Convention on the Continental Shelf provides that the coastal states have sovereign rights over the natural resources on the continental shelf (article 2). The continental shelf is defined rather flexibly, its outer limit being "..200 metres, or beyond that limit, where the depth of the superjacent waters admits of the exploitation of the natural resources..". The 1982 Law of the Sea Convention restricts this definition somewhat, by stating (broadly speaking) that when a continental shelf stretches beyond 200 nautical miles, it shall not exceed 350 nautical miles from the coast (article 76).[36] As the 1958 Convention is legally in force, while the 1982 convention is not, the former carries greater legal weight. As with living marine resources within the EEZ, the coastal state has sovereign rights for the purposes of exploration and exploitation of natural resources on the continental shelf (article 77).

5.3.2 ***Resource management: Multi- and bilateral institutions***

The most general resource management treaty applicable to Arctic resource management is probably the 1992 *Biodiversity Convention*. The convention, not yet in force, was established to provide an international legal framework for conserving biological diversity and ensuring its sustainable use. The parties undertake to establish measures to integrate sustainable use and

36 "Coast" in this case means the baselines, which are the lines from where the territorial seas and the EEZS are measured.

conservation of biodiversity in existing national legislation on resource management and environmental issues. The principles on which it is based have important implications for resource management and development, as an ecosystem approach is implied and habitat protection is seen as essential. The Convention is global with regard to membership and geographical scope.

As regards fisheries, a number of agreements have a direct bearing upon Arctic fisheries.

Before the advent of 200 mile exclusive economic zones, to the extent fisheries that were managed, they were so through regional Organizations. In the Northwest Atlantic, for example, the International Commission for Northwest Atlantic Fisheries (ICNAF) was charged with managing the region's fisheries. Generally, these regional fisheries organizations were not successful in that they were not able to regulate fishery by setting quotas, for example. With the introduction of 200 mile EEZ, most fishery management came under the jurisdiction of nation states, and the regional bodies became less important.

Since many marine living resources migrate between various nations' EEZ, and between these and the international waters outside the EEZ's, international co-operation in living marine resources is not redundant, however. The bulk of this co-operation is bilateral, but regional co-operation is still important in some areas, as for example the Northwest Atlantic and in the European Community waters. We shall review some bilateral agreements with relevance to Arctic development, and then review some multilateral management institutions. At the outset we shall however consider the issue of international scientific co-operation, which is essential to resource management.

In the Atlantic part of the Arctic, *The International Council for the Exploration of the Sea (ICES)* is the most important scientific body, both as regards fisheries management and marine environmental problems. ICES was established in 1902, to promote marine exploration and research. ICES is a scientific body, governed by scientists rather than the states party to the agreement. ICES provide the scientific advice on which fisheries management in a number of bi- and multilateral organizations is based on. Furthermore, environmental regulations in the north Atlantic area, undertaken under the auspices of the regional marine environment protection agreements, is also based on ICES advice.

At the bi- and trilateral levels, there are agreements related to the Atlantic Arctic between Russia and Norway, between Iceland, Greenland and Norway, and between Greenland and Canada. To take one example of how these agreements are structured, the Joint Norwegian-Russian Fisheries Commission, established by a reciprocal fisheries agreement, manages a number of fish stocks which inhabit the two parties' waters. Management is based on scientific advice from the ICES, and consists basically in setting total quotas for catches and establishing technical regulations relating to fishing seasons, gear to be used and areas in which fishing is prohibited. The parties also co-operate on control of fishing operations to ensure that regulations are complied with.

In the Northeast Atlantic the 200 mile economic zones cover most resources, so the bilateral arrangements cover most resources and management problems. The *Northeast Atlantic Fisheries Commission* (NEAFC) is currently concerned only with the management of blue whiting fisheries. In the Northwest Atlantic, fish stocks are migrating into international waters, so in this area the regional organization, the *Northwest Atlantic Fisheries Organization (NAFO)*, plays a significant role in fisheries management. Problems of over-fishing of quotas and illegal, 'pirate' fishing in the area are significant, however, and are a partial explanation for decline in groundfish stocks off Canada.

In the north Pacific, current international management Organizations include the INPFC *(International North Pacific Fisheries Commission)*, the PSC (Pacific Salmon Commission), and some other councils where affected countries discuss management practices. The US have scientific co-operation with Asian governments, and the Pacific Salmon Treaty, signed in 1985 by the USA and Canada, created common management efforts between the two countries. The Bering Sea has seen serious over-fishing of several fish stocks, due to the open access nature of fisheries in the 'doughnut hole', the area beyond the 200 mile zones of the USA and Russia, but totally encircled by them.

Following the drastic decline in the stock the USA unilaterally closed the

pollock fishery in its own 200 mile zone, and the Russian government introduced similar measures in its waters. The US Senate introduced a bill in 1992 which denied access to US ports to vessels which were fishing in the 'doughnut'. In August 1992 the six countries involved in the fishery agreed to a moratorium on fishing in the hole for 1993 and 1994.

Moving from fish to mammals, the *Convention on the Conservation of Migratory Species of Wild Animals (CMS - the Bonn Convention)* is of some relevance to the Arctic in the sense that a number of migratory animals are found in the region. The purpose of this treaty, which entered into force in 1983, is to conserve migratory (crossing borders between countries) species of wild animals. Attempts at conservation include protection of habitat as well as regulating the harvest of such species.

The treaty is a framework treaty, under which a number of subsidiary agreements have been concluded, and of these a small cetaceans agreement for the North Sea and the Baltic Sea. To have any practical effect in the Arctic, specific agreements to this end under the Convention have to be concluded.

The International Whaling Commission (IWC) was established by the 1946 *International Convention for the Regulation of Whaling* (ICRW), with the explicit purpose of providing for the "proper conservation of whale stocks and thus make possible the orderly development of the whaling industry" (ICRW, preamble). The IWC is open to any country regardless of its economic interests in the resource, is global in reach and covers the large whale species.[37] Whaling is to be regulated by the amendment of a flexible Schedule, which contains the detailed regulations on quotas, seasons, etc. Amendments to the Schedule must satisfy certain criteria, and they shall be based on scientific advice. Parties which disagree to specific decisions may reserve their positions and be unbound by the decision.

Since the late 1970's the IWC has been 'occupied' by interests which exploit the organization for other purposes than it was established for. In 1982 a 5-year 'moratorium' (O-quotas, not a ban) was established, to remain in force for 1985/86. The O-quotas have not thus far been changed, even though the required scientific basis for doing so is in place. The IWC's disregard of its own Scientific Committee made the Chairman of the latter resign in May 1993. The Commission's relevance to Arctic nations is significant, as it is to manage a number of whales which are hunted in the Arctic.

As a response to the developments in the IWC, Iceland, Greenland, the Faeroes Islands and Norway have initiated a more management oriented regime, the *North Atlantic Marine Mammals Commission (NAMMCO). The* NAMMCO has a regional scope, admits only parties with distinct interests in resource management and is concerned with the conservation and management of seals and small cetaceans. Canada and Russia also participate in the NAMMCO, in an observer capacity. *Polar Bears* are protected by a 1973 treaty to which the Arctic rim-states are parties.

Stock resources are in most cases found within the jurisdiction of one state, or are shared between two states. The significance of international agreements for these resources therefore lies in the environmental problems generated by their production, and these are treated in chapter 4.

5.3.3 *Scope and restrictiveness of resource agreements in an Arctic context*

What can be said, then, about the scope and restrictiveness of resource management agreements in the Arctic? The Law of the Sea Convention establishes a framework giving coastal states wide powers over resource management in the oceans. The management of resources within the 200 mile economic zones appears to be well covered geographically and with regard to species covered. Outside the 200 mile EEZ the situation is more problematic, not least as regards fish stocks migrating from 200 mile zones and into international waters. In the North Pacific marine mammals are not adequately covered, while in the North Atlantic the North Atlantic Marine Mammals Commission covers small cetaceans and seals. Large whales are covered by the International Whaling Commission.

When it comes to the question of restrictions, the depleted state of fish stocks in the Northwest Atlantic as well as in the North Pacific indicates that there are still some way to go in improving management and control regimes, inside

37 It is a matter of dispute within the Commision exactly which species the ICRW covers.

as well as outside the 200 mile exclusive economic zones. In international waters the fisheries management regimes are basically weak with regard to management and control, and international negotiations are under way to improve the legal status here (see below).

What distinguishes areas with a successful fisheries management record from the less successful ones, is difficult to pinpoint. But at least three factors can be indicated: First of all stricter management measures, applying a version of the sustainability principle which allows for a smaller part of the annual 'surplus' production of the fish stock in question to be taken out. Second, a concern for ecology in management, by the application of certain simple multi-species insights when fixing quotas. Third, stricter controls on fishing so as to ensure that regulations are complied with. And last, but not least: Aid from nature in the form of favorable oceanographic conditions.

5.4 Political dynamics: dealing with the Arctic challenges

5.4.1 Introduction

The ecological imperatives of the Arctic are pitted against the increasing threat from pollution from sources outside as well as inside the Arctic, the latter stemming from economic development within the region. At the same time we are faced with a political structure which leaves most of the influence over the political processes in which these challenges are tackled with the centres in the south, thus marginalizing the people in the Arctic politically. Thus, the various Arctic peripheries are parts of different centres: North Norway relates to Oslo, Alaska to Washington, Swedish Lapland to Stockholm, and so on. This renders co-operation for dealing with Arctic challenges among the various peripheries difficult.

What political initiatives are being taken to remedy the problems discussed above, relating to the scope and restrictiveness of environmental protection and resource management in the Arctic? How are these efforts linked to the issue of economic development in the region? And how is the concern of the Arctic population for having a say in the political processes affecting their environment and their opportunities for economic development taken care of? We shall in this section first review a political initiative designed specifically at treating these three questions in a single political *structure.* Then we shall recount the efforts to create a special environmental regime for the Arctic, before briefly describing a number of other relevant initiatives.

5.4.2 The *Barents Region*

The Barents Region, most of it north of the Arctic Circle, encompasses the three northern counties in Norway (Nordland, Tromsø and Finmark), the northernmost county in Sweden (Norrbotten) and in Finland (Lapland), and the two northeastern counties of Russia, Murmansk and Arkhangelsk. Geographically it covers an enormous area, stretching northwards to include Novaya Zemlya and the Frans Josef Island, and including also the Barents Sea. The land area in the region covers about 1 million square kilometres, of which Arkhangelsk county alone covers about half. Some 3.6 million people live in the region.[38]

The region was formally established in January 1993, when the Ministers of foreign affairs from the Nordic countries and Russia adopted a ministerial declaration setting out the goals and structure of the initiative. The European Community also signed the declaration, as participation in the project is intended to be open-ended. Representatives from a number of other countries, among them the other Arctic countries Canada and the USA, were also present. These may formally join in the project at a later stage. The basic reason for organizing the Barents Region as an open-to-all venture, is that the efforts needed in the environmental field in particular are of an immense magnitude, and that to Russia a major aspect of the project is its 'window to the west' character.

The Barents region was conceived of by former minister of foreign affairs in Norway, Thorvald Stoltenberg. The basic idea was to provide a formal structure for regional co-operation in the north, following the breakdown of old political and economic structures in the east. The major motivations for the project are

38 For a thorough description of the Barents Region project, see the white paper from the Norwegian Government on Norwegian polar research, **St.meld.** nr. 421992-93: Norsk **Polarforskning**

ecology and security policy The ecological motive centres on the need for massive aid to the Kola region to tackle the region's massive environmental problems. The most important of these are related to upgrading of mining industries, the pollution from which is of catastrophic dimensions, and the need for massive efforts to ensure safe treatment of nuclear waste.

The security policy motive lies in the Nordic countries' interest in political stability in Northwest Russia, which to some extent can be secured by integrating the Russian economy into the western economic structure. Regional economic integration is seen as a means to stabilise the region politically. Traditionally, there had been a great east-west trade in the north, and the Barents region is seen as a means of providing a superstructure for economic development in the region. The Norwegian government supports a number of projects aimed at strengthening the economic ties between east and west in the region, in building infrastructure and supporting industry-level co-operation in the fisheries sector, in cold climate technology, in minerals development and in tourism, to mention some. The ministerial declaration emphasizes that economic development must accord with the principle of sustainable use, and explicit reference is made to the Rio Declaration and the Agenda 21.

The formal structure of the project consist of a two-tiered system: a Barents Region Council consisting of the parties' ministers of foreign affairs, and a Regional council where the seven counties and the region's indigenous population are represented. The Barents Council is to co-ordinate the project at state level, ensuring appropriate relations to e.g. the Rovaniemi process. The Regional Council, which was established by a Protocol on regional co-operation, is the 'motor' of the Barents Region Co-operation, and is responsible for initiating projects and releasing the potential for economic development that the new structure implies. It is emphasized that the initiative as well as the basic political processes related to the project lies at this regional level, so as to ensure that those most affected by decisions shall decide on the direction and speed of the development and co-operation.

An important aspect of the Barents Region project is that it matches trends towards regionalization ignoring state boundaries which can be observed in Europe. More than 50 such regional entities exist in Europe alone. The Baltic Region, established in 1992, is one of the more significant of these.

5.4.3 *Building an environmental regime for the Arctic: The Rovaniemi process*

The discussion of the different types of environmental problems faced by the Arctic revealed that a number of *lacunae* exist with regard to institutions with appropriate scope and adequate strictness to deal with the problems in an adequate reamer. The environmental problems of the Arctic are growing and becoming rapidly more serious. And the Arctic plays a crucial role in the global climate, a fact which gives rise to further concern for the Arctic environment.

This state of affairs has been commonly recognized for some time, and it was the basis for the Arctic Environmental Protection Initiative taken by Finland to promote co-operation among the Arctic states[39] on environmental protection in the Arctic. The first preparatory meeting in this *Rovaniemi process* was held in 1989, where it was agreed to formulate a joint strategy for action and to undertake a number of studies to identify the most pressing environmental threats. In 1990 a second preparatory meeting was held. This time Germany, Great Britain and Poland participated in addition to the eight, and with a number of observers: The Nordic Saami Council, the Inuit Circumpolar Conference (ICC), the United Nations Environment Programme (UNEP) and the United Nations Economic Commission for Europe (ECE).

At the third preparatory meeting an Arctic Environmental Protection Strategy was finalised, identifying four areas where efforts were to be concentrated: monitoring and assessment of the environment, conservation of Arctic fauna and flora, protection of the marine environment, and emergency preparedness and response.

In July 1991 a ministerial meeting was held, adopting a ministerial declaration on the Arctic environment. The Declaration on the Protection of the Arctic Environment acknowledges the seriousness of environmental threats to

[39] In this context, the "Arctic" countries includes the six rim states, plus Sweden and Finland.

Arctic ecosystems resulting from pollution, and emphasizes the parties' responsibility to protect and preserve the Arctic environment. The Declaration adopts an *Arctic Environmental Protection Strategy* (AEPS) and commits the parties to an attached Action Plan including scientific co-operation, environmental impact assessment of economic development, and implementation of measures to reduce the adverse effect of pollutants in the Arctic.

A number of principles for environmental co-operation are laid down. Use and management of natural resources shall be based on an understanding of the Arctic ecosystem. Developments affecting the Arctic shall take into account the impact of resource exploitation on the environment to ensure that changes in nature are minimized. And sustainable utilization, the needs and values of indigenous peoples are emphasized. As part of the Strategy an Arctic Monitoring and Assessment Programme (AMAP) was established, along with programmed for Protection of the Marine Environment in the Arctic; Emergency Prevention, Preparedness and Response in the Arctic; and Conservation of Arctic Flora and Fauna.

The purpose of the Arctic Monitoring and Assessment Prograrnme is to monitor selected indicators and to assess the impact of pollutants in the environment and to separate these from natural causes. Priority is given to persistent organic contaminants, radioactive pollution and certain heavy metals. As the discussion of international environmental agreements above revealed, these substances are not well institutionally covered for the Arctic area, while e.g. problems related to climate and the ozone layer are covered in other forums. On the basis of AMAP, the member countries will receive reports on status and trends with regard to pollution in the Arctic, and the ecosystem effects of this pollution. Also emerging problems may be detected at an early stage. AMAP is based on existing research programmed - its task is to revie-w and co-ordinate the research efforts in the member nations. The AMAP is set to work through an AMAP Task Force. A secretariat has been established in Oslo.

In the programme for Protection of the Marine Environment in the Arctic the 8 parties have recognized the need to take action to prevent harm to the marine environment, and that such action is to be consistent with the provisions of the 1982 Law of the Sea Convention. They undertake further to work to strengthen the international rules relevant to marine environmental protection and to adhere to the strictest relevant international standards.

The third programme area, Emergency Prevention, Preparedness and Response in the Arctic, is directed in particular towards development and transport operations within the Arctic, and the need to prepare to deal with accidents resulting e.g. in oil spills or radioactive fallout. A number of bilateral and multilateral agreements on tackling accidental pollution exist, viz. the International Convention on Oil Pollution Preparedness and Response and Co-operation. The parties commit themselves to evaluate existing legal mechanisms with regard to scope and to investigate the possibility of strengthening co-operation with regard to actions to respond to accidental pollution, co-ordination of policies, the establishment of a system for early notification in the case of significant accidental pollution or the threat of such, and measures to provide information to the public.

Conservation of Arctic Flora and Fauna is the last programme area, the importance of which lies not least in the importance of flora and fauna to the culture and survival of people living in the Arctic. Arctic flora and fauna in the circumpolar area are threatened by pollution, large scale development projects and deterioration of these species' habitats. Most relevant international agreements to abate such problems are global in scope, as for example the biodiversity Convention, or have a wider regional application.

The only relevant 'Arctic' treaty here is the 1973 Polar Bear Agreement. The parties thereby agreed to setup a 'mechanism' for flora and fauna in the region to promote the exchange of information and make scientific recommendations, and undertake to co-operate in conservation of Arctic flora and fauna, the biological diversity of these, and their habitats. Furthermore, they will develop more effective conservation regulations. In this context the parties commit themselves to consult the International Arctic Science Committee.

The next ministerial meeting will be held in Nuuk in September 1993. Progress on the four programme areas will be

reviewed, and in addition organizational matters will also be addressed. An Arctic Environmental Fund has been discussed informally, but is not likely to be an issue yet. A permanent secretariat has also been considered, but it appears that there is agreement among the 8 parties that no permanent secretariat is needed, as most favour a flexible approach.

5.4.4 ***Other political processes***

A number of other ongoing political processes merit mention here. Some, like the Canadian Arctic Council initiative, are directed specifically at the Arctic, while others have a global significance, such as the high seas fisheries negotiations. Furthermore, while the latter is directed at resource management challenges, the Northern Forum process is aimed at providing greater political influence for people in marginal regions.

First of all, the Canadian initiative for an *Arctic Council* - whose ultimate mandate is conceived of as transforming "..the circumpolar region into domain *of* enhanced civility ".*40* More specifically, the Council is thought of as having an important role in helping to save the Arctic environment, in ensuring peace and security in the Arctic, and in securing the rights of the indigenous populations in the Arctic. It is meant to complement other international forums relevant to these problems, and shall not replace any existing bi- or multilateral agreement. Among the basic principles to guide the further development of the initiative, are consensus approach, concern for the special needs *of* the region and openness to non-Arctic states wishing to take part in pan-Arctic co-operation.

Secondly, it has been shown above that the agreement for regulating *fishing on the high seas* and on fish stocks straddling 200 mile EEC's and the high seas is deficient in several respects. This was the basis for a Canadian initiative during the preparatory negotiations for the United Nations Conference for Environment and Development in 1992, to extend coastal states' rights in the management and control over high seas and straddling stocks fishing. These negotiations are now under way, and it is expected that a new set of rules in this area will be adopted at some stage. In this process also the principles by which fish resources are being managed have been addressed.

The Northern Forum was initiated as early as 1971, consisting of the regions of the north and designed to address northern challenges. In 1990 it was agreed that the Northern Forum should function as a "..mechanism for regular interactions among those who are northern leaders. ..". Since then an organizational structure has been established, and a Northern Forum Agreement was adopted at a meeting of eleven regions in 1991. A number of regions from countries not usually associated with Arctic affairs participated: Mongolia, Japan, Korea and China. Meetings are held biannually. The Northern Forum is basically concerned with economic development, having adopted a number of projects to this end: the northern sea route, capital formation in the North and east-west air routes. That is not to say that environmental issues are not important to the body - projects also exist on wildlife studies.

5.5 Conclusion

It has been established that a number of agreements and institutions of relevance to the Arctic should address the three questions posed at the outset of this section. There are political initiatives which address problems relating to the scope and strictness of environmental protection and resource management. The high seas fisheries negotiations will be important in this respect. To some extent efforts directed at better resource and environmental management are linked to the issue of economic development, as in the case of the Barents Region. As regards the concern of the Arctic population for having a say in political processes, the Arctic Council as well as the Barents Region and the Northern Forum address this.

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APPENDIX II

Indigenous Peoples of the Arctic

by Jens Dahl

1. Introduction

The Arctic is the homeland of a number of indigenous peoples. They see this land as their land, used and occupied by them since time immemorial. Each square meter of the vast tundra and taiga belongs to the territory of one of the Arctic cultures. The primary aim of all these peoples is to have their collective rights to these territories recognised by the world community. This quest can not be more relevant than in 1993, in the United Nations' Year of Indigenous Peoples: A New Partnership.

The use of notions like 'The Arctic Wilderness' or the 'Arctic Frontier' violates fundamental territorial and cultural rights and aspirations of indigenous peoples. But the fact is that all indigenous peoples of the Arctic have been colonised. History can not be changed, but the appeal for 'A New Partnership' should be taken seriously. A number of steps have already been taken recently in some part of the Arctic.

This report will focus on indigenous claims for a new partnership and their backgrounds: the historical factors, the demographic facts, cultural characteristics etc. There are factors common to all indigenous peoples of the Arctic and there are elements that are unique to only one group, one region. Some problems are common to all Arctic peoples, but the ability to cope with them varies. The ambitions and the potentials for reaching the aspired goals vary, but some kind of control and empowerment seem to be essential.

2. The Peoples of the Arctic

2.1. The indigenous peoples

The countries bordering the Arctic are the United States (Alaska), Canada, Denmark (Greenland), Iceland, Norway, Sweden, Finland and Russia. Except Iceland, all of these countries have indigenous peoples living within the Arctic region. In Canada, USA and Russia there are a number of indigenous groups living south of the Arctic region. These people will not be considered in this paper.

Who are indigenous peoples? The ILO-Convention 169 ("Convention Concerning Indigenous and Tribal Peoples in Independent Countries") from 1989, which is the most important international instrument dealing directly with indigenous peoples, applies to those people "..who are regarded as indigenous on account of their descent from the populations which inhabited the country, or a geographical region to which the country belongs, at the time of conquest or colonisation or the establishment of present state boundaries and who, irrespective of their legal status, retain some or all of their own social, economic, cultural and political institutions". And furthermore: "Self-identification as indigenous or tribal shall be regarded as a fundamental criterion for determining the groups to which the provisions of the Convention apply".

Indigenous peoples of the Arctic are on the whole also the aboriginal inhabitants.

The Arctic Region is defined from a combination of geographical and political factors. This implies that indigenous peoples living in geographically non-Arctic regions in some instances should be included if they are inhabitants of an Arctic country. Thus, the Natives of southern Alaska and Eastern Siberia are included, while the Dene Indians might be excluded after the carving out of a Nunavut territory from the Canadian Northwest Territories. Finally, if an indigenous group considers itself as being part of the Arctic this should also be considered. Thus, in Russia I will include all the so-called "26 Small Peoples of the North and Far East", and other indigenous groups of the same geographical area (Russian North and Far East), including the two major groups, Komi and Yakut, but, for example, not the Buryat living north of Mongolia, who have their own autonomous republic.

In Alaska the indigenous peoples are publicly known by the term *Natives*. This includes the Eskimos (Inupiat and Yupiit), the Aleut (the Aleutian Chain), the Alutiiq-Aleut (Prince William Sound and Kodiak

Island) the Athabascan Indians of the interior regions and the Southeast Coastal Indians. Only the Eskimos and the Athabascan reside within the geographic Arctic, but since the political system, the legal system and the indigenous organisations refer to the state of Alaska, I will use the overall term, *'Natives of Alaska'*.

In Canada the Arctic region consists of Yukon Territory, the Northwest Territories, northern Quebec and the eastern part of Labrador which belongs to the province of Newfoundland. The indigenous peoples to be considered are the Indians in Yukon, the Indians, Metis, **Inuvialuit** and **Inuit** of the Northwest Territories, the **Inuit** and **Cree-**Indians of Quebec and the Indians and **Inuit** on the coast of Labrador.

Table 1. Population of the Canadian Northwest Territories.

	Northwest Territories
Inuit	16,000
Inuvialuit	3,000
Indians	8,500
Metis	3,000
Whites	21,500

Greenland is the most easily defined region and the only indigenous group there is the ethnic Greenlanders. In 1992 there lived 47,184 ethnic Greenlanders and 8,201 Danes in Greenland.

The Saami is the only indigenous group in Norway, Sweden and Finland.

Table 2. The number of **Saami** (estimated) in the Nordic countries.

Sweden	17,000
Finland	5,700
Norway	40-50,000

The largest number of indigenous peoples live in Russia. In the 1920s and the 1930s the concept of "Small Peoples of the North and Far East" came into use. Since then these 26 indigenous peoples have been treated as distinct. Not all of them are Arctic peoples, but like in Alaska, the public, the central authorities in Moscow and the indigenous peoples themselves consider "the 26' as a given fact. To these 26 peoples should be added a few small groups which, for years, were not recognised (the Veps, the Kamchadals and the **Izhors**), and finally the two largest indigenous groups, the Yakut and the Komi. The Komi are usually treated differently from the 'small peoples', because they have their own autonomous republics.

Besides the "26 Small Peoples" there are a number of other indigenous peoples in the Russian North and Far East. In 1989 there were 382,000 Yakuts, 344,500 Komi, 150,000 Kareliens, 18,000 Kamchadals and a small number of Veps and **Izhors**.

Only a few indigenous groups live within more than one state. The 1.700 Eskimos in northeastemmost Siberia have their closest relatives on St. Lawrence Island (Alaska), and for the first time since World War II, they have been able to be in regular contact with them during the last 3-4 years. The same applies to the Saami, a few thousand living on the Kola Peninsula. The Gwich'in Indians live in Canada and Alaska and the **Inuvialuit** (Canada) are closely related to the **Inuit** of northern Alaska.

Table 3. The 26 officially recognised "Small Peoples of the North and Far East" and their numbers in 1979 and 1989. Earlier names used are in brackets.

Aleuts	546	702
Chukchee	14,000	15,184
Chuvans		1,511
Dolgans	5,053	6,932
Entsy (Yenisei Samoyeds)	350	209
Eskimos	1,510	1,719
Evenks (Tungus)	27,531	30,163
Evens (Lamuts)	12,286	17,199
Itelmens (Kamchadals)	1,370	2,481
Kets (Yenisei Ostyaks)	1,122	1,113
Khants (Ostyaks)	20,934	22,521
Koryaks	7,879	9,242
Mansi (Voguls)	7,563	8,461
Nanais (Goldi)	10,516	10,023
Negidals	504	622
Nenets (Yurak Samoyeds)	29,894	34,665
Nganasans (Taimyr Samoyeds)	867	1,278
Nivkh (Gilyaks)	4,397	4,673
Orochi	1,198	915
Oroks	450	190
Saami	1,888	1,890
Selkups (Ostyak Samoyeds)	3,565	3,621
Tofalars (Karagas)		731
Udege	1,551	2,011
Ulchi	2,552	3,233
Yukaghirs	835	1,142

2.2 Demography

The most recent history of the Arctic shows us, that the type of autonomy aimed at depends on whether the indigenous peoples are a demographic majority, or a minority within a natural geographical region. Thus, a regional type of self-government, the Greenlandic Home Rule or the Nunavut for example, will only work to its full extent in those regions where the indigenous peoples make up a majority.

This is accordingly, one of the most important factors explaining why, for example, the Inuit and the Dene, both residing in the Northwest Territories in Canada have chosen different strategies on the question of autonomy. The Inuit, being a majority in the Eastern part of the Northwest Territories, have opted for the establishment of a regional self-government model, while the Dene Indians, being a minority in the West, have favoured a political structure with Dene Indians given specific ethnic rights.

Alaska

The Natives of Alaska made up a majority of the population until the turn of the century. The gold rush, the salmon fishing and lately the oil strikes at the North Slope attracted a huge number of people from the 'lower 48', and in 1990 the Native population was reduced to 15.6 per cent of Alaska's total population (Table 4). The immigrant Whites live mainly in urban regions like Anchorage, Fairbanks, Juneau and at the North Slope oil extraction sites, whereas half of the Natives are rural dwellers, living in more than 200 villages.

Table 4. Alaska's population 1920-1990. Total population and Native (Aleut, Eskimo and Indian) population.

	Total population	Native population	Natives in per cent of total population
1890	32,052	25,354	79.170
1920	55,036	26,558	48.37.
1950	128,643	33,863	26.3 %
1970	302,173	51,712	17.170
1980	401,851	64,103	16.0 %
1990	550,043	85,698	15.67.

There are six major indigenous groups in Alaska. The *Inupiak Eskimos* of the North and Northwest Alaska, *the Yupik Eskimos* of Western Alaska, the *Athapascan Indians* of the Interior, the *Aleut* of the Aleutian Chain, the *Alutiiq-Aleut* of Kodiak Island and Prince William Sound and finally the *Pacific Indians* (Tlingit, Haida and Tsirnshian) of the panhandle of south-eastern Alaska.

Canada

The indigenous peoples of Arctic Canada live in Labrador, Quebec, the Northwest Territories and in the Yukon Territory. Only in the Northwest Territories do they make up a significant part of the population; the Indians, Metis and Inuit (including the Inuvialuit) constitute more than half of the population. When the proposed new territory, Nunavut, is established at the end of the century, Inuit is expected to form about 85% of the inhabitants. This also implies that the Inuvialuit, the Dene and Metis which remain in the western part of the Northwest Territories will be out-numbered by Whites.

Although the Inuit and the Cree are only a small minority within the province of Quebec, the Inuit makeup the majority of the population in northern Quebec, Nunavik.

Greenland

As seen from table 5, the Danes in Greenland have never exceeded 20% of the total population, not even in the mid-1970s when the number of Danes reached its maximum. Greenland has never attracted a large number of permanent white settlers. Thus, as a well-defined region, separated from Denmark by the Atlantic Ocean, with a permanent demographic majority of ethnic Greenlanders - the Greenlandic quest for self-govemment in the 1970s was never seriously challenged by the use of demographic nor by territorial arguments.

Table 5. The population of Greenland 1950-1992.

	Total population	Danes(1)	Danes as % of total population
1950	23.642	1.061	4.5%
1960	33.140	2.762	8.3%
1974	49,468	9,377	19.0%
1978	49,148	8,539	17.4%
1982	51,435	9,279	18.0%
1986	53,406	9,353	17.5%
1990	55,558	9,416	16.9%
1992	55,385	8,201	14.8%

(1) The definition used in official statistics is "persons born outside Greenland".

The Nordic countries

If we leave Greenland aside, the Saami is the only indigenous group living in the Nordic countries. They make up a small minority in Finland, Norway and Sweden. An estimate is that there are 40.000-50.000 Saami in Norway, 17.000 in Sweden, 5.700 in Finland and 2.000 in Russia. However, like in the other Arctic countries, this indigenous group form a significant group in a few core areas. The Saami makeup a population majority in the interior of Finnmark (Norway) and in Utsjoki municipality, Finland. Only about 10 per cent of the Saami in Norway are reindeer herders; in Sweden about 15 per cent; in Finland where half of the Saami population live within the core region about 50 per cent are reindeer herders. The majority of Saami

in Norway and Sweden live in communities integrated with the Norwegian and Swedish populations.

Russia

In no regions of the Russian North and Far East do the indigenous people makeup a significant portion of the population. When, in the 1920s and 1930s, autonomous areas, autonomous regions[1] and autonomous republics were established, these territories were carved out in order to accommodate indigenous people. But since then the most important demographic change has been the immigration of ethnic Russians, Ukrainians, Armenias, etc. In all autonomous areas as well as in Yakutia (Yakut Autonomous Republic) as in the Korni Autonomous Republic, the immigrants now outnumber the indigenous peoples of the regions. Tables 6 and 7 give some examples of this demographic development.

Table 6. Indigenous Autonomous Republics, Autonomous Regions and Autonomous Areas of northern Siberia. The largest indigenous groups in per cent of total population.

	The main indigenous group	Percent of population
Yakut Autonomous Republic	Yakuts	33.4
Koryak Aut. Area (Okrug)	Koryaks	16.5
Evenki Aut. Area (Okrug)	Evenks	14.0
Taimyr Aut. Area (Okrug)	Dolgans	8.9
Chukotka Aut. Area (Okrug)	Chukchee	7.3
Yamal-Nenets Aut. Area (Okrug)	Nenets	4.2
Khanty-Mansi Aut. Area (Okrug)	Khants	0.9

The implication of becoming a numerical minority has been that, although still inhabiting their traditional territory, the small indigenous peoples of the Russian forest, taiga and tundra have lost control of their own destiny. To this should be added that because of relocation and other population movements, the indigenous groups are more spread out than they were before the revolution in 1917.

The turmoil which followed the collapse of the Soviet Union has meant that a substantial number of non-indigenous Russians and others have left the North and Far East. The far-reaching effect of this trend is difficult to assess, but in the short term a shortage of doctors, engineers and others can be foreseen.

Table 7. The population of **Kamchatka.** The total population and recognised indigenous peoples, including the **Koryak,** the Even, the Evenk, the **Itelmen,** the **Aleut** and the **Chukchee.**

	1897	1926	1939	1989
The total population	13,200	19,400	109,300	471,932
Indigenous peoples	10,200	12,100	9,400	12,329

Conclusion

There is a fundamental need among all indigenous peoples of the Arctic to have a territory of their own. A territory in which they either make up the majority of the population or are given defined preferential rights. To attain this goal each indigenous group is faced with some hard demographic facts.

1 The term 'autonomous' is of recent origin. In the 1920s and 1930s the term 'national areas' (National *Okrugs*) was used.

Russia is the most complex of the Arctic countries in the sense that the country is inhabited by a large number of very distinct indigenous groups, each speaking a language only intelligible within that group. In none of the existing 'natural' regions do the indigenous peoples (each group alone or all indigenous groups jointly) make up the majority of the population.

Population movements and relocations have, furthermore, implied a breakdown of clear-cut boundaries between each group. To make the Russian situation further complicated, some indigenous peoples (the Yakut and the Komi in the Arctic) have their own autonomous republics in which minor indigenous groups reside as indigenous minorities. This hierarchical position has obviously been felt by some smaller indigenous groups, which have been suppressed by the Komi and the Yakuts.

In Alaska, increased co-operation between Indians, Eskimos and Aleuts followed after statehood in 1958 and the claims process of the 1960s. The political mobilisation of the Natives of Alaska was a response to a state-wide process. As a result, the term *Native* developed into a common denominator and identity-marker for the Alaskan Eskimo, Aleut and Indian population in the 1960s and 1970s.

History has, to a large extent, kept Indians and Inuit in Canada separate. They have never been demographically mixed to the same degree as in Russia, and they have never made up a united front to cope with national policy. The influx of Whites to the Canadian North has been less extensive than in Alaska and the Soviet Union, and there are regions in which the indigenous peoples have remained the majority.

The expansion of the industrial and agricultural frontier north into the land of the indigenous peoples has affected the Saami more than any other people. Only in Finland do a substantial number of Saami today live in what remains of their original homeland.

Greenland is different from the remaining part of the Arctic in the sense that less than 20% of the population live in rural ('settlements') areas. Although this figure cannot be directly compared with those of the other regions, the fact is, that the native Greenlandic economy is a highly industrialised economy. Greenland also diverges from the other Arctic regions, in that the majority of the populations in the industrial centres are ethnic Greenlanders. Even in Alaska about half of the Native population live in rural census areas where they form over half of the population.

3. Models of self-government

3.1. Indigenous autonomy

Self-determination and self-government is a goal aspired to by all indigenous peoples of the Arctic. Indigenous self-determination includes the right to continue to practice a specific culture as well as the right to determine ones own future. Self-government is the practicing of, or the quest for, autonomy. From the Circumpolar region all types of autonomy, as we know them today, which are based on indigenous peoples' rights intends to maintain the nation state. Some of the indigenous people have aspirations for establishing their own semi-autonomous state or province sometime in the future, but the existing set-up does not incorporate such an evolution in its structure.

Considering the ethnic turmoil in many of the former socialist countries, it is extremely important to have this in mind. As opposed to ethnic minorities proper, which have as their goal to establish mono-ethnic states of the same type as the ones they are already part of, indigenous peoples of the Arctic realise that they have no influence on the state system as such, and try to find a political niche within which they can survive.

Over the years all the Arctic countries have accepted one or another type of self-govemment of its indigenous people(s). The latest example is the establishment of a Saami parliament in Sweden.

The settlements reached varies from country to country - from culture to culture. The Greenlandic Home Rule is considered by many indigenous peoples, from all over the world, as a model to be copied or a goal to aim for. It should, however, be realised that each type of autonomy or self-government reflects specific demographic, political, cultural and historical circumstances. It is therefore necessary to look into the different options of autonomy and self-determination which exists in order to learn about the prospects and limitations of each type.

For the purpose of clarity we can distinguish between three types of indigenous autonomy. These are regional self-government, **ethno-political self-**govemment and land claims. These three categories, usually have different histories, different demographic backgrounds and reflect different ethnic complexities - and thus they have varying prospects.

3.2. Regional self-government

Regional self-government is defined in relation to its territorial basis. Although the carving out of an autonomous territory is usually done so, that the indigenous group or groups will make up the majority or a substantial part of the population, the self--governing territory is defined in geographical terms rather than in ethnic terms. Thus, in relation to territorial self-govemment, no ethnic group is given preferential rights within the political region.

The first self-governing autonomies to be established in the Circumpolar Region were the autonomous republics, national areas (Okrug) and national districts (*Raion*) initiated in the Soviet Union in the 1920s and 1930s. The national areas were later changed into autonomous areas and the national districts were abolished. The autonomous entities still exist today, although the Soviet type no longer seems to live up to the expectations of the indigenous peoples of Russia.

No indigenous regional self-government was established in the Circumpolar Region between the 1930s and 1979 (although the James Bay agreement anticipated a kind of regional self-government, now coming into existence under the name of Nunavik) when Home Rule was introduced in Greenland. In terms of self-government, the Greenlandic Home Rule is by far the most far-reaching type of regional self-government known in the Circumpolar Region. The Greerdandic Home Rule is, first of all, defined according to the territory and not in terms of ethnicity, although it was established in order to accommodate ethnic demands and legitimated as being a "distinct community within the Kingdom of Denmark". In practical terms this means, for example, that rights to vote, to fish, to establish a firm etc. is in terms of being an inhabitant of the territory of Greenland and not in terms of ethnicity.

In Canada it is expected that a Nunavut Territory will be carved out from the Canadian Northwest Territories at the end of the century and gradually established with a provincial type of political structure. Again, although Nunavut is demarcated according to ethnic criteria and although 85 per cent of its inhabitants are expected to be Inuit, it is territorially defined, but endowed with far less political power and authority than the Home Rule government in Greenland.

3.3. Ethno-political self-government

Ethno-political self-government assigns specific rights to specific groups of people as being the aboriginal inhabitants of a certain territory. The indigenous peoples are conceded specific rights, which are not given to the immigrant majority of the said territory. These aboriginal rights are not defined in geographical terms, but in ethnic terms, although they relate to a specific territory as the homeland of the pertinent indigenous group or groups. Sometimes, these rights can be exercised even in the case whereby an indigenous person resides outside his/her traditional homeland. Whereas the regional self-government usually excludes a parallel political structure, the ethno-political types always exist as parallel to a national or territorial type of political system, but never as equal or alternative to this structure.

As is the case of the different types of regional self-government, there is considerable variation among the ethno-political types. The establishment of a so-called Saami Parliament in Norway is an example of ethno-political self-government. The Saami Parliament is an advisory body elected by all registered Saami in Norway. The Saami Parliament has no legislative authority. Even in those regions in which the Saami are in a majority, the national Norwegian political system exists unchanged.

In Alaska ethno-political self-government only exists at community level. For example, besides having a regular village council with an appointed mayor, the same community might have a tribal council. Whereas the tribal council is only elected by Natives, the village council is elected by all inhabitants. Tribal councils and villages councils often have conflicting interests and the division of authority is often dubious.

At the level of the region in Alaska there are only voluntary Native Associations with no political rights, but vested with authority in matters such as health, culture, social welfare and educational programmed. Neither in Alaska as a whole, nor within the major ethnic regions (Aleut, Eskimo, Indian) does any kind of regional self-government or ethno-political self-government exist.

3.4. Land claim

In the 1970s a new type of autonomy was introduced in Alaska and Canada. This was the so-called land claim agreement. Land claims refer to certain ethnic groups and to specified territories, but are far more limited in scope than territorial self-government. Land claims agreements are entered by governments and groups of indigenous peoples. The main focus of these settlements is on economic ownership rights to selected territories. In its most extreme version, which is represented by the Alaska Native Claims Settlement Act (ANCSA) from 1971, the land claims agreement gave no assurance to indigenous peoples' political, cultural or social rights. In this case indigenous rights are only vested in ownership rights to land ('fee simple title'). All other rights based on aboriginal claims have been extinguished. The land is owned by a large number of village- and regional profit-corporations, with indigenous peoples as shareholders. Today, Natives of Alaska have ownership rights to 11% of the state of Alaska, but no exclusive or preferential rights to the remaining part of Alaska, which was included in their original claims.

In the modem Canadian version the land claim agreement is comprehensive, which implies that rights other than sheer ownership right to lands are included.

3.5. Conclusion

The above mentioned three types of autonomy, territorial self-government, ethno-political self-government and land claim agreement are not necessarily exclusive types, but can be combined as it is found in the Canadian Northwest Territories. The establishment of a Nunavut territory is defined in territorial terms and the administration of Nunavut will be separate from the management of the land owned by Inuit and land owned by the crown.

It should, finally, be mentioned that under some circumstances a fourth option can be simply to accept the general political structure of the dominating society. This happened, for example, when the Inupiat of North Alaska choose to establish a borough, the North Slope Borough in the early 1970s. Because the Inupiat makeup the majority of the population they have thus, de facto, established their own type of 'self-govemment', although the borough is incorporated in the general US political structure.

The claim for autonomy is advanced by indigenous organisations. The state response has usually been to further devolution. For example, parallel to having negotiations with the Inuit of the Canadian Northwest Territories, the government delegated more and more authority to the territorial government in Yellowknife. In Russia at the moment, one of the main political tendencies is the devolution of power and authority to regional authorities thus anticipating ethnic based quest for autonomy.

4. Case studies

4.1. Alaska

His toy

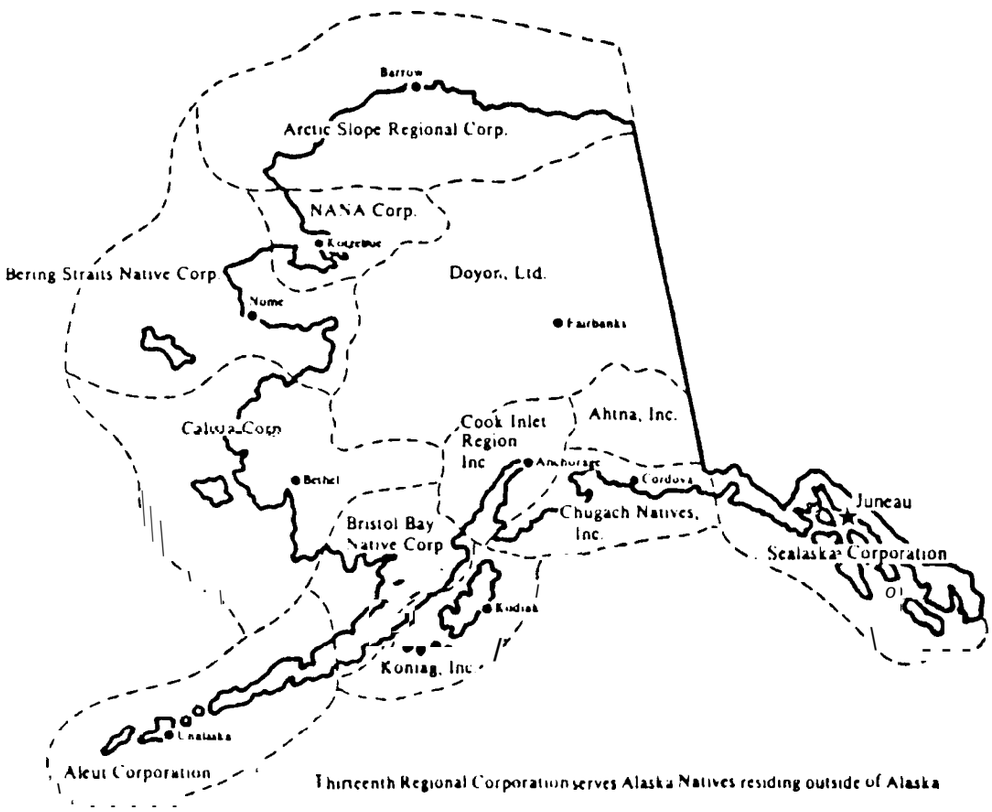
Alaska was Russian territory until it was sold to the United States in 1867, but only the coastal regions to the south and west came ever under direct imperial Russian rule. It has, however, had long-term cultural, religious and social implications that the Aleuts came in regular contact with the Russians from 1750. It was not before a hundred years later that the northern Eskimos and the interior Indians were approached and then by the Americans.

Alaska has always been a frontier for Euro-American expansion, and has been much influenced by economic boom-and-bust cycles. The stock of bowhead whales, on which the northern Eskimos were so much dependent, were depleted by American whalers in the second part of the 19th century. At the end of that century the salmon runs of southern coastal regions attracted thousands and thousands of immigrants until the near crash of the whole industry. The goldrush around the turn of the century was short-lived, but affected the indigenous communities as did the oil strike at Prudhoe Bay in 1968. The oil strike on land claimed by the Eskimos opened up for negotiations between the government and the indigenous (Natives) Eskimos, Indians and Aleuts, and the industry has now completely changed the Alaska economy.

Another factor which furthered consultations between Natives and the government was, that when Alaska entered statehood in 1959 it was allowed to select a little under one-third of the new state's land. This was done without any consideration of the land rights of the indigenous Indians, Aleuts and Eskimos. The Natives, from 1966 organised in Alaska Federation of Natives, struggled for their claims, and all state land selections were suspended from 1966 until the Native claims had been settled.

Figure 1

Alaska native claims settlement act corporations



With the oil strike at Prudhoe Bay this developed into a crisis which found a solution when the Alaska Native Claims Settlement Act (ANCSA) was adopted in December 1971. ANCSA was not the result of a negotiated agreement between the involved parties, but was accepted by most Native associations of that time. Nothing in the recent history of Alaska has changed the indigenous societies so profoundly as did ANCSA.

In Alaska the claims process of the 1960s and 1970s was unique because it was followed by increased cooperation between Indians, Eskimos and Aleuts. The first response came from regional associations (representing groups of Eskimos, Aleuts and Indians), thus confirming traditional cultural and linguistic boundaries, but it was soon followed by co-operation between native groups on the level of the State.

The devolution of power took place at state level, giving the newly-born State of Alaska increased jurisdiction without involving the Native groups. Accordingly, the response from the indigenous peoples was a statewide reaction.

ANCSA

The Alaska Native Claims Settlement Act extinguished all Native aboriginal rights to the land. Instead the Natives were 'given' fee simple title to about 11% of the territory of Alaska and a cash compensation of US$ 962.5 million.

The land and the cash is taken care of by 12 regional corporations (equal to the 12 Native associations which lobbied the land claims) (figure 1) and more than 200 village corporations. The corporations are profit corporations which operate under corporate law.

All Natives were given shares in a regional corporation and most Natives were also given shares in a village corporation.

Surface rights are vested in village corporations and in regional corporations, but only the regional corporations have sub-surface rights. The Natives were not given preferential rights to land (to hunt, fish, mineral exploitation etc.) surrendered by the law (a very important difference to the land claims agreement in the Canadian Northwest Territories).

ANCSA gave no assurance of indigenous peoples' political, cultural or social rights. A major problem in the Alaska settlement is that voting rights in the land-holding Native corporations is detached from residence. This means that several land-holding corporations have a majority of their shareholders living outside the region, and since these persons often have different interests from those living in the "homeland" the result has been an endless number of conflicts.

In rural Alaska, in the villages, we therefore have three parallel governmental structures: the city council (open for everybody), the Native village corporation and the tribal council (only for Natives). The division of labour between these are not always clear-cut and a Native sovereignty movement which wants to transfer all powers into traditional tribal councils is strong in some parts of the State.

Conclusion

The ability of the Natives of Alaska to have their indigenous rights recognised have been much hampered by the many divergent interests given to a substantial number of opposed interest groups: those living within their homeland vs. those living outside; regional corporations vs. village corporations; corporation vs. corporation; profit vs. non-profit interests. One of the most outstanding and pendings conflicts have been over the future of the vast Arctic National Wildlife Refuge in the north-eastern comer of the state. The Inuit of the coastal area and Native owned profit-corporations from other parts of Alaska have seen it as being in their interest to favour oil- and gas exploration in the refuge (they have land rights there), whereas the Gwich'in Indians of the interior, who have no vested rights in the subsurface resources, but who rely on caribou hunting for their livelihood, have been opposed.

A serious conflict between Natives and non-Natives at the moment is in relation to hunting- and fishing rights. These rights are completely excluded from the Alaska Native Claims Settlement Act and this has given rise to serious conflicts between Natives on one side and the Alaska State Government, the Federal Government in Washington and sports fishermen and sport hunters associations on the other.

Apart from land owned by the ANCSA corporations, the Natives of Alaska have no priority rights to the use of land. This has raised many problems, mainly in those regions where the Natives depend on fishing. A system with 'limited entry permits' (which can be sold) threatens many Native of being pushed completely out of fishing.

The political system does not favour a person only because of ethnicity, which puts the Natives in a disadvantaged position in those regions where the political control is in the hand of non-Natives who show no consideration of Native languages and cultures. Only in the Northern and Western part of Alaska do the Natives have a real chance of making their influence felt on the regional and local political decision-making.

In a few cases the Natives have succeeded in getting themselves integrated into the decision-making process in matters of concern to their own future and to their environmental interests. Of those cases which have been successful should be mentioned the Alaskan Eskimo Whaling Commission.

4.2. Canada

His toy

The indigenous peoples of Canada are divided along ethnic, geographical, historical and religious lines. Thus, in their political endeavors the Inuit have usually followed strategies very different from those of the Indians. Even within the comparatively homogeneous Inuit population there are major differences. This has, first of all, divided the Inuit of the Eastern and Central Arctic from the Mackenzie Delta Inuit, the Inuvialuit. The Inuit of the eastern Canadian Arctic came in contact with Europeans at a

much earlier stage in history than did those of central and western Arctic. A consequence of this was that the Inuit were Christianized by miscellaneous missions. Each mission established its own writing system, so that today the Inuit west of Hudson Bay and northern Quebec use the syllabic script and can not read the Inuit dialect (using reman script) used by the Inuit of the Mackenzie Delta.

The expansion of the industrial economy into the Canadian Arctic had significant impact on the creation of new geographical and political regions. This development was, however, uneven which explains the carving out of new regions in the Arctic, as the Western Arctic Region (the Mackenzie Delta region), the homeland of the Inuvialuit-Inuit. The Inuit of the Mackenzie Delta region were strongly affected by the whalers who came to the region before the turn of the century. Since World War I the Inuit of that region have been of very mixed descent, reflecting the decline of the aboriginal Inuit and the immigration of Inui t from the east and from Alaska. Three or four generations later the Mackenzie Delta proved to be rich in oil and gas, and from early 1970s the descendants of the heterogeneous Mackenzie Delta Inuit came under strong pressure from the industrial society. This forced these people to find their *own way* in order to obtain autonomy and local control before the land was completely taken over by the oil companies.

Thus, as an ethnic or cultural group the Inuvialuit are closely linked to the land claim process, which was confirmed, when in the mid-1980s, in negotiating a division of the Northwest Territories, they broke with the other Inuit and Nunavut to join the Metis and Dene in a Western Territory (in fact the Inuvialuit preferred their own territory).

The Inuit of Quebec also went their own way when, in 1975, they signed a land claims agreement. In this case the background was a plan to construct a gigantic hydro-electric scheme along James Bay. Leaving aside the negative ecological impact of the James Bay project, it is has led to a strengthening of the indigenous organisations.

These short historical notes should be sufficient to explain why there has never been an overall or unified claim put forward by indigenous people in Canada, neither within the Inuit nor the Indian populations.

Three types of processes towards self-government

The types of self-government negotiated by the Inuit, Indian and Metis in the Canadian Arctic are very complex agreements, so-called *comprehensive land claim agreements.* In fact, the indigenous people of the Canadian Arctic are involved in three separate processes and three types of agreements, which in some respects are intertwined, but separate in others.

In order to obtain an outline we have to keep separate the land claim settlements from the constitutional reform process and from the process leading to regional self-govemment.

First. The constitutional reform process has involved all citizens of Canada, including the Inuit, Indian and Metis. When negotiating a new constitution there were two main issues. One was the status of the province of Quebec and the other the rights of the aboriginal peoples.

The first, abortive, effort to reach an agreement on the constitutional issue was the so-called Meech Lake Accord in 1990. This proposal for an amendment of the Canadian Constitution did not consider the aspirations of indigenous peoples and if it had been adopted, it would have precluded Inuit and Indian/ Metis in the Northwest Territories from having their own province(s).

A renewed effort to give Canada a new constitution was made in 1992. This time the aboriginal peoples were included in the constitutional proposal, which would have given them the "inherent right to self-govemment within Canada". It would also have accepted indigenous self-government as a "third order of government", alongside the federal state and the provincial governments. But again, the referendum, which was held October 26, showed a majority against the proposal. Indigenous leaders considered the result as a severe blow to their efforts for achieving constitutional rights for indigenous peoples.

In a second process towards securing their rights, the indigenous peoples have negotiated *land-claims agreements.* The first modem comprehensive agreement was the James Bay Agreement from 1975, which involved the Inuit and the Cree Indians of northern Quebec province.

In 1984 the Inuvialuit from the north westernmost part of the Northwest Territories entered a similar agreement.

An *agreement-in-principle* was reached between the federal government and the Indian and Metis of the Northwest Territories in 1990, but rejected by the communities. The Gwich'in Indians have since negotiated their separate agreement. In recent years an agreement has also been

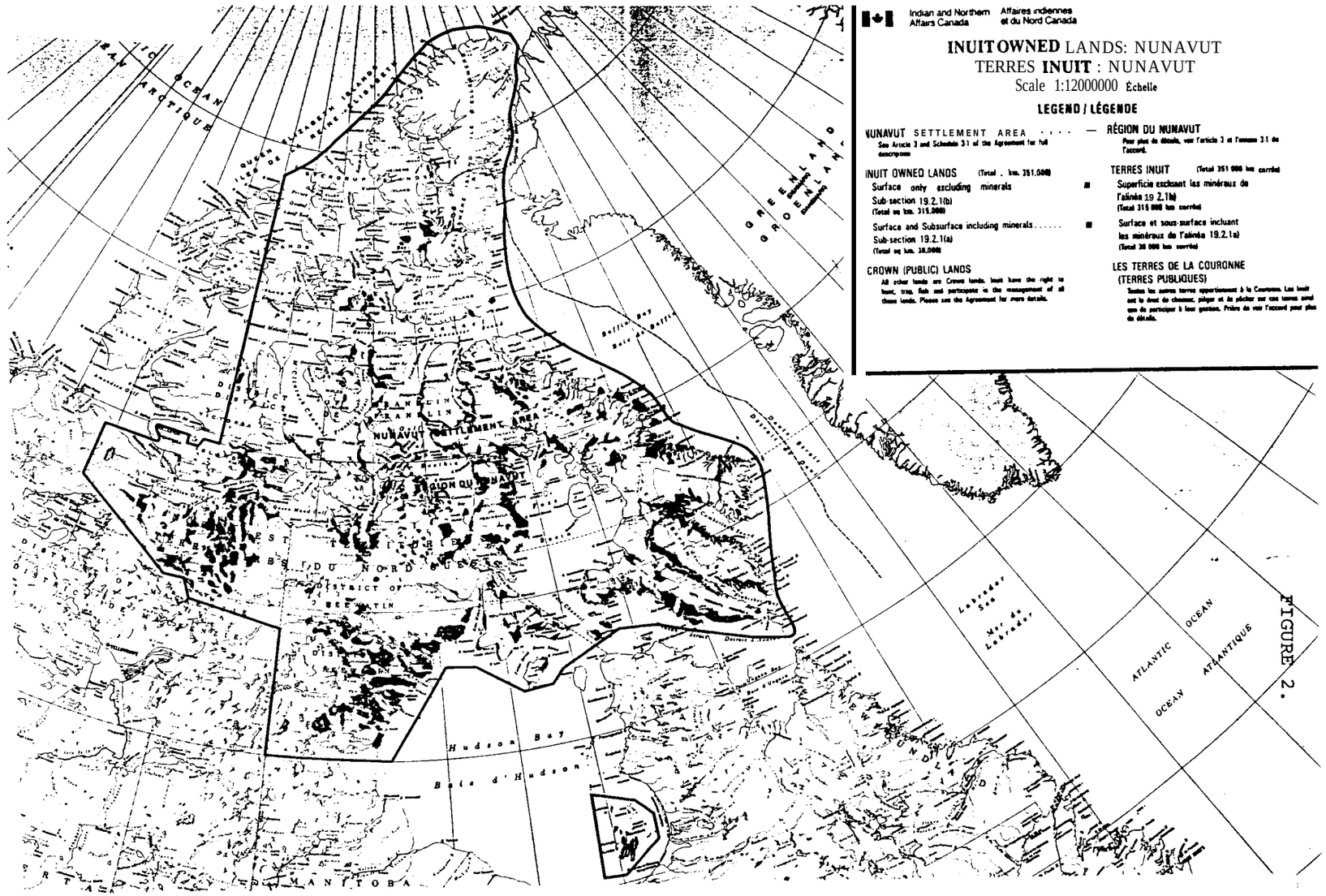

Indian and Northern Affairs Canada
Affaires indiennes et du Nord Canada
INUIT OWNED LANDS: NUNAVUT
TERRES INUIT : NUNAVUT
Scale 1:12000000 Échelle
LEGEND / LÉGENDE
NUNAVUT SETTLEMENT AREA
RÉGION DU NUNAVUT
INUIT OWNED LANDS
TERRES INUIT
Surface only excluding minerals
Sub-section 19.2.1(b)
Surface and Subsurface including minerals
Sub-section 19.2.1(a)
CROWN (PUBLIC) LANDS
LES TERRES DE LA COURONNE (TERRES PUBLIQUES)
NUNAVUT SETTLEMENT AREA
RÉGION DU NUNAVUT
Hudson Bay
Baie d'Hudson
Labrador Sea
Mer du Labrador
ATLANTIC OCEAN
OCÉAN ATLANTIQUE
MANITOBA

FIGURE 2.

made involving the Indians in the Yukon Territory. In 1992 the Inuit in the North easternmost part of the Northwest Territories finalised their land claim agreement with the Federal Government.

This agreement (figures 2 and 3) will leave the Inuit with ownership right to approximately 350,000 square kilometres of land (app. 18% of the land claimed (*Nunavut*) by the Inuit) of which 36,300 square kilometres will include mineral rights. The rest of the land will be surrendered to the federal government (so-called Crown Land). In addition to a compensation of Can.$580 million to be paid over 14 years, the Inuit will receive annually 50 per cent of the first $2 million of resource royalty received by government, and 5 per cent of additional resource royalties within the settlement area.

The boundary of the future territory included in this land claim agreement was adopted by a plebiscite on May 4, 1992. All people who had lived for more than 3 years in the Northwest Territories could take part in the plebiscite. A small majority, 54 per cent, voted in favour of the proposed boundary which will separate the Inuit land claim from those of the Inuvialuit and Dene Indians. The boundary, which surrounds the Inuit land claim, will also be used to carve a new Inuit-dominated territory, Nunavut, from the remainder of the Northwest Territories. This new territory is expected to be established in 1999. Although the land claim boundary is the same as the future territorial (Nunavut) boundary, the land claim process should not be confused with the political process establishing Nunavut.

The land claim agreement was ratified by the ethnic Inuit in November 1992 and it is expected to be passed by the parliament in Ottawa this year.

The third and final step towards protecting the rights of the indigenous people in the Canadian Arctic is the establishment of territorial *self-government*. In the Northwest Territories, this process has run parallel to the land claim process and been intertwined with it because the Inuit have refused to enter a land claim agreement without a political settlement, that is without the establishment of Nunavut as a self-goveming territory. Therefore, the Inuit only went to the polling station in November *on* the condition that before November 3rd the Federal Government signed a political accord to setup Nunavut before the turn of century. This accord was signed by the Federal Indian Affairs Minister, Thomas Siddon, a few days before the referendum and set out the Government's commitment to finance the costs of establishing the new territory. Most importantly, Nunavut will have its own legislative assembly with powers similar to those existing in the Northwest Territories Legislative Assembly.

Unlike a land claim agreement, which confers specific rights to ethnic Inuit, the creation of a Nunavut territory means self-govemment for all its inhabitants. Within the future Nunavut territory about 85 per cent of the population is Inuit, which implies de facto self-government for the Inuit. However, there is no agreement on the political future of the remainder of the Northwest Territories. In this part the indigenous Indians, Metis and Inuvialuit make up a minority, but the Inuvialuit have always been in favour of a regional government of their own.

A few years ago the Inuit of Quebec opened negotiations with the government of Quebec in order to establish a territorial government in the northern part of the province, Nunavik.

Conclusion

There are numerous indigenous groups in Canada which have not yet had their claims recognised. Among these are the Inuit and Innu of Labrador. The James Bay Agreement (Quebec) and the Inuvialuit Agreement (Northwest Territories) gave new impetus to indigenous organisations and institutions to cope with their own problems, to start new economic activities and to take cultural initiatives. To cope with the extremely serious social situation in Labrador a precondition is that the indigenous Inuit and Innu regain control of their own destiny.

Although each major group of Inuit have negotiated their own separate agreement with the provincial and federal governments there is a strong tradition for giving support to the national umbrella organisations, and among these are the Inuit Tapirissat of Canada. To cope with problems of general concern, such as, for example, environmental issues and issues relating to hunting and trapping, it is absolutely essential that the national organisations and institutions are being given possibilities to participate in decision-making processes.

4.3. Greenland

His toy

When, in 1972, the claim for Home Rule in Greenland was formulated for the first time as a serious political demand, the territorial range of the claim was undisputed. Neither in Greenland nor in the Danish government was it ever contended that self-government

Figure 3

THE NUNAVUT LAND CLAIM AGREEMENT

The agreement is entered upon between the 18,000 Inuit living in the Canadian Northwest Territories and the federal government in Ottawa.

The Inuit will have ownership rights to 353,610 square kilometers of surface land within the Nunavut settlement area. This is equal to about 18 per cent of the entire Nunavut settlement area. The remaining 72 per cent, so-called 'Crown Land' is owned by the federal government.

The Inuit will have subsurface rights (ownership of gas, oil and minerals) to 36,257 square kilometers, or about 10 per cent, of the Inuit owned land.

In compensation the Inuit will receive Can.$1.148 billion to be paid over the next 14 years.

The federal government must pay Inuit 50 per cent of the first $2 million of royalties it gets from oil, gas and mineral development, and 5 per cent of royalties earned after that.

Compensation money will be held by the Nunavut Trust, which will be run by a board of trustees appointed by regional Inuit organisations. The Trust is expected to only spend the interest from the compensation.

In exchange for the rights and benefits in the agreement, Inuit will surrender all rights and claims to lands and waters anywhere in Canada, including the offshore. Inuit will keep all other constitutional rights .

Inuit will continue to be recognised as an aboriginal people under the Canadian Constitution and to benefit for the rights designed for aboriginal peoples.

The Inuit will take part in the management of wildlife in the settlement area, including both Inuit and non-Inuit owned land.

The Inuit will have priority rights to hunting throughout the whole Nunavut settlement area, including offshore areas, and will not need licences to hunt for basic needs.

As part of the land claim agreement the Canadian Government is required to enter a political accord setting up a Nunavut territory within the turn of the century.

was negotiated for Greenland as one territorial and political undivided unity. The fact that the territorial frames were firmly established - and generally recognised by all parties - when the claim for self-government (Home Rule) was put forward by the Greenland Provincial Council in 1973, implied that the claim process itself was a further strengthening of the building of a Greenlandic nation.

The strength and potency behind the Greenlandic quest for self-government was based on a number of factors. The demographic fact that 80 per cent or more of the total population are ethnic Greenlanders has already been mentioned. A further simple explanation is to be found in the 3,000 kilometres of ocean separating Greenland from Denmark. There is no internal colonisation or gradual geographic expansion of the industrial frontier along the rivers, highways and coast as is so well known from North America, Fennoscandia and Russia.

Since the early colonial days the language promoted by the missionaries was the dialect spoken in central West Greenland, where the first mission- and trading stations were established. When schools were established and the first newspaper, Atuagagdliutit, was initiated in 1861, the central West Greenlandic dialect developed into the new written vernacular used in all colonised districts. As the language created a sense of unity so did the feeling of being a Greenlander, a *kalaleq,* crystallise. This tendency was further supported by the colonial administrative policy under which Greenland in general was dealt with as one entity.

The consequence of factors such as these has been that Greenland was a political reality for many years prior to the negotiations for self-government. This again to a large extent explains why the claim for self-government was promoted by persons whose political, rather than ethnic platform had become significant. The claims process resulted in the development of Greenland based political parties. Ethnic organisations as we know them from all other parts of the Arctic never emerged in Greenland. The type of structure which surfaced in the 1970s were ethnically inclusive rather than exclusive.

Home Rule

A major principle behind Greenlandic self-govemment is that the Home Rule authorities in Nuuk are in a position to assume political responsibility in all national Greenlandic matters, provided they can create the economic foundation. There are a few exceptions to this overriding principle, of which the most important is that all mineral resources are subject to joint regulation by the Danish government and the Greenlandic government, Landsstyre in Nuuk.

When Home Rule was introduced in 1979, Greenland acquired its own legislative assembly, the *landsting,* which elects a government, the *landsstyre.* All Danish citizens which have lived more than 6 months in Greenland can vote and be elected to the Greenlandic parliament. There are no ethnic criteria as such. Since the initiations of Home Rule, Greenland has been divided into eight constituencies. At the first election in 19794 members were elected from Southwest Greenland, 5 members from the Central West coast, 4 from the Disko Bay and one from each of the five hunting and outlying municipalities, Uummannaq, Upemavik, Thule and Ittoqqortoormiit and Ammassalik in East Greenland. The system should guarantee a fair representation from the population centres along the West coast, but also protect the vast and sparsely populated hunting districts against discrimination. Three-four supplementary seats assures that no political party is underrepresented. In 1991 the southern constituency elected 5 delegates, the central constituency 8 delegates and the Disko Bay 5. Of the 27 members of parliament since 1991 four are women.

The fact that the Greenlandic *landsting* represents a regional type of self-government and not an ethnic type of elected body has wide-ranging effects on the legitimacy of the elected political representatives. The people which negotiate on behalf of Greenland are elected by all Greenlanders, including ethnic Danes and ethnic Greenlanders, and they represent and negotiate on behalf of all 'Greerdanders', i.e. those living permanently in the country. What is even more important is, that this has been accepted by almost everybody.

After more than a decade under Home Rule it is fair to say, that the Greenlandic society has changed with a speed and extensiveness anticipated by only very few. Guided by their own government, Greenland has left the EEC as the result of a referendum held in 1982. The Home Rule has taken over control of production, taxation, trade, education, the health system, management of the environment, etc., etc. Leading positions of all kinds are more frequently filled by Greenlanders than before. High schools have been established and the first students have graduated from the University of Greenland.

Conclusion

Greenland has been part of the national Danish political system since the early 1950s and elects two members to the parliament in Copenhagen. This was not changed when Home Rule was established.

Even though Greenland has taken over control of its own economy and management of its own renewable resources, the country is so dependent on the world market that international events can make serious impacts on the Greerdandic economy and society. The international campaign against the use of sealskin is one example, which also displayed the necessity for Greenland to co-operate internationally.

4.4. The Nordic Countries

History

The Saami is the only indigenous people that lives within the territory of the Nordic countries. The invasion of other peoples into the Saami region and the establishment of national states has cut up the Saami territory. The result is the well-known fact, that the Saami today live in four states. It was a slow process, lasting hundreds of years during which the Saami lived under various non-Saami administrative and political systems. This point is significant in the sense that it gives part of the explanation why the situation of the Saami often is very different in Norway, Sweden, Finland and Russia (the Saami in Russia will not be dealt with in this case-study).

For several hundred years Saamiland has continually been encroached upon and continues to be so. The Saami have, nevertheless, kept a core-region or homeland in all three Nordic countries in which Saami culture, occupation and language remain strong. In these regions reindeer breeding has remained the most important Saami occupation and a symbol of Saami culture and history. Even today when only a minority of the Saami practice reindeer herding and the majority live outside the core-region, the common history and a livelihood close to nature is seen as something characteristic of Saami culture.

The pressure put upon the Saami is very similar in all three countries: the expansion of agriculture into still more 'northern' regions; mining; forestry; tourism; hydroelectric development. The Saami response to these encroaches and the Saami political ambitions have to a large extent been national in scope.

Ethno-political self-government

All three Nordic countries have now established representative and consultative Saami assemblies, usually called 'Saami parliaments'. In Finland the Saami parliament was initiated in 1973, in Norway in 1989 and election to the first Saami parliament in Sweden was held in May this year.

The Saami parliaments are unique in the Arctic being the only popular elected ethnic assemblies.

The delegates to the Saami parliaments are elected by general vote among all eligible Saami in each country. The Saami electorate in Finland was identified from a general census, whereas the Saami in Norway and Sweden must enroll in a Saami register. In Norway and Sweden only a minority of those considered to be Saarni have enrolled. The Saami parliaments are strictly ethnic assemblies (although a person married to a Saami has voting rights to the Saami parliament in Finland). To be a Saami is defined by cultural criteria, first of all language and self-identification. Their is no blood criteria as in Alaska.

The Saami assemblies are advisory bodies in matters which relate to the Saami people, to Saami culture and economy. However, because they are democratically elected, the Saami parliaments are first of all the legitimate institutions representing the Saami people. This implies that the *de facto* power of each parliament is stronger than its formal authority. From this can also be predicted that the Norwegian and the Swedish Saami parliaments will acquire stronger popular support in the future at the expense of the strong Saami ethnic organisations.

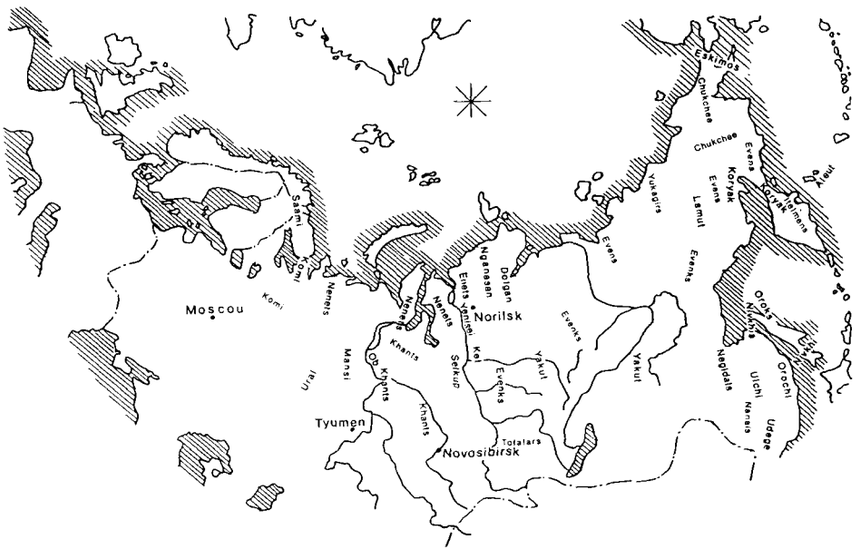
Conclusion

Considering the fact that the Saami parliaments are basically legitimated on ethnic grounds instead of being regionally defined, rights to land remain of critical concern to the Saami.

Since reindeer herding, fishing and tourism are essential to the Saami people, authority in relation to land use and management of land and resources will remain critical issues to the Saami parliaments.

The Saami of the Nordic countries are the only indigenous groups having no formal or *de facto* arrangements for being represented in state-wide assemblies. This is partly to be explained by demographic factors, but a strong tradition for an assimilationist policy has also made its political and social impact.

Figure 4



4.5. Russia

History

The Russian conquest of Siberia was initiated in the 16th century, and as early as in the eleventh century the Novgoroders had penetrated into Komi territory. From the 16th century, the Czars and Russian merchants took the lead in a continuous

expansion of Russian domination over the peoples of Siberia. The Russians, including those of other nationalities, such as Cossacks, Armenians and Ukrainians, were settlers. Many came to Siberia in the service of Czarist Russia and later the Soviet power, but thousands and thousands immigrated and settled on their own. From the earliest colonial days the indigenous people were dominated by merchants, settlers and representatives of Moscow who treated them as inferiors, although sometimes recognizing them as indigenous and aboriginal peoples. Nevertheless, very few of these indigenous people - often extremely small groups - gave up their distinct identity, which was rooted in cultures, economies and languages completely different from those of the immigrants.

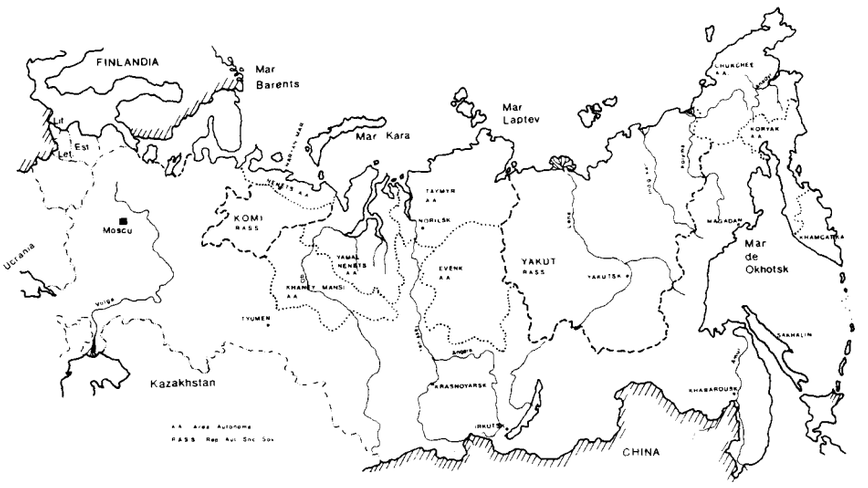
All the small ethnic groups of the North and the Far East (figure 4) claim a right to their own distinct homeland. This includes those people, like the Kamchadals of Kamchatka[2], who owe their existence as a distinct ethnic group to mixed marriages between colonised and colonisers.

Most of these small indigenous peoples live under Arctic or Subarctic conditions with a large number of them pursuing their 'traditional' livelihoods, such as reindeer herding, hunting, trapping and fishing.

Only the Komi in European Russia and the Yakut in Siberia had, and still have, their own Autonomous Republics, which give them a certain degree of sovereignty within the Russian Federal Republic. The Komi National Region was established in 1921

[2]For many years travelers, administrators and scientists used the term 'Kamchadals' about the aboriginal inhabitants of Kamchatka. Today these people are known as *Itelmens.* The term *Kamchadals* is only being used for a group descended from mixed marriages between *Itelmens,* Russians and Cossacks. The Kamchadals were not recognised by the Soviet regime as a legal indigenous entity, but after being recognised by the Kamchatka regional authorities in 1991, they have acquired certain privileges as a small indigenous group.

Figure 5



(Autonomous Republic: 1936) and the Yakut Autonomous Republic was founded in 1922. These are also the largest indigenous groups of the North and Far East. The concept "Small Peoples of the North and Far East" came into use as early as the 1920s and 1930s. Since then these people have been treated as distinct; special ordinances have been applied to them. A number of privileges were given to them and institutions were created to protect their interests.

As mentioned, one of the rights given to several of these peoples in the 1920s and 1930s was to have their own national autonomies, today's autonomous republics and autonomous areas (figure 5). Within these autonomous units the language of those indigenous groups officially recognised were given official status. Non-recognised indigenous peoples were never conferred such rights nor self-governing areas. When, in 1980 the national areas (*okrugs*) became autonomous areas, this only reflected that the indigenous peoples which had given their name to the self-governing areas had lost all political influence.

Concerning ethnic territory it is important to note that it was a constitutional principle of the Soviet Union, and that ethnic affiliation was (and still is) an officially recognised means of classification. Thus, all citizens of the Soviet Union (Russia) are identified by ethnicity on their passports.

Economic, social and cultural conditions

From Kola to the Bering Strait, the number of reindeer are on the decrease; so are fish in the large rivers and river-systems of Siberia. The state construction companies, the oil-, gas- and mining companies show no respect for the vulnerable Arctic and Subarctic ecology. Even though it takes decades for plants on the permanent frozen subsoil to recover from being trod down, the summers are used for what seems to be completely uncontrolled traffic across the tundra.

In Western Siberia the exploitation of one of the world's largest oil- and gas-reserves has led to cultural ethnocide against the indigenous Khants. They have lost control of their land, and now they suffer from un-employment, poverty and alienation. They want to regain their lost home and native land.

What impression does it make on the world that tuberculosis in 1990 is one of the most common sicknesses among indigenous people of the Russian North? Or that the average life expectancy in some regions has decreased within the last decade or so? Housing standards in the Russian North are inferior to the rest of the country - but this holds only for indigenous people, not for the Russians and immigrants of other nationalities. The economy has deteriorated to the point where, as an indigenous representative once said, "the consumption of

fish to vodka is one fish to two bottles of vodka".

When speaking with people in Russia, indigenous or non-indigenous, there seems to be no end to the problems. There are also a number of factors which make the position of the indigenous peoples extremely vulnerable in the near future. These problems fall under four headings: privatisation, ecology, social problems and cultural revival.

Most indigenous people live and work in state farms, *sovkozes,* or cooperatives, *kolkhozes*. The reindeer herders move around during most of the year far-away from the state farms. They work in brigades from 5-10 herders and are accompanied by one or several women and children. Most women, however, spend most of their time in the state farms specifically if they have children attending school. The nucleus of the brigade is made up of men related to each other by kin. Each brigade uses the same territory year after year. The men only go to the state farm for holidays.

The reindeer herds are owned by the state farms and only in a few areas do the reindeer herders own a few animals themselves. The herders are paid a monthly salary which include the bonus given to all people who works in the North. Meat and antler belongs to the state farm and the herders have to buy these products from the farm if needed.

There is no uniform pattern in the way in which the privatisation issue has been dealt with. At one of the state farms in Kamchatka and at several state farms in Chukotka the reindeers have been "given" to the herders. In a state farm in central Kamchatka it has been told that 5 herders (out of 38) wanted to leave the state farm with 1,200 reindeer. 500 were reported to be given to them, but no decision was taken concerning the remaining 700 animals. In another nearby state farm no herders had decided to leave. In at least one state farm in Chukotka all herders (Chukchees) in 13 brigades have taken steps to leave, but not yet registered and established a new structure.

In these northern regions of Russia most of the non-indigenous persons employed by the state farms have an interest in keeping at least part of the structure going. And so, very often, have the herders. For more then 70 years they have been living under a collective system and the old family structure has disappeared long ago. It takes time to establish a new structure and this interim period gives the state farm bureaucracy a chance to establish new systems of control. In some cases the leadership of the state farms obstruct the privatisation of 'indigenous properties'; in other instances the state farms are in complete disarray.

There is a potential and *serious* conflict between indigenous people on the one hand, claiming to have priority rights to land and resources which the y consider belonging to them by tradition, and those immigrants which depend directly on the land and natural ***resources*** (hunters, commercial fishermen and mining companies) or indirectly (use of the land and waters for subsistence use). The conflicts are not only played out on the political scene, but also in the process of transition from collective control to private ownership.

Most of the indigenous groups, except the largest ones having their own autonomous republics, are under cultural pressure. This is because they are very small in numbers, because they were assimilated into the mainstream Soviet culture and because of their fragile economies.

Some of the consequences are alcohol abuse, disappearance of native languages, lost cultural traditions, alienation from traditional economies, seclusion from political decision-making.

Since 1989 the submissive attitude of indigenous people has been turned into a cultural revival. The organisational efforts are the most important. Maybe the most important thing in this process of cultural revitalisation is not so much whether the indigenous languages will survive as spoken languages, but that the cultural revival is giving people an opportunity to do something themselves in order to change a situation which is experienced as suppressive.

Political Rights of Indigenous Peoples

In 1988 and 1989a very important change in the public's perception of the situation of the Soviet Union's small indigenous peoples took place. The new openness of the media, and even within the ranks of the Communist Party, revealed an enormous discrepancy between what had officially been said for decades, and the documentation currently presented by scientists, authors and indigenous representatives. The new message was about the destruction of indigenous cultures. People were being driven away from their land by oil companies and now living in utmost poverty. None suffered so much from alcoholism as the indigenous peoples. Although the indigenous peoples of Siberia live under the harshest climatic conditions in the country, they often live in housing of the lowest standards in the country. Health

conditions are generally extremely low with high incidence of tuberculosis, for example.

March 30-31,1990 more than 350 delegates and observers representing 35 nationalities from all over the Russian Republic were assembled in the Kremlin in Moscow. In a few months indigenous associations had been established in all regions of the Soviet North and Far East. In the short span of time which followed the meeting in the Central Committee of the Communist Party these associations were organised by political leaders, writers, intellectuals etc. So too was the meeting in the Kremlin which was convened by a self-appointed organizing committee. Those indigenous groups "which were removed from the history books during the Stalin era", had been allowed to send observers.

The goal of this first Congress of indigenous peoples in the history of the Soviet Union was to establish an Association of Indigenous Peoples of the Soviet North. The formation of this association signifies that indigenous people of Russia, for the first time in history, have obtained the opportunity to speak on their own behalf in a national setting.

The national association has a number of regional associations which again are made up of district associations. The associations are usually not strictly ethnically based. They represent the interests of indigenous peoples residing in the area, and all indigenous persons can be members irrespective of their ethnic belonging. Even non-indigenous peoples can be members. In general, it seems as if only a small number of non-indigenous persons are members of the associations.

Recent developments

At a meeting in Yakutsk on 16 October 1990 the 'Association of Small Peoples of the Soviet North' agreed upon a political platform called 'Convention of the 26', which was followed by the establishment of the so-called 'Northern Parliament', a delegation of elected leaders to all levels of governing bodies (soviets).

Although this new initiative was frustrated by the August coup, its ideas seem to have had a significant influence on future indigenous politics. Thus in Chukotka in north-eastern Siberia, in the Chukchee Autonomous Area, elected delegates now meet regularly in order to influence decisions to be taken in the Area Soviet (*Okrug Soviet).*

The deputies from Chukotka have established their own branch of the 'Northern Parliament' in which all questions of relevance to indigenous people are being discussed before they are dealt with in the Chukotka Okrug (regional council). This exceptional arrangement was supported by non-indigenous members of the Okrug council (the council has 60 members of which about 13 are indigenous).

In the last couple of years Russian newspapers have referred to a number of regions which declared themselves as "autonomous", "independent", "autonomous republics", etc. The Buryat Autonomous Republic declared itself independent, the Chukchee Autonomous Area declared itself an autonomous republic, so did the Koryak Autonomous Area to mention a few examples.

March 311992 all regions of Russia adopted a federal agreement which, among other things, stipulates the rights to resources between the regions and the centre. Furthermore, with the exception of three autonomous regions all other regions accepted the political and administrative structure of Russia and to remain part of it. Among those who signed the agreement were the Chukchee Autonomous Area (Okrug) and the Koryak Autonomous Area (Okrug).

Both areas are now trying to secede from the larger regions and obtain status similar to the Kamchatka and the Magadan region, i.e. to deal directly with Moscow. Both have unilaterally declared themselves independent of their regional centres, Magadan and Petropavlovsk, and this has *de facto* been accepted. Public finances, taxes, supply structures are now being changed even before the new status has been approved *de jure.* It is this process of devolution which is now under debate in the parliament in Moscow.

Conclusion

As far as can be judged an all-Russian process of decentralisation is taking place. In itself this is positive and the assumption is that the varying attitudes adopted by different groups of indigenous people reflect their diverse opportunity to be part of the process. It is a real danger that Russians living in, for example, the Koryak AA will use the process to destabilise the rights of indigenous people, but it is also to the advantage of indigenous groups to negotiate directly with Moscow and to play regional authorities against Moscow.

The question of autonomy is only indirectly linked to the question of the political status of indigenous people, which is the most important of all to be dealt with by the 'Association of the 26'. As the question

of autonomy has been handled by the indigenous people of Chukotka and the Koryak Area this has not directly interfered with the efforts to give political priority rights to indigenous people, simply because the autonomy question has been treated so as not to imply changes of the existing administrative-political structure in which the autonomous area or regions are integrated parts. The process towards regional autonomy th-erefore runs parallel with the efforts to guarantee indigenous representation at all levels of political decision-making.

Being in a legal interregnum indigenous peoples (and others) have problems not knowing their rights. The reindeer herders claim rights to the pastures; but should these rights be vested in the former brigades or families? The herders also claim rights to fish and hunt on the territory - how can this be solved in those regions where these rights have been given to specific state farms?

If it is accepted that indigenous people have some kind of priority rights to land, the rights to use pastures for rein-deers can be supposed to be given to them free of charge. But how can these rights be defended in the case of conflict with other vested rights - to minerals, fishing or timber industry? It is my impression that non-indigenous people in general do not accept that indigenous people are given priority subsistence rights to fish - which they have now.

4.6. General remarks

Devolution of political power and authority from the national centres to the Arctic has never really satisfied the expectations of the indigenous peoples, unless rights of indigenous peoples have been incorporated. Alaska receiving statehood in 1959 was not really of any advantage to the indigenous Aleut, Eskimos and Indians. The transference of power from Ottawa to Yellowknife in the Northwest Territories never satisfied the claims put forward by Inuit, Inuvialuit and Indians even after the indigenous groups took control over the territorial government. The very strong process of taking power from Moscow over to the regional councils of Russia is somewhere favoured by the indigenous groups although it is not meant to fulfil their claims. Greenland has had a long tradition for gradual transference of power to local assemblies, but Home Rule took away most Danish control of internal Greenlandic matters, thus making an end to the devolution process.

The political ambitions of the indigenous peoples of the Arctic are in the main directed toward bettering their position within existing states. Recent history reveals that each indigenous group has sought or been forced to accept a solution very much in accordance with the tradition of the dominant society. It is thus no coincidence that the corporate model was chosen in Alaska and the European type of democracy in Greenland.

Unfortunately, there has been little exchange of information and experience from one end of the Arctic to the other concerning advantages and prospects of the various models. Most notably is that the Western countries never learned from the first types of self-government established in the Arctic: the indigenous autonomies in the Soviet Union. Today, indigenous peoples of Russia are looking west in search of self-government models.

I have chosen to distinguish between three types of autonomies. Whatever model is chosen all indigenous peoples stress the importance of having their rights to land recognised as a precondition of any meaningful economic and cultural development. None of the existing forms of autonomy excludes the indigenous people being integrated in the national political system. Only the Saami do not have representation in any state-wide assembly.

In the Arctic there area number of influential national as well as international non-governmental organisations (NGOs). To mention a few: Inuit Circumpolar Conference; The Nordic Saami Council; Indigenous Survival International. The efforts invested in the work being done by these NGOS varies, and as more autonomy is achieved by the indigenous groups from different states new structures of co-operation will emerge. It is, however, important that indigenous peoples remain in control of initiatives dedicated to the future of the Arctic.

The devolution of decision-making in matters of Arctic concern to bodies specific to the region has become quite popular in recent years. However, by learning from the experience of devolution within each country, an Arctic regional devolution should not be given priority over indigenous claim of having their rights recognised and their wishes to be involved as equal partners being respected. This should be considered when forms of cooperation in the Arctic is under debate.

5. Themes: Nature and Culture

5.1. Hunting, fishing and herding as symbol

All indigenous peoples of the Arctic depend on the land and the sea for practicing their main occupations. Living off the land is an economic activity as well as a way of living, and the significance of hunting, fishing and herding has wide cultural ramifications. Seal-hunting, for example, is not only a trade, but also a symbolic part of Inuit cultures. The cultural role of activities relating to nature is not only of concern to those persons depending economically on these trades, but even to those who now live in town based occupations with no direct attachment to hunting, fishing and herding.

These traditional Arctic indigenous economies are, by and large, being challenged from two sides, cultural oppression and environmental degradation.

5.2. Subsistence

Subsistence is a most controversial concept. In daily reference it is used as distinct from commercial activities. This differentiation, however, is very unfortunate because it is no longer possible to separate the commercial from the non-commercial. Even though meat is often not sold commercially the hunter has to buy rifles, a boat and an outboard motor etc., and the herder relies on helicopters for transport, radios for communication etc. In order to buy these means of production he must sell some of his products on the commercial market.

These facts are very simple, but important to keep in mind because the distinction is being used by governments, wildlife managers, wildlife lobbyists and others to promote a wide variety of goals to the disadvantage of indigenous peoples. It is very strange to observe that in these years where the domination of market relations is celebrated by more and more countries, the same countries try to put bans on indigenous activities which, by those same countries (cultures), are considered to be commercial. There is a clear tendency, from the industrialised cultures, only to accept indigenous hunting activities which can be labelled non-commercial, or subsistence activities.

It is correct, that in all indigenous Arctic economies a high percentage of the catch (fish, reindeer, sea-mammals) is consumed within the family, exchanged locally or sold at local markets. Hunting and fishing for local consumption is, furthermore, an important supplement to people who rely on wage labour or are seasonally engaged in commercial fishing.

What happens is that certain activities (like whaling) or certain aspects of these activities (like distribution of the meat) are being defined as non-commercial by the non-indigenous cultures and only acceptable as such. This interpretation is then being used to dominate a wide spectrum of indigenous economic activities which has nothing to do with the commercial /non-commercial distinction.

Subsistence is seen by non-indigenous decision-makers as a means for management of resources. Rural residents in Alaska, for example, may fish certain species if the catch is not sold. Whereas in Alaska it is the rural residents who receive preferential treatment, in Russia it is the indigenous peoples who are allowed, for example, to catch 100 kg salmon per person a year. Whatever definition being used, it hides the fact that commercial fishing is monopolised by those not given the 'privilege' of access to subsistence. In Alaska commercial fishing is limited to those who have 'limited entry permits', in Russia to State Farms or Stateowned Companies.

Besides being a means for management of resources, subsistence has become a goal in itself. This applies, for example, for whaling and sealing. Aboriginal (indigenous) whaling is still allowed in the Arctic, but the hunters are not allowed to market whaling products commercially. In this case the commercial restriction is not used for the purpose of management (the whales are under a quota system anyway), but to appease Euro-American cultural demands for (undefined) protection of certain wild animals.

Other examples are the international campaign against the catch of baby seals (not done by indigenous peoples) and the EEC ban against import of furs from trapped animals which have caused serious problems for indigenous peoples and cultures of the Arctic.

These issues have been taken up by indigenous organisations like Inuit Circumpolar Conference and Indigenous Survival International, but it has been obvious that the peoples of the Arctic need more control over their own environment and management of resources, and require further support from governments and the international community. It is thus absolutely necessary that these problems are

taken up in international forums including the Nordic Council and the EEC.

The interference of states and powerful international NGOS in the management of indigenous harvesting activities has continued a policy of cultural domination which otherwise belonged to the colonial era. The UN Year of Indigenous Peoples is a good opportunity for the international community to support the rights of indigenous peoples to market their own products.

5.3. Environmental degradation

Pollution and other types of environmental degradation and encroachment on indigenous land affect indigenous peoples in a number of ways. In this context focus is not so much on the physical and environmental facts, as on the cultural and social effects of environmental changes in the Arctic.

By far, the most serious environmental change affecting indigenous cultures is the constriction of indigenous controlled land, a process that seems never to end. When land is lost the resource base is diminished, but it also implies an encroachment upon an essential part of the culture itself.

The main encroachment upon indigenous territory is as land is being taken away by legal or political means. The Alaska Native Claims Settlement Act took away 89 per cent of land claimed by Native Alaskans. 20 years later the effect of this is being felt because Natives are losing priority rights to hunting and fishing on the land not owned by them any longer. As distinct from the Alaskan situation, the most recent Canadian land claims have retained indigenous priority rights to fishing and hunting on land otherwise seceded.

All over the Arctic the establishment of National Parks restrict the foraging activities of indigenous peoples.

Industrial activities, such as mining, hydroelectric development and establishment of new towns including the construction of highways, railroads, pipelines and airports is another encroachment upon indigenous land. The rights of indigenous peoples to land and subsurface resources are very uneven from one end of the Arctic to the other and the advantages accruing to indigenous peoples therefore also vary. In Greenland and in Nunavut the rights of indigenous peoples are defined, but in Russia, in the Nordic countries and in non-Native owned land of Alaska indigenous peoples have no rights.

Physical destruction of land is very serious in parts of Russia, and combined with pollution it has greatly affected indigenous fishing, hunting and herding activities in, for example, Western Siberia and Kola Peninsula. Other well-known examples are the effects of the Exxon Valdez oil spill to the indigenous Alutiiq of Prince William Sound and Kodiak Island, Alaska, and the effect to the Saami from the Chernobyl accident.

The effect of pollution is potentially very dangerous, but should no hide the fact that other activities, as mentioned, are far more serious to the land and to indigenous economies. Besides the above mentioned factors, uncontrolled forestry should be noted.

The cumulative effect

Each of the above mentioned activities are serious taken separately, but the real negative effect to indigenous communities and cultures is the cumulative effect. The cumulative effect is the scenario which arises due to the overall effect from, for example, mining ventures which are established without employing indigenous persons, when land is taken away from indigenous hunting and herding activities, when railways, roads and airports restrict the movement of animals and when pollution of rivers diminishes the fish stock. Besides economic effects this has a disruptive and disintegrative effect on indigenous communities.

There are two further consequences which should not be overlooked in this context. The first one is that indigenous peoples, in situations like these whereby they are in danger of completely losing their cultures, tend to strengthen their cultural identity. Thus, from being on the verge of complete cultural extinction, indigenous peoples return to their common history and common heritage.

The other effect is that social disruption and psychological stress are results of cultural disintegration. The widespread abuse of alcohol in the Arctic, the high incidence of suicide and the low living standard has something to do with the loss of control in general and the loss of cultural integrity in particular. And land is essential to the integrity of Arctic cultures. Nothing is more important to indigenous cultures than the land, the homeland.

5.4. Social and cultural conditions

All indigenous peoples of the Arctic suffer from a number of similar social and cultural problems or maladjustments. It is not my intention to delve deeply into this issue, but to stress the role played by similar histories and s<milar development policies pursued by the Arctic governments. The latter might appear as a surprise to many, but the fact is that the development policy as practised by the Soviet government in the post-war era was surprisingly similar to the one practised by Denmark in Greenland, USA in Alaska and so on.

In short, among the most outstanding problems are:
-A high rate of alcohol abuse.
-A high incidence of suicide.
-A high rate of accidents and violent deaths.
-Many people have lost their mother tongue and the children can no longer speak their own language.
-A defeatist attitude towards the future and passivity towards finding solutions to problems by their own efforts.

If we take a look into some of the common conditions that have prevailed in the Arctic in the post-war era, the most outstanding is the analogous conception of development which characterised the 1950s, 1960s and the 1970s, in the Soviet Union as well as in the Western countries.

Towns and population centres were constructed in order to promote industrial development (fishing, mining) and in order to facilitate health service and schooling. The people were moved from the countryside into population centres. The relocation took place by the use of administrative force (shops and schools being closed in the villages, health service only available in the central towns). The relocations were most radical in Greenland and in the Soviet Union, where fishing industries and state farms respectively were seen as the means to further the great leap forward into the industrial age for northern societies. In the West and in the East this evolution was considered inevitable and predetermined.

Talking to indigenous people in Alaska, Greenland or Russia today, they all mention the boarding school as most damaging to indigenous cultures of all the measures which followed the concentration policy. Even though many moved to the centres, others remained in the villages or on the tundra and taiga to take care of the reindeer herds. As Nikolai Vakhtin writes from Russia: "At the age of 15 or 17, they returned to their families as complete strangers, with no knowledge of traditional native culture or of home life. Parents also suffered since, in many cases, they lost all their feeling of responsibility towards their children and delegated it all to the State."

In the post-war era all Arctic countries exerted some kind of pressure against indigenous peoples' use of their own language. The consequence of this, of the boarding school system and of other factors has put many of the indigenous languages on the verge of extinction. Most serious is the situation in North and South Alaska, in Labrador, in the Scandinavian countries and among the smallest of the many indigenous groups in Russia. The language is a strong coherent factor in all cultures, and it is therefore essential to the cultural and social continuity that efforts are taken to preserve the languages.

33 per cent of the Inupiat-Inuit of northern Alaska is said to speak the native language. However, this figure covers the fact that fairly no children and young people speak the language. More Inuit in Canada speak the language and nearly all Greenlanders speak Greenlandic. In Sweden an investigation revealed that 75 per cent of the reindeer herders speak Saami, but only 40 per cent of other Saami. According to the 1989 census in Russia 77 per cent of the Nentsi speak their native language; the figure for the Eskimos is 52 per cent. Again, reality is that very few young people speak the language.

The assimilationist ideology which reigned in the Arctic until the 1980s was succeeded by a policy of negotiating with indigenous groups. Although not all countries have recognised them out rightly as *peoples,* all countries (with Sweden only recently) have accepted the need to integrate the indigenous groups *as such* into negotiations of relevance to their cultural and political aspirations.

6. Conclusion: Control and empowerment

In order to integrate indigenous peoples of the Arctic into the decision-making process, in order to adhere to the rights of indigenous peoples as outlined in various international settings (ILO-convention 169; the UN Draft Declaration Concerning the Rights of Indigenous Peoples; the UN Year of Indigenous Peoples; and others) and in order to protect the Arctic environment and

guarantee a sustainable management of renewable resources, it is a precondition that indigenous peoples have the organisational capacity to and are given the empowerment to attain control over their own affairs and destiny. The Arctic history shows us that any development which intends to be based on mutual understanding and respect starts with this.

The means however, have varied. In Greenland, political parties were the main movers behind negotiations for Home Rule; in Canada the government agreed to deal with self-appointed organisations that negotiated on behalf of indigenous groups; a similar process is now underway in Russia; in the Nordic countries the governments have agreed to install advisory, popular elected Saami assemblies.

Collective rights to land and culture are always being highlighted by indigenous peoples. This should also be accepted in the Nordic countries and in the other parts of the Arctic. The model to be chosen might vary, but indigenous peoples should be given a fair chance to fully discuss this matter and to be involved in all decision-making processes in relation to their land, including land-use and land-management.

Indigenous control of the harvesting, management and use, including marketing, of renewable resources is an important goal. In this respect, as in others, indigenous peoples and cultures should be respected and treated as equal and all Arctic countries should be obliged to promote a development policy based on mutual respect and equality.

The Arctic is still considered as a frontier for industrial expansion and for extraction of non-renewable resources. The understanding which has reached the tropical forests for the necessity to conserve the world's biological diversity has not reached the Arctic tundra and taiga. In general there is even less understanding of the value of protecting the cultural diversity, which otherwise is one of the most outstanding characteristic of the Arctic region.

The exploitation of non-renewable resources gives an interesting perspective on indigenous empowerment. In several parts of the Arctic there has been divergencies over the attitude towards economic development should the traditional economy be given priority or should industrial development (read: exploration of oil, gas and mineral resources) be considered as unavoidable? Two cases, the Inuvialuit signing a Final Land Claim Agreement in 1984 and the establishment of Home Rule in Greenland in 1979, indicate that when these agreements bestow specified rights and control over the exploitation of subsurface resources to the indigenous peoples concerned they will have a new interest in these activities. The Greenlanders and the Inuvialuit are today among the most pro-development groups of all Arctic indigenous peoples, but they are also in a position where they can influence the conditions for letting in oil- and mining companies.

A final factor to be mentioned is that conflicts over the exploration of sub-surface resources is no longer a White-Indigenous conflict when the latter have obtained some degree of influence and control. The conflict in northern Alaska bear clear witness to this.

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APPENDIX III

Defence, Security and Civility in the Arctic Region

by Franklyn Griffiths

Questions of war and peace including the control of armaments are regularly dealt with by governments on a regional basis throughout the world. Such is the case in Europe, in the Middle East, in the Americas, in Oceanea, in Africa, in Antarctica and so on. But the Arctic is different. The eight states of the region are quietly opposed to sitting down together for negotiations on confidence-building, arms-control and disarmament problems in the circumpolar North. For some of the Eight, even to have arms matters discussed, much less negotiated, on a regional basis in the Arctic is unacceptable.

How can this be? The Cold War is over. The Soviet Union and the Warsaw Pact are gone for good. "Imperialism" is no longer the foe as seen from Moscow. The liberal democracies are striving to strengthen democracy and market forces in Russia and other countries of the former Soviet Union. Momentous nuclear and conventional arms reduction agreements are being implemented for Europe, and for Russia and-the United States. But the Arctic governments evidently believe it appropriate to maintain the circumpolar North as an arena for the endless interplay of military forces, especially nuclear. It is as though the Eight were prepared to make the Arctic into a kind of Jurassic Park for nuclear weapons long after these devices become extinct in other parts of the world.

In their support for what maybe termed the Arctic exception, the Eight are deferring to the two major military powers amongst them. In essence, they are deferring to the U.S. government. For example, in talks among the Eight on Canada's initiative to establish an Arctic Council[1] or central intergovernmental forum for the north circumpolar region, seven of the Eight support the proposition with varying degrees of commitment, but in the strong belief that it can work only if the eighth state joins in. The eighth state, the United States, remains firmly opposed, even though all matters pertaining to an Arctic Council, agenda-setting included, would be handled by consensus.

Chief among U.S. objections to an Arctic Council is the belief that, one way or another, defence and security matters would be discussed in this body. The remaining seven broadly share the expectation that questions of defence would not be dealt with in an Arctic Council operating on the basis of consensus unless and until all were agreed. The implication here is that military affairs are not to be handled in a place that is to occupy itself with non-military or civil issues for the foreseeable future. As of mid-June 1993, however, it is doubtful that the United States would support the creation of an Arctic Council even if the Arctic exception were written into its terms of reference.

To get anywhere in Arctic international relations is to get consensus. Right now there is an intergovernmental consensus on the commandment that thou shalt not negotiate on Arctic military matters in Arctic forums. Is there reason to doubt the consensus? Maybe there is. In my view, the urge to maintain the Arctic exception inhibits and otherwise gets in the way of priority international business on Arctic civil issues, as is evident in the case of the Arctic Council. The consensus here may also be out of keeping with new defence requirements arising from change in the nature of war. It may contribute not so much to security as to insecurity, when non-military dimensions of security are factored into the calculation.

Finally, to acquiesce in the intergovernmental consensus on the Arctic exception is to go along with the needs of an imperious southern military-industrialism at a time when we to the south should be treating Arctic residents and the Arctic environment with greater respect and indeed civility.

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[1] For a discussion of the Arctic Council proposal, see Arctic Council Panel, To Establish an International Arctic Council: A Framework Report. (Ottawa: Canadian Arctic Resources Committee, May 1991).

In what follows my main aim is to argue a case for review of the consensus on the Arctic exception. I also seek to introduce the reader to some of what is happening in the Arctic today where de fence and security matters are concerned.

1. Defence Imperatives

A glance at the map reminds us that the Arctic is a maritime region.[2] Armies do not have a substantial role to play here. Though land-based intercontinental ballistic missiles (ICBM) and bombers would follow trans-polar flight paths in the event of all-out war between Russia and the United States, such uses of Arctic spaces would be transitory. In contrast, naval forces today seem destined to a permanent presence in the region. If the governments of the Arctic are to exempt themselves from regional discussions of and negotiations for military confidence-building, arms control and disarmament, the exemption will in important ways be a naval one.

Geography, ice conditions and technology have joined with other considerations to produce certain realities where Arctic naval activities are concerned. First, for reasons of access to the sea, Russia maintains a northern fleet on and around the Kola Peninsula (Table 1). Russia's permanent northern naval presence is of a magnitude absolutely to dwarf that of all other regional states put together. In particular, Russia is capable of mounting formidable defences in the Barents Sea and related waters - the so-called northern bastion - in order to protect a large proportion of its nuclear-fuelled ballistic missile submarine (SSBN) force. Virtually any Arctic arms agreement will have to recognize not only what is legitimate in Russian military requirements, but also the interest of other states in not adding to Russia's local preponderance.

Second, as long as strategic nuclear weapons remain in the Russian and U.S. inventories, the use of Arctic waters by SSBN, nuclear-fuelled attack submarines (SSN), surface and airborne anti-submarine warfare (ASW) forces, carrier battle groups and so on will have a global dimension. In principle, any change in the deployment, number or quality of these forces as a consequence of arms agreements specific to the Arctic would have to mesh with considerably broader objectives in maintaining the sea-based element of nuclear deterrence. At the same time, naval establishments, favouring freedom of action as they do, can only be expected to resist the growth of regionally-based restrictions on their mobility.

Perhaps most important, the Arctic is acquiring greater significance relative to other regions for the deployment and also the testing of nuclear weapons. The Strategic Arms Reduction Talks (START) between Russia and the United States have obliged Russia to move a progressively larger proportion of its strategic warheads onto submarine-launched ballistic missiles (SLBM), as is evident from Table 2. Though some SLBM will be aboard SSBN based in the Sea of Okhotsk, the indications are that Russia's northern bastion will become increasingly vital as a strategic nuclear weapons preserve by the beginning of the millennium.[3] Any regional arms agreement that served to underwrite the northern bastion would again be intimately linked to global deterrence requirements having little or nothing to do with the Arctic as such.

As to nuclear-weapons testing, the collapse of the Soviet Union (and before that the growth of anti-nuclear environmentalism surrounding the test site at Semipalatinsk in the republic of Kazakhstan) has left Russia with only one nuclear test area, the Arctic islands of Novaya Zemlya. Nuclear testing is obviously not in itself a prime naval matter,

[2] Background essays on Arctic military and political affairs by David Cox, Stephen E. Miller, Winy Streng and John Kristen Skogan are to be had in Franklyn Griffiths, cd., Arctic Alternatives: Civility or Militarism in the Circumpolar North. (Toronto: Science for Peace/Samuel Stevens, 1992). See also A.I. Arikaynen and O.A. Kossov, Problemy voennoi besopastnosti v Arktike [Military Security in the Arctic], (Moscow: Institute for Systems Studies, 1990), and Stephen E. Miller, "The Superpowers and Nordic Security in Post-Cold War Europe," in Bo Huldt and Gunilla Herolf, eds., Yearbook 1990-91: Towards a New European Security Order. (Stockholm: Swedish Institute of International Affairs, 1991), 293-311.

[3] There is a Norwegian report of August 1992 conveying an official Russian view that priority for sea-based nuclear forces will go the northern fleet as distinct from the Pacific. Cited in Lena Johnson, "Russia as a Seapower," unpublished paper (Stockholm: Swedish Institute of International Affairs, January 1993),

Table 1
RUSSIA: NORTHERN FLEET INVENTORY 1992

Arctic and Atlantic: HQ Severomorsk. Bases: Kola Inlet, Motovskiy Gulf, Gremikha, Polyarnyy, Litsa Gulf.
Submarines: 126, among which 34 SSBN, 38 SSN, 21 SSN equipped with cruise-missile launchers, 24 conventional submarines.
Principal surface combatants: 61, among which 3 V/STOL and helicopter aircraft carriers, 11 cruisers, 9 destroyers, 38 frigates.
Other surface ships: 25 patrol and coastal combatants, 40 mine warfare, 12 amphibious, some 190 support and other.
Naval aviation: 218 combat aircraft and 70 armed helicopters.
Naval infantry: 2 brigades.
Coastal defence: 1 coastal defence division (270 main battle tanks, other forces), 1 artillery regiment.

Source International Institute for Strategic Studies, The Military Balance 1992-1993 (London: Brassey's for the 11SS, 1992), 96.

Table 2
RUSSIAN AND U.S. WARHEAD LOADINGS

	Russia		United States	
	Pre-START	Post-START	Pre-START	Post-START
ICBM	6,612	500	2,450	500
SLBM	2,804	1,648	5,760	1,728
Bombers	855	820	2,665	1,272
Totals	10,271	2,968	10,875	3,500

Source: International Institute of Strategic Studies, The Military Balance 1992-1993 (London: Brassey's for the 11SS, 1992), 226. Pre- and post-START dates are 1991 and 2003 respectively. Russia has not amounted what its force posture is to be as of completion of START. The force posture given here is thus one of several options.

but it was the Russian navy that seized control of the islands from the provincial government in Arkangelsk in 1992. If nuclear-weapons testing is resumed by Russia - a matter still to be resolved as of mid-June 1993- the region in yet another way will become home to military activity that is unacceptable elsewhere. At the same time, to resolve this problem once and for all is again to go far from the Arctic, and to engage the different nuclear-weapons states in negotiations for a comprehensive nuclear test ban.

Put all these varied considerations together and we can begin to see how Russian and U.S. national security managers might be ill-disposed to Arctic-based discussion of defence and security matters. From their standpoint, to seek military confidence-building and arms agreements among the Arctic Eight is to do things backwards. The Arctic is not the source of significant military problems. It is not the place to go in dealing with these problems insofar as they are to be dealt with by negotiation. Nor are intergovernmental discussion and negotiation necessarily the way to go in any case. Politics enters the picture here.

It has been said that for the U.S. navy there are still two superpowers in the world. One is the U.S. navy itself. The other is the U.S. Congress, with its control over appropriations. All else, as before, is secondary. Equivalent thinking is surely to be found in the Russian naval establishment. Naval arms negotiations, it follows, are to be avoided. They make for bad acoustics. They can only give new voice to cost-cutters, arms controllers and all manner of uniformed civilians who would inject themselves into the naval policy process including appropriations. And if naval arms talks are placed on a regional footing in the Arctic, they cannot but give added voice to the six lesser Arctic states who really have little or no business here. Similar attitudes, or a reluctance to contest them, would seem to be widespread in the national security establishments of the Six, thereby helping to

account for consensus among the Eight in favour of the Arctic exception.

More could be said about defence-related aversions to arms bargaining and arms agreements specific to the Arctic region. But might there be another defence view? Presumably it would share the judgement that Arctic naval development is inherently derivative. But it could derive different implications from what has been happening outside the region.

Two phenomena seem especially important here.[4] First, the collapse of the communist bloc and then of the Soviet Union has made virtually impossible the outbreak of a major land war in Europe with little warning. Second, there is the effect of START reductions on the number of strategic warheads that will be available to Russia and the United States on single-warhead ICBM and SLBM by 2003 (Table 2). These reductions stand to make counterforce nuclear deterrence difficult, if not impossible. This is an esoteric but critical point. In the absence of warhead plenty, neither side will have the offensive capacity to conduct effective attacks against the opponent's initial or residual strategic weapons including those on SSBN. On the contrary, both could acquire a greater interest in ensuring the stability of sea-based strategic forces.

Russia adopted a northern bastion solution to the Soviet-era problem of defending SSBN against superior NATO ASW and submarine silencing. Soviet decision-makers were enabled to do this by growing SLBM ranges which allowed coverage of North American and European targets from Arctic waters. But as well as protecting Soviet SSBN and thereby contributing to Soviet deterrent strength, the Soviet navy was to be in a position to deter and if necessary to help fight a land war in Europe. These latter aims were to be achieved in three main ways. First, by holding off U.S. carrier-based battle groups and cruise-missile equipped SSN in the Norwegian Sea, so that NATO could not strike at Soviet forces on the Kola or on land in Europe over the Baltic Sea.

Second, by seizing parts of northern Norway so as to blunt the U.S. and NATO ability to hit Soviet SSBN and targets on land, and to allow Soviet forces to operate more readily to the south. And third, as the situation improved on the northern flank, to embark on the interdiction of NATO resupply by sea from North America to the land war on the continent.

Russia's leaders obviously face a radically different strategic situation today. With land war against the Western powers very sharply degraded as an eventuality, with the U.S. now likely to reduce its SSN force by a sizeable proportion, with sea-launched cruise missiles already withdrawn (but not destroyed) from U.S. and Russian submarines and surface combatants, Russia's Arctic naval requirements can only be changing. No longer do they need to protect in the Norwegian Sea as they once did, to be able to grab parts of the Norwegian north, and to interdict NATO sea lanes in the Atlantic. Similarly, as Russia and the United States move in the direction of minimum deterrence and a dwindling ability to mount attacks on one another's strategic weapons, Russia may gain new incentives for cooperative and unilateral action to stabilize the northern bastion. Somewhere in this varied set of considerations there surely lurk the elements of a Russian interest in tacit or formal measures of naval confidence-building and arms control.

The situation may appear in a different light to the United States. Given its naval as well as overall military-strategic, to say nothing of economic superiority over Russia, incentives to negotiate or otherwise to impart stability to strategic military interaction in the Arctic could be harder to find. Nevertheless, the Arctic theatre and the performance of strategic ASW there can only be of diminishing interest to the U.S. navy when viewed in relation to other maritime areas. Further, if Russia and the United States are to deny themselves the option of effective counterforce strategic warfare, and to retain assured second-strike capabilities loaded heavily on SLBM, the U.S. navy should sooner or later downgrade its mission to track and when required to attack Russian SSBN. As well, the end of the threat of abrupt land war in Europe all but eliminates the U.S. need to be able to strike on a moment's notice against distant Russian targets on land from Arctic waters.

In sum, the U.S. navy could, maybe sooner than later, be in a position to set aside or simply to move beyond the Maritime Strategy of going for broke against Russian Arctic SSBN, SSN and other assets in the

[4] A major debt in what follows to the end of this section on future war is hereby acknowledged to Professor John A. Kroll of Dartmouth College, Hanover, N.H., who is author of a highly stimulating unpublished paper, "Arctic Arms Control After the Cold War" (November 1992). See also the parallel assessment in Peter Gizewski, "Arctic Security After the Thaw: A Post-Cold War Reassessment," Aurora Papers 17 (Ottawa: Canadian Centre for Global Security, January 1993), This latter study is the report of a panel on Arctic security.

earliest phase of the transition from nuclear crisis to war. And yet, for the United States to let upon Russia's northern bastion could be to release Russian SSN and surface combatants for distant-area missions that Washington might prefer to avoid. It could also be in the U.S. interest to provide incentives for Russia to structure its navy primarily for coastal defence and SSBN protection in the Barents and Okhotsk seas. A trade-off in this case might take the form of asymmetrical, unilaterally amounted parallel SSN reductions in favour of the U. S., in return for which the U.S. would more or less respect the integrity of the northern bastion and perhaps that in the Sea of Okhotsk.[5]

Perceived change in the character of a future war is thus eliciting new defence relationships between Russia and the United States in the Arctic. In principle, these relationships may be expressed or codified in tacit or formally agreed arms measures dealing with SSN cuts, naval doctrine talks, joint naval peacekeeping exercises and so on. There is substantive Arctic-related arms business to be dealt with through negotiation or parallel unilateral action.

But, all said and done, we still have to acknowledge that the Arctic-related arms agenda is essentially the domain of the Two. It also deals with military-technical problems whose sources lie beyond the Arctic, and whose solutions do not really require participation of the Six. The case for the Arctic exception does indeed hold up to scrutiny when the region's arms problems are viewed through a defence optic. Moreover, we now see that the need for negotiation among the Eight may be circumvented by the Two if they wish to stabilize or redirect their military interaction through tacit bargaining and parallel unilateral action. All of this presents no problem as long as political constituencies within the Six, and also within the Two, are prepared to wait on the governments of the Two while they consider whether and how to make the Arctic safe for nuclear weapons.

[5] The SSN of the U.S. may decline to 55 from the 88 now in operation. See Eric Schmitt, "Pentagon Is Ready With a Plan For a Leaner, Versatile Military," New York Times, 12 June 1993. On SSN reductions, see also Tariq Rauf, "Post-Cold War Naval Arms Control in the Arctic Region: Reductions in U.S. and C.I.S. General-Purpose Nuclear Submarines," in Tariq Rauf and Peter Gizewski, "Naval Arms Control Implications for the Arctic Ocean of Limits on Attack Submarines and Cruise Missiles," Aurora Papers 14 (Ottawa: Canadian Centre for Global Security, September 1992), 1-34.

And yet, surely there is a better future for the Arctic, one that gives all of the region's countries a say in what happens on matters affecting their security in a substantial way. We will not find it if we view the region through a defence optic. The problem will have to be redefined if the intergovernmental consensus on exempting the Arctic from arms bargaining is to be brought into question.

2. Dimensions of Security

At this point we should remind ourselves that people live in the circumpolar North. Though their situation varies around the region, Arctic inhabitants tend to feel exploited and marginalized by population majorities and their decision-makers in national capitals to the south. They may feel insecure on any number of grounds which differ in quality and extent from the southerly experience. Consider merely the environmental destruction faced by Russian northerners as a consequence of nuclear waste dumped by the Soviet military. Or where the aboriginal peoples of the Arctic are concerned, they may be faced with the threat of annihilation as distinct cultures and communities.

One way or another, residents around the Arctic feel and are exposed and insecure, some acutely so. It also happens that inhabitants around the region have more in common with one another than they do with fellow nationals to the south. So if we are to speak of security in the Arctic, we should right away ask whose security and what kind of security. Is it the security of the state and the majority it represents? Is it the security of northern minorities and of the physical and living environment they inhabit? To the extent that Arctic political-military, socio-economic and physical processes are to be viewed in a circumpolar perspective and treated as interdependent wholes, should we be thinking about the security of the Arctic as a region? Might we to the south have shared responsibilities as stewards for the Arctic region taken as a whole? Or is such a role best left to northerners themselves?

For decades it was the convention that the "security" in international peace and security referred to military threats and moves in relations among states. As such, security was not that far removed from "defence". But now the meanings of security have begun to change with change in international affairs.

A defence optic draws attention to military-technical considerations, and to self-help and alliance in deterring and defeating everything from armed attack to low-intensity challenges to the sovereignty of the state.

A security perspective is somewhat different. Though we may remain in the realm of opposed forces, the behaviour connoted is more relational in that the framework encourages an appreciation of mutual dependence which tends to be slighted in the discourse of defence. As such, the notion of security is more conducive to collaboration as well as antagonism among adversaries.

Second, where problems of armed force are concerned, concepts of security serve to highlight their political as well as military-technical dimension; moreover, they suggest increasingly that security is to be had above all by political means. Third, as security thinking and practice widen from a traditional political-military agenda to include questions of energy, economic, environmental, cultural and population security and security of the person, the notion increasingly acquires a non-military or civil character. Fourth, a security optic, as will be seen, is more amenable to the discussion of regional as well as national or global requirements. The question before us is this: Why should a defence perspective on Arctic arms bargaining prevail over an outlook that is more relational, political, civil and regional?

Consider for example the political dimension of Arctic military problems. Defence thinking asks of us a willing suspension of disbelief in order for material and intellectual resources to be committed to meet the requirements of readiness for nuclear war between Russia and the United States. Let us say it again: nuclear war between Russia and the United States. To be sure, we can ponder Russia's descent into political chaos and nuclear adventurism, or the various ways in which a well-armed United States might coerce and humiliate a weakened Russia short of having to go to war.

Yet it is ever more difficult to go along with retained political assumptions and scenarios of enmity when Russia today welcomes the professional assistance of the U.S. army in dealing with the Russian army's massive poblems of desertion and draft evasion.[6] Add to the diminishing probability of American-Russian nuclear war its dubious utility in pursuit of any purpose that one side might now have towards the other, and the entire structure of defence thinking that would prohibit arms talks among the Eight begins to wobble.

The Arctic exception serves the cause of readiness for a war that cannot serve any rational cause and that cannot in any case be deterred if one of the potential belligerents is determined to behave irrationally.

Danger is by no means wholly banished between Moscow and Washington. But so much of it is gone. Why then should the Eight continue to be governed by received military-technical knowledge about Arctic nuclear-weapons deployment and testing when the political purposes that underlie these requirements have been all but blown away? Do we go along with testing because it is somehow inherent in nuclear weapons that testing for safety and reliability is obligatory? Or might we say no, this no longer makes sense and, speaking for the Arctic, we now oppose testing in the region?

Do we go along with stabilization-of-deterrence thinking and favour the establishment of a permanent Arctic bastion for some 1648 warheads on Russian SSBN? Or do we say there is no good reason for the retention of more than a handful of such weapons in the first place? Do we yield to the navies' natural aversion to regionally-based deployment limitations? Or do we say that the acute, the visceral political conflict has passed, and with it the force of technical argument that would ban regionally-based arms arrangements? The point here is that in the absence of a commanding political purpose, the imperatives that emerge from defence discourse on Arctic military affairs are much more open to question.

To the extent that publics and governments of the Eight are prepared to take the emerging political realities to heart, they may find the will to articulate and act on their own views of security. They will be less inclined than before to pursue security by military means. In particular, the Six may now strive for ways to promote Arctic military cooperation among the Two, rather than follow in the wake of the Two as they have.

If the response of the Two were to collaborate in tacit fashion - that is, without

[6] See the report in David Wood, "U.S. Nursing Case of Red Army Blues," Globe and Mail, 11 June 1993, Russia's Foreign Minister has told European colleagues, half-jokingly, that Russia has no "reliable and available troops" to send as additional U.N. peacekeepers in Bosnia and Herzegovina. Elaine Sciolino, "Moscow Won't Send More Troops to the Balkans," New York Times, 12 June 1993.

meeting on Arctic matters as a twosome or in a forum of the Eight - the Six would still make a contribution where none has so far been made. And well before the day on which the Eight first meet to negotiate on the disposition of armed force in the region, they should find a way to discuss and develop a collective definition of the Arctic military-strategic situation as it forms part of the global military environment. This assessment should be forwarded by the Eight for consideration in START, in negotiations for security and conventional force cuts in Europe, and in other relevant extra-regional forums.

In addition to its widening array of political implications, the idea of security is these days gaining a civil or non-military dimension that cannot but affect intergovernmental discourse in the Arctic. Consider, for example, three items of civil security that bear on military affairs: requirements of environmental security connected with (1) nuclear weapons testing and (2) nuclear waste cleanup;[7] and the needs of economic security in regard to (3) conversion of the economies of small northern communities which have been heavily dependent upon a military presence.

Here we have a set of defence-related problems that bear on the security of northerners in real ways. Should the Eight deny themselves the ability to discuss and negotiate collective measures to deal with such matters because they have a defence or military dimension? We see here, in principle, how shortsighted it maybe to exclude military matters explicitly from meetings of the Eight. In practice, we see how the Arctic exception may serve to sacrifice the economic and environmental well-being of northerners to the outdated and excessive demands of southern-based defence interests.

Far better for the Eight to rely upon consensus procedures in determining what is to be dealt with including those defence-related matters that may eventually prove acceptable to all. Far better for a subset of the Eight - for example, those gathered in the Barents Euro-Arctic Regional Council -to take an initiative that begins to turn things around today. This could be done by setting up a multinational pilot project to clean up one or two nuclear waste sites created by the Soviet military in the Russian Arctic. A project of this nature would underscore the commitment of Arctic countries to environmental security. It would demonstrate their ability to deal with defence-related environmental matters without compromising the defence capabilities of any country. It would evoke a positive response among southern majorities, thereby adding new profile and support to international Arctic cooperation on a progressively wider array of issues.

At a more fundamental level, the security of Arctic peoples and their environment is better served by action on a civil regional agenda than by one keyed to global or extra-regional military priorities. Environment, economy, sustainable development, aboriginal rights, trade expansion, technology transfer, tourism, environmental impact assessment, transportation, administration of justice, health - such are the live concerns of the Arctic. To act effectively on them depends on an uninhibited ability to bring converging and common interest together into cooperation.

To some degree, an Arctic civil agenda can indeed be acted upon independently of what transpires in the domain of defence and military security, But military-political interaction is suffused with suspicion and wariness, to say nothing of the military's need for freedom of action. The result is to inhibit to pan-Arctic civil collaboration, as shown by the Arctic Council experience to date. Accordingly, rather than leave Arctic military matters to unfold as they may, the peoples and states of the region should clear away military-political obstacles on the path to circumpolar cooperation. To get on with what really counts in the region, our governments have no choice but to pursue the discussion and, as consensus allows, the negotiation of arms agreements in Arctic forums.

Finally, we should note that a regional perspective on the Arctic gains prominence when the main concern is not defence but a wide-angled view of security. This effect is produced in different ways. When attention is focused on the civil as distinct from the military, we are encouraged by the nature of the issues - and by the need for efficiency in dealing with them - to view them in a circumpolar light. Do this frequently enough - as with Arctic science, long-range transport of pollutants, housing, health, aboriginal issues - and soon we start to look at the region in the round. The Arctic becomes an increasingly interdependent whole which needs to be appreciated and treated as such. It becomes less a place into which we venture from the south in pursuit of an overriding

[7] Rune Castberg and Olav Schram Stokke, "Environmental Problems in Northwest Russia: Regional Responses," International Challenges 12 (1992), No. 4,33-45.

mission such as defence or, for that matter, resource extraction.

The Arctic also comes more directly into view as a region when the political dimension of security is granted the attention it deserves. As long as security is understood essentially in military terms, the Arctic and the situation there are subordinate to dictates emanating from the extra-regional and global surround. Accentuate the political, on the other hand, and a relationship of interdependence begins to open up between the regional and the global. The process here is real but indirect.

Pan-Arctic civil collaboration pursued strictly on its merits - as with the Arctic Environmental Protection Strategy, the International Arctic Science Committee, the Northern Forum - also helps to build confidence and trust in a region where for decades there was virtually none. As with the easing of tension and growth of cooperation in other parts of the world, civil collaboration in the Arctic contributes to the wider global sense of security. In so doing, it helps reduce the severity and prevalence, outside the Arctic, of opposed-forces thinking which otherwise would drive military interaction within the region as before. Civil cooperation in the Arctic which is pursued for its own reasons may thus contribute indirectly to the demilitarization of the region. Civil collaboration among the Arctic countries is a form of non-military confidence-building with the potential to influence security at the global and regional levels. Arctic security, seen from this standpoint, is not derivative. The Arctic countries can act for their security in Arctic forums.

So what then might we conclude from this foray into a security perspective on the Arctic? How in particular has the Arctic exception fared? As I look at it, a more realistic acceptance of political considerations casts doubt on the validity of the defence thinking at the basis of the Arctic exception. The politics of international security is now such that we no longer need to bow so deeply in the Arctic to military-technical requirements, as with the need to shape behaviour around the claims of nuclear deterrence or naval mobility.

The Eight, and combinations thereof, are today in a position to meet together in order to resist Arctic nuclear weapons testing, to prevent the Arctic from becoming a permanent preserve for nuclear weapons or for conventional arms withdrawn to Russia from continental Europe, to draw up an agreed definition of the Arctic international security situation for presentation at extra-regional arms talks, to consider the long-term potential for conflicts specific to the Arctic in which conventional weapons might be employed, to address circumpolar environmental and economic consequences of military activity, to initiate a multinational pilot project on Arctic nuclear waste cleanup. In the foregoing we see the outlines of a legitimate and worthwhile agenda for negotiation on arms and arms-related problems in Arctic forums.

We need also to acknowledge that military-political suspicion in the Arctic does get in the way of needed common action to meet non-military security problems in the region. It could even be that an attitude of tolerance towards externally-driven military activity in the Arctic is inappropriate. Finally, it should be recognized that in circumpolar civil collaboration we have not only the real business of Arctic security and cooperation, but a means of reducing the dependence of the region on extra-regional forces where military uses of Arctic spaces are concerned.

In sum, I suggest that the intergovernmental consensus on the Arctic exception is open to question and deserves to be reviewed.

3. Conclusion: On Civility

Consensus on the Arctic exception owes much to the ordered, concise and seemingly persuasive discourse of defence, and to its single-mindedness and readiness to suppress context. When real-world complexities of purpose and setting are factored into the analysis, new insights are produced, but at the expense of clarity and coherence. Defence discourse has its limitations, but so too does current thinking about international security. The difficulty arises principally from the inclination to view so many problems as problems of security: The term risks being emptied of ready meaning and of the ability to lend direction to policy. Contemporary notions of security do assist in a critique of old-style defence thinking, but they as yet are unable to provide an integrated alternative perspective. So, what really are we talking about in questioning the Arctic exception? What, simply put, do we wish to achieve in Arctic international relations? What is our common understanding, our vision of the Arctic as a region?

We need a perspective that encourages consideration and respect for Arctic inhabitants and the Arctic environment, one

that is consistent with responsibilities of stewardship around the region and not one that favours exploitation of the Arctic for external gain.[8] Experience makes it all too clear that in yielding to the outsider's viewpoint and interests in the Arctic, we deny respect and consideration to the region and its peoples. To favour the outside user is to imply that southerners, rather than northerners, are best equipped to judge what is best and how best to do it in the Arctic. To endorse the outsider's strategic military interests in the Arctic is to risk making the region into a permanent preserve for sea-based nuclear weapons. And if one thing in particular tends to deny consideration and respect to Arctic peoples and their environment, it is the uncivil practice of menacing populations and their physical setting with nuclear annihilation. The intergovernmental consensus on the Arctic exception supports, favours and implies all these things.

The consensus should rather aim to make the Arctic into a region of enhanced civility, a region in which southern majorities and the governments that speak for them accord progressively greater respect and consideration to one another, to their circumpolar environment, and especially to their Arctic populations. Civility is what we could well aspire to in Arctic international relations. It is where we are already heading in the surge of civil cooperation and institution-building in recent years. The cause of civility can only benefit from an endeavour by the Eight to discuss and otherwise resolve Arctic military problems in Arctic forums.

A number of recommendations and conclusions could be provided in support of greater civility in the circumpolar North. Let me offer three recommendations. The Arctic Eight ought to establish an expert working group to examine and report on opportunities for Arctic-related measures of confidence-building, arms control and disarmament to be realized in non-Arctic negotiating forurns and, as appropriate, directly by the Arctic states themselves. The terms of reference of this working group should include discussion of international security; participation should include direct representation of northern inhabitants.

Secondly, within the framework of the Barents Euro-Arctic Regional Council, an initiative should be taken to setup a multi-national pilot project to gain practical experience in the removal of nuclear waste of military origin from one or more Arctic locations. Third, if nuclear weapons testing is not resumed on Novaya Zemlya principally because the U.S. government opts not to recommence as of summer 1993, the remaining seven Arctic states ought jointly to express their gratitude, as Arctic stewards, to the President of the United States. Conversely, if testing is to be resumed, the Six should make their common position clear.

8 For a more extensive discussion, see Franklyn Griffiths, "Civility in the Arctic," in Franklyn Griffiths, cd., Arctic Alternatives, esp. 297-307.

APPENDIX IV

The Arctic Region - Challenges and Opportunities

by E. F. Roots

The Arctic Regions - our Homeland and our Frontier[1]

We have assembled hereto discuss the challenges and opportunities presented by the development, the protection, and the wise governance of a distinctive part of planet Earth - a part of the planet which is, to each of us in the countries of the Nordic Council, both a homeland and a frontier.

For those who live in the Arctic regions, both those who belong to one of its indigenous cultures and those from farther south who have taken up residence there some time ago, the Arctic is of course "home", but at the same time, because of the overwhelming pressures and problems of the modern-day world of the South that do not fit well into northern conditions and values, but which nevertheless impose themselves on the Arctic, it is very much a frontier, even for people who live there; a borderland between two human environments, two different sets of economies and two different consciousnesses.

The Arctic is also both a frontier and a homeland for people who do not live in the Arctic, no matter where they live but especially for those who are in the less Arctic parts of northern countries. For our modem civilization and economy, and the way we are affecting the condition of the global environment, has made the whole world our home. Together and individually we live in and affect every part of it, regardless of where born and where we sleep at night. And yet the distinctive features of the Arctic region make that part of our global home for each of us very much a frontier, the edge of the familiar, a place whose weather, resources, geography and history affects the rest of the world in unexpected ways, where our habitual practices, technologies and concepts do not have the results ordinarily expected, and where new knowledge and new approaches are needed if they are to be successful.

Finally, and particularly in the context of this conference, the Arctic is at the same time a homeland and a frontier for those who are entrusted with the governance of its territories and peoples. Each northern country includes Arctic regions, and therefore the Arctic is part of the homeland for which the governments, the parliamentarians and the bureaucrats are responsible. But the national government of each northern country is occupied mainly with social, economic, or security issues of more populous non-Arctic parts of the country, and it must deal with Arctic issues using government structures and socio-economic systems that were not evolved for Arctic conditions or problems at all. In that respect, for the governments of every northern country, its own Arctic territories and the questions raised by the Arctic regions in general, are very much a frontier, bordering on the unfamiliar or needing new and often un-tried actions or policies.

It is in this dual context of the Arctic regions being both a homeland and a frontier - for knowledge, for science and technology, for economic and social development, for cultural values, and above all for government responsibility and intra-national and international co-operation, - that we can consider the main themes of this conference.

The Nature of Arctic Regions

What is distinctive about the Arctic regions? The three background papers prepared for this conference provide excellent summaries of the Arctic regions today, in areas of direct interest to Parliamentarians. In these opening remarks I can provide only a bit of the background setting and the continuity of the issues we will be discussing. For this important meeting is another step in a long journey, that reaches back to the beginning of our history, in which the Arctic regions have provided both opportunities and challenges, and been both homeland and frontier.

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[1] The author has borrowed and adapted this expression from T.R. Berger (1977) "Northern Frontier, Northern Homeland; The Report of the Mackenzie Valley Pipeline Inquiry": Canada, Dept. Supply and Services, Ottawa.

What we today call the Arctic regions have been inhabited by human beings for at least 40,000 years, for it appears that almost as soon as the genus *Homo* learned to use tools, clothing and fire and to survive in environments less benign than the tropical conditions of our biological ancestry, small bands of humans reached the northernmost parts of Eurasia and, not many thousands of years later, northernmost North America. But it remained for Greece, the classical centre of recorded scholarship, to begin the systematic process of observation, exploration and inter-societal interaction that brought the Arctic into the known world. That process is continuing today, with this very conference.

Professor Heel has noted that the first polar explorer of record was Phyteas, from the Greek colony of Masilia, the modem Marseilles, who about 320 BC sailed in search of the source of the metal tin which had mysteriously appeared from time to time in the markets of Masilia, coming, it was said, through Gaul from some remote northern land. The evidence appears to show that this was not an impulsive or rash adventure, but a carefully planned, deliberately lengthy expedition, led by an already well respected sailor merchantman, with a specially built ship whose preparations suggest that there must have been considerable previous knowledge of the conditions to be expected. Navigating by sun and stars, Pytheas steered his square-sailed galley to Brittany and to Cornwall, the source of the tin, and then continued north. After sailing north from the British Isles for six days he came to another land, which he identified as Thule, where the nearby sea was frozen. Whether this was Iceland or northern Norway after encountering pack ice in the North Atlantic has been much debated; but the consistency with which the wealth of information brought back by Pytheas was reported and used by many contemporaneous sources leaves little reasonable doubt that he reached Arctic latitudes and spent some time there. Observations on the relative positions of the stars, the midnight sun, the differing lengths of days and nights as the seasons progressed, the connection between the tides and the phases of the moon, large sea mammals, the unexpected phenomenon of the freezing of the sea, which was mystifying and terrible to warm-ocean sailors - all these were new to Mediterranean geographers and scholars, so that the words to describe them had to be borrowed from Pytheas' Celtic and Norse contacts. So convincing was his information that this one extended voyage significantly enlarged the known world and brought Arctic phenomena into what was the mainstream of European knowledge and literature.

But Pytheas and his contemporaries, who were primarily on a commercial venture, also provided substance to a persistent Arctic fascination, a sense of wonder and mystery, that has persisted for two thousand years and itself has had a strong influence on history, investment, and government affairs. In the Arctic, the lands under the constellation Arktos or the Great Bear, even the most commonplace and dependable acts of Nature, such as the rising of the Sun in the morning and its setting in the evening, were strange and different. Beyond the Arctic Circle the Sun went round and round in summer without setting, and in the time of the winter solstice it did not rise at all. The cold was overwhelming (deadly, but not fiery Hell at all); sea froze, great mountains of ice floated on the oceans, strange shafts of light danced in the heavens, and the mariner's lodestone spun endlessly on its thread without pointing to Polaris, the North Star. Through the centuries, these Arctic phenomena have come to be explained. But the distinctiveness of the Arctic, and the sense of wonder and the magic of Nature, no less for those who live there than those who regard it from a distance or have responsibility for governing it, remains. The images of the Arctic, in the public, today as in the past are in part real, in part fancy, in part myth. They too are characteristics of our Arctic homeland and our frontier.

What is the Arctic, and why is it distinctive? Professor Heel has noted that there are many definitions, based on quite different criteria, each for a particular purpose in setting "Arctic regions" somehow apart from other more southerly parts of the planet. Different northern countries have placed legislative or jurisdictional boundaries on what they consider to be "the Arctic", for political or administrative purposes. And Professor Griffiths, Young, and others have pointed out that in human affairs of politics and geopolitics, quite aside from geophysical or environmental phenomena, there is a case for the Arctic regions to be considered distinctive, even to a concept of "the Age of the Arctic". Despite the variety of criteria, the southern boundary of what has been called the Arctic does not vary very much, except in a couple of places. For some purposes the precise boundary does not matter. Much of what we

are concerned with at this conference has to do with the distribution or intensity of typical Arctic conditions, as they affect resources, life styles, and influence on less-northem areas. There is no exact limit to these. But in other subject areas, the boundary itself is very important. Clearly this is so in an administrative sense for those northern countries that have defined an Arctic boundary for jurisdictional purposes, within which distinctive policies, programmed or subsidies may apply. The boundary may also bean important natural frontier: - there is a distinct biological and environmental difference between highly productive sub-Arctic ocean waters and typical "Arctic" marine conditions where biological productivity can be exceedingly low; and, on land, the Arctic tree-line marks a boundary between typically distinct and different ecosystems.

Whatever the definitions used for the extent and boundaries of Arctic regions, the natural conditions that make the regions distinctive have a common cause. They are direct consequences of the shape of the Earth and the tilt of its axis with respect to its orbit around the Sun, the electromagnetic dynamics of the spinning planet, and the shape and distribution, on a grand scale, of the continents and ocean basins. The scientific details need not concern us here; but all who are concerned with economic development and resources management in and for the Arctic, with environmental sensitivity and the need for protection, with the rights and socioeconomic future prospects for Arctic cultures and residents and with the role that the Arctic regions play in international relations should be aware of the basic nature and causes of Arctic conditions, and how they affect humans, societies and economies.

When, in what people in the northern hemisphere call summer, the north end of the Earth's axis of rotation tilts towards the Sun, and Arctic regions receive radiation continuously; when the axis is tilted away from the Sun in winter, there are periods, lengthening as one gets nearer to the Pole, when the land and the ocean are continuously in the Earth's own shadow. However, the polar axis is always highly inclined to the Sun, which is always quite low in the sky in polar regions, so that incoming solar radiation hits the Arctic, even in summer, with what might be called a glancing blow. At the same time, the Earth, being a nearly spherical body, radiates its own heat perpendicularly out to space, from the Arctic as from every other part of the planet. This combination of oblique and interrupted incoming solar energy and perpendicular out-going energy results in a net annual loss of heat from polar regions. The net loss is maintained and partly made up by transport of heat northward from the tropics, by ocean currents and atmospheric circulation. Even so, average temperatures in the Arctic are several tens of degrees lower than those of temperate latitudes; and much of the energy is, as it were, secondary energy, coming from warm water and warm air rather than from direct solar radiation. The result is ice on the ocean, prolonged snow cover on the land; these white surfaces reflect back rather than absorb much of the already smaller amount of energy received.

Because of the asymmetrical arrangement of continents and ocean basins, the energy from low latitudes is transported to the Arctic and distributed there not uniformly but in an irregular pattern. Heat is carried from temperate regions into the Arctic mainly by surface currents in the eastern North Atlantic - the Gulf Stream, or North Atlantic Drift; and in the atmosphere by eastward-spiralling three-dimensional air movements that carry comparatively warmer air at upper levels in the atmosphere to counterbalance the irregular southward excursions of cold Arctic air at lower levels, mainly over central North America and Eurasia.

All these phenomena cause profound differences in the character of the Arctic environment from place to place. The ground is treeless and frozen throughout the year near Hudson Bay in Canada at the same latitude that there are prosperous fruit farms and forestry operations in Finland. Rich, commercially productive fishing-grounds are open throughout the year in the Barents Sea south of Svalbard while Prince Gustav Adolf Sea, at the same latitude in the Canadian archipelago, has not been free of ice in historic times, and its perennially dark waters support only a very few specially adapted fish. Because the Arctic temperatures are strongly affected by the routing and efficiency of the transfer of heat from low latitudes, small changes of temperature in the global tropics, which are about five times as large in area as the polar regions, can lead to comparatively large changes in the Arctic environment. These environmental differences, and the processes and relationships that give rise to them, cannot be changed by government policies or development programmed.

Global climate change, which however may be in large part the result of human

actions, will likely have its strongest or most severe manifestations in Arctic regions. Our best models of climate change and its regional effects show, for example, that an increase of average surface temperature for the whole planet of one degree through greenhouse warming would probably result in an increase of four and half to five degrees, on the average, at the Arctic Circle. But that increase would not be evenly distributed across the Arctic or throughout the year. It will likely be greater in continental areas than over the oceans, and result in an amelioration of winter temperatures rather than warmer summers. Truly, the prospects for global change within the next century indicate significant, perhaps severe changes in the Arctic environment. Those concerned with the governance and the future of the Arctic regions should not ignore the fact that our best scientific evidence points out that Arctic regions are likely to change, within the lifetime of our children, considerably more than any changes in the past several millennia and more than other parts of our countries and the world.

All living things in the Arctic have had to evolve or adapt to the conditions of low and interrupted solar radiation, low temperatures which mean that liquid water, essential for life, is often and repeatedly frozen solid as ice or snow, and the chemical reactions may be ten or one hundred times slower than in lower latitudes. I do not need to dwell on these effects, to this audience. The result is Arctic ecosystems adapted to low biological energy, with relatively few species and simple food chains, typically subject to wide periodic swings between abundance and near-extinction, very sensitive to any outside disturbance or change in conditions, but remarkably tough and able to survive and then to prosper when conditions improve. Species may be disperse or migrating, gathering their biological energy from large areas or traveling half way around the world to find that energy at some times of the year. They maybe dependent on a few key localities for critical functions, and if the conditions at that locality were to change, even slightly, the biological success of a huge area maybe affected. The vigour of some ecosystems appears to depend on the health of one or two interacting species in a way that is quite anomalous in other parts of the world, where there is intense competition between many species at each level in the food chain, and if one disappears, there are several others that can take its place. By contrast, in the Arctic seas it maybe that one little cod-like fish of no commercial importance is critical to the whole chain of life, from the small shrimps that live underneath the sea ice to the whales, seals, and polar bears; and on land, an insignificant little moth may strongly influence the competition between tundra mosses, tree-line forests, and the accumulation of peat.

Management of the Arctic

All these biological characteristics of the Arctic "frontier" make it very hard to "manage" from a traditional human point of view. Stable sustained productivity by biological resources is not a characteristic of Arctic ecosystems and can scarcely be imposed just to meet human demands. Territorial boundaries decided by humans mean nothing to the Arctic environment, and management policies based on these can only be disruptive to the resource; and natural ecological boundaries, about which we understand very little as yet, may change rapidly and apparently inexplicably. The abundance of biological life in a locality - what biologists call the standing stock - may be a poor or misleading indicator of biological productivity. When in 1596, Barents, Jon Rijp and Heernskerck discovered Spitzbergen and what is now called Barents Sea, they could scarcely believe the abundance of whales, which they described "as numerous as carps in a pond". The descendants of their commercial sponsors were no doubt equally incredulous to find that scarcely fifty years later, even with the inefficient and hazardous whaling methods of the day the whales were suddenly nearly all gone. Bankruptcies and political repercussions followed. The same mistake, the failure to understand the consequences of the low biological energy of the Arctic, has been made over and over again, with frustrating outcomes for investments and economic development plans, and sometimes, tragic results for northern peoples.

These are some of the environmental and biological realities of the Arctic environment. It is important to be aware that humans and all human activities are subject to the same realities. Like the whales, the scattered plants on the tundra, or the Icelandic raven which as we just heard in the delightful song this morning must live through the dark winter, humans must adjust to very low energy levels and be subject to periodic and sometimes unexpected changes in their prosperity and economy, or else they must import energy

from a distance and thus be "subsidized" from more southerly regions. Our technology, our traditional know-how or new scientific knowledge can enable us and our economies and institutions to operate and survive in the Arctic, and to a degree insulate us from the sudden fluctuations and changes, in somewhat the same way that the marvelous insulating hair coat of a reindeer or caribou enables it to be comfortable at -70° Celsius or that the ability of a cushion-like *Dryas* plant to retain and re-cycle the nitrogen from its dead but not discarded leaves allows it to withstand more than a decade of continuous sub-zero desiccation without dying. But those technologies or natural adaptations operate within strict environmental limits - limits of scale as well as intensity - and they may make the specialized human operation, like the animal or plant, less able to adapt to other changes.

The micro-management of individual species or local ecosystems, and likewise the resource management and life styles of indigenous human societies in small groups that have adapted to the idiosyncrasies of the environment, can be very efficient and successful, if long-term survival and not excess production is the goal. But just as Arctic animals and plants typically experience dramatic diminution of numbers following a short period of "prosperity", so humans cannot expect high productivity of almost any Arctic enterprise to be maintained unless there are continuous subsidies from non-Arctic areas. Such subsidies commonly disrupt and destroy other environmental relationships. From this harsh reality flow both the challenges and the opportunities of modem social and economic development in the Arctic, and for its wise governance. From this reality more than from any other single cause, comes the need for policies attuned to Arctic conditions, for new types of knowledge that utilizes to the full both the understanding of Nature and of human behaviour that comes from centuries of living in the Arctic by indigenous people, as well as the results of the most sophisticated scientific research into the processes of Nature and the development of advanced technologies, and for international arrangements in the circumpolar region that are not simple extensions of world political problems and practices but are suited to the Arctic.

Problems Raised by Arctic Realities

How are these Arctic realities manifest in the issues we have to deal with in the Arctic regions in the 1990's? The essence of the problem before us is that the political institutions, the economic structures and practices, the demands of the market and the expectations of the majority of the world's people, are being superimposed on the Arctic, and they do not fit. Institutions and practices that have evolved and developed in areas where natural biological energy is high disrupt low-energy ecosystems; the application of large amounts of mechanical, chemical or electrical energy causes great dislocation in environmental processes dominated by slow chemical reactions and the energy anomalies of the freeze-thaw cycle; and the expectations of increased biological productivity or stability of "harvest" are incompatible with the workings of ecosystems whose survival depends on small-scale units and dynamic fluctuations between scarcity and abundance.

There are many aspects to this mis-match, and the problems it raises for us today and in the near future. The three background papers touch on many of them. Let me expand a bit on just two, for your reflection as we move on to other discussions in this conference.

The *Arctic economy.* For at least one thousand years, there have been two economies in the Arctic: an indigenous economy, small scale, attuned to local needs and responses, fluctuating with changes in natural conditions, and although with many ups and downs, providing the people within it with a culture and society that by any world standards must be considered successful; and an economy directed from the outside and designed to satisfy the needs, business demands, and political motives of non-Arctic areas. This external economy has been mostly based on exploitation of resources considered valuable by the outsiders - ivory, whale, oil, gold and other metals, petroleum - but not, in the main, resources that were seen as particularly useful to the internal economy. Other aspects of the external economy have been because of Arctic geography - ranging from development of the Northeast and Northwest Passages to under-ice nuclear

submarines to trans-polar commercial aviation -, in which the Arctic environmental conditions have had an important effect on the economy of non-Arctic areas (building icebreakers for example, and military activities) but have had relatively little effect on the economy of Arctic regions themselves.

It is quite remarkable how the two economies have remained separate and largely unconnected for several centuries: - the fur trade of the Hudson's Bay Company, the fur seal industry of Pribilof Island and more recently, Greenland fisheries have been exceptions. Economists in southern regions have tended to pay little attention to the internal economies of the Arctic, on the grounds that they are small, scattered, and not characterized by financial transactions or cash flow. But the internal economy has increasing political importance. All northern countries have taken political steps to support or preserve subsistence use of Arctic resources, and the tenacity with which indigenous people in all circumpolar countries defend their life style and the economy that makes it possible demonstrates its viability and reality. On the other hand, the resource-exploiting activities by which the economies of the world market-place have extended into the Arctic have almost all been short-lived and transient. The exhaustion and destruction of living resources of the Arctic if harvested on a large scale; the high operating costs and specialized technologies for mineral and petroleum developments that are imposed by harsh environmental conditions and which require heavy advance investments; the long distance to market and the increasing costs for protection of the sensitive environments make commercial development of Arctic resources to serve non-Arctic markets less and less profitable or dependable.

Even in the sub-Arctic, where higher biological energy and a larger number of interacting processes enable biological production to be somewhat more stable, the susceptibility of stocks of living resources to dramatic fluctuations between abundance and scarcity continues to cause consternation or surprise among economists, resource planners and investors, as well as hardship for those who depend on the resources. The change in available resources maybe due to natural or human causes, or both; but the vulnerability to large changes is inherent in the low-energy quasi-stable ecosystems. An obvious and serious current example is the situation with regard to sub-Arctic commercial fisheries. Although obviously much can be done to ease the human hardship and to prevent destruction of the resources or damage to its recovery capacity, it is unlikely that the fluctuating character of Arctic ecosystems can be modified significantly. We are learning that successful management requires consideration of the stresses in the whole ecosystem, rather than attempting to isolate the behaviour and protect the stocks of selected species of commercial interest.

Except for a few exceptionally large or rich and well-managed resources, the prospects for further direct sustained major contribution by Arctic regions to the market economies of the South through exploitation of natural resources do not look bright. Arctic resource development is likely to be undertaken in the future more in the context of national policies, and with the aid of subsidies or tax concessions, than as straightforward commercial development in competition with resources in other parts of the world. Or, and this is to be hoped, resource development and management will be designed and undertaken to meet local and regional needs. Dynamically balanced, "marginal" economies in the Arctic can be quite successful and enduring. In these two economies, and the challenges they bring to governments, northern residents and investors, we meet and have to accommodate both homeland and frontier.

In light of the decline or absence of resource-exploiting economic incentives, and with the diminution of military activities in the Arctic, most northern countries have searched assiduously for alternative ways to support both the external and internal economies in the Arctic regions. There is an increasing amount of "services" industry; - transportation, communication, administration; but this tends largely to be supported by, rather than being a contribution to the economic wealth of southern regions. Tourism can be a means of bringing excess wealth from the south and redistributing some of it to the northern economy, although the greater part usually remains with southern operators and organizers. These alternatives appear however to be destined to remain comparatively small in national economic terms. Few northern governments are realistically optimistic about their Arctic areas making a vigorous contribution to the overall national economy.

There is another dimension of the economy-related problems of the Arctic regions that can not be ignored when we

meet in 1993 to discuss the challenges and opportunities of the Arctic regions. We have noted how the Arctic regions are particularly sensitive to climate change, and *how* small changes in the global environment may result in large, perhaps exaggerated changes in the Arctic environment - in weather patterns, precipitation, river flow, permafrost, and sea ice. These changes in turn will affect all biological life in the Arctic, and of course then have influence on the ways of life, the economies, and options for action of all human enterprises and settlements.

Much has been studied and speculated on what might be the effect on the Arctic environment, its living resources and the economies of non-living resources in the event of climatic changes that appear likely in the next fifty years or so. This is not the place to summarize or judge these speculations; but it is a consensus of most serious researchers that a change in climate as rapid as presently seems probable could well result in a net reduction of biological resources or capacity in many parts of the sub-Arctic and Arctic, for at least several decades. Such reduction would profoundly affect indigenous life styles and thwart ambitious plans for, say, expansion of sub-Arctic agriculture and forestry that, at first glance, would appear to be possible if the Arctic climate gets warmer. Eventually, increased biological productivity on land and Sea will be possible in a warmer Arctic; but the experience of Iceland with soil rehabilitation and reforestation shows how long and expensive the road to improvement may be, even when the climate is favorable. Likely diminution of sea ice would, in due course, increase the potential for Arctic Ocean trade and commerce; but the value of that may be more dependent on what the climate change does to the world economy as a whole. As one researcher put it, "At our present state of understanding, it looks as if a rapid increase of greenhouse gases will make the Arctic regions a place where it will be easier to live, but harder to make a living".

Socio-cultural issues. Entwined with the economies of the North, but very much homeland and frontier challenges and opportunities in their own right, are all the questions connected with the overlap, interplay, invasion and defence of life styles, cultural values, behavioral habits and the sheer presence of increasing members of people from different cultures and societies found in all parts of the Arctic today. Professor Jens Dahl had provided an excellent circumpolar summary of indigenous people, their history, their relations with governmental structures, and current problems. The problems are in many ways an expression of the difference between societies and cultures on the one hand that are closely integrated with the natural environment, that respond to its variations by changes in behaviour, and whose personal satisfactions and collective cultural values tend to be not material but based on cognition of the natural systems and on a sense of belonging to them; and on the other hand, cultures immigrant to the North, with values imported from elsewhere, that view humans apart from Nature, whose people feel a need to control Nature and use natural resources for the increase of personal or national wealth, and whose satisfactions tend to be material or found in non-Arctic regions. The recognition of the cultural tensions and problems, both within individuals as well as between distinct societies, engendered by these different value systems has profound implications for the design and success of education in the north, for the rights of people from all cultural backgrounds, and for the stability of Arctic societies of all types.

It is easy to generalize the issues and pressures; but the human problems of the Arctic are very much problems not of peoples but of individuals, of families overwhelmed or tom apart by cultural and economic forces that they have played no part in and over which they have no control; of the widespread disappearance of meaningful occupations. Many persons in the North of indigenous background find themselves without role models that they can admire or emulate and without recognition within their communities; while many from southern backgrounds find themselves consciously or unconsciously unwilling to become identified with the Arctic and cultivate an attitude of "get rich and get out". Alcoholism and suicides tell part of the story. Another, perhaps larger but less well told part is the number of people in the Arctic, from both southern and Arctic cultural backgrounds, whose talents and energies are not fully used and whose future prospects seem mediocre at best. There are many reasons for this. Among them are the historical circumstances that much of the wage employment in the Arctic has been provided by governments, including activities comected with defence, or through commercial industries with government subsidy, all provided through

decisions made distant from the Arctic. It is hard to keep such activities lean and efficient, especially when employment becomes an end in itself. In many parts of the Arctic there is a chronic scarcity of other challenges for energetic persons, or other means of employment.

When one adds to these problems the fact that in most parts of the circumpolar Arctic the population is growing faster than the growth of populations in each northern country as a whole, demographic issues of very sobering magnitude are appearing on the horizon. By almost any standard by which the numbers of people can be compared to the ability of the resources available to them to provide sustenance and support, the sparsely populated Arctic regions are among the most over-populated regions of temperate and northern countries. Failure to recognize this blunt relationship, and to delude ourselves that just because people are relatively few and far between there can be no problem of over-population, is a denial of our responsibility to use the facts at our disposal and a dis-service to the very people we should be trying to serve.

In some parts of the Arctic regions, the characteristics of the Arctic environment itself lead to further distinctively "modem" stresses on Arctic residents. Heavy industrial pollution in the Arctic, such as on the Kola Peninsula and around Norilsk, aPPears to have caused chronic health problems among northern people over surprisingly long distances compared to pollution in less Arctic regions, possibly because of particular biochemical responses to pollutants in plants and animals under Arctic conditions and the short food chains characteristic of the Arctic. Toxic organochlorides from pesticides used in sub-tropical regions are soluble in animal fat and become concentrated in the food animals of the Canadian Arctic, from whence they are passed to humans. Offshore oil development in ice-covered seas, with the best of safeguards will carry a risk of spills and pollution higher than in non-Arctic waters, and the low-energy Arctic ecosystems are anomalously sensitive and vulnerable. It is ironic but distressing that proposals for vigorous development of Arctic transportation corridors, both marine and on land, in nearly every case follow routes that are already biologically the richest, thus concentrating the potential risk for disturbance of Arctic Nature in the very places where it could do the most damage. These are examples of Arctic problems, distinctly affected by the characteristics of the Arctic environment, that involve causes related to the economy and politics of non-Arctic areas, and which present challenges - and opportunities for better policies and remedial or preventative action - to those responsible for the management and governance of the Arctic. They are, without doubt, problems of both homeland and frontier.

The Arctic as an integration of environmental issues, economies and politics

From the beginning of our knowledge of the inclusion of the Arctic world into European civilisation, commerce, politics, and environmental knowledge have been intertwined, and the frontier vs. homeland dichotomy has been present. The first recorded voyage into the Arctic Ocean was made about 875 A.D. by Othere (Ottar) from Halagoland in Norway, who sailed north and east along the European coast "to see how far the land extended, and whether any people lived beyond the wasteland". Othere sailed around the Kola Peninsula and into the White Sea, where he encountered walrus, and people he calls Ter-firms. From the former he developed an ivory trade and from the latter he thereafter annually collected tribute. We know this because in the year 890 Othere made a business trip to King Alfred the Great of England, who wrote down his story. Othere presented Alfred with a gift of walrus ivory and attempted to bargain a portion of the ivory trade, and of the exclusive rights and knowledge to sail past the whirlpools, ice dangers and sea monsters of the Arctic for a concession on trading rights to England. With the arrogance typical the time he reported that no-one lived in the northern lands except poor wanderers who hunted animals, caught fish, and ate birds eggs (but who provided him with furs, falcons and ivory). King Alfred appears to have received Othere courteously; he kept the ivory, but politely refused the bargain. From the earliest times, therefore, questions having to do with Arctic regions have been a mixture of commerce, awareness of Arctic resources and operating conditions, technical know-how, international policies and politics, and a tendency to make decisions from a distance, in the frontier mode of thinking that affect the well-being of those in the homeland. So it has been through the ages, at least until very recently. What about today - and tomorrow?

Did King Alfred show good judgement in declining to become involved, or was he blind to the opportunities of the Arctic? If he had said "yes" to Othere, might the history of the Arctic have been different? Might the Nordic Council of today be different?

One thing is fairly sure; Arctic issues of the future will continue to be an integration of specialized knowledge of Arctic environment and resources, of uncertain economies, of new possibilities due to new technologies, of international politics, of interactions between northern peoples and peoples of the rest of the world. The time is long over-due for the peoples and cultures of northern and non-northern areas to meet as equals. But the realities of the Arctic environment will ensure that practices, expectations, and policies from temperate regions cannot be simply extended to Arctic regions without failure, unpredictable cost, and tragedy. Success in the Arctic is not so much a matter of technology and economy, as it is of philosophy. Perhaps King Alfred realized this.

Meeting the Challenges Today

We have seen that significant activities in Arctic regions have throughout history involved a combination of specialized scientific knowledge, economic interests, dealing with the local interests of northern peoples, and international relations. This combination is even more pertinent today, when advances of technology have drawn even the most remote parts of the world into the daily lives of each of us; when during the recent Cold War the Arctic Ocean became a testing ground for super-power rivalry for reasons that had nothing to do with the Arctic itself; when we have come to realize that legitimate and supposedly innocuous activities in other parts of the world are poisoning the environment and the peoples of the Arctic; when with the growing consciousness of issues of human rights around the world the relatively prosperous and industrially developed northern countries have realized that they each (except Iceland) have within their own territories, unique and vigorous Arctic societies and cultures whose rights have been suppressed or not given expression; and when the hard realities of the Arctic environment have made it clear that, with a few exceptions, commercial exploitation of the natural resources of the Arctic will not contribute significantly to the economic wealth of the world as a whole. The wealth and the contribution of the Arctic *regions* to the world is no less, and in the opinion of many much greater, in the light of these realities; but the contribution is not in the future likely to be in terms of commercial profit, mass markets, or political power. The challenge and the opportunity for those entrusted with the governance of the Arctic is to identify the various elements of that wealth and to nurture that contribution. Key factors in that task will be international co-operation in Arctic science, and in working together, as governments of Arctic terntories, on the protection and management of the environment region and enhancement of the rights and opportunities of its peoples.

I think a start has been made at international co-operation i addressing these new scientific and intergovernmental realities and opportunities. Let me briefly note some developments that have brought us to where we are today.

International Scientific Co-operation

Science has a long tradition of international co-operation in the Arctic. The international Polar Year of 1882-83 was a giant step forward, not only for knowledge of the Arctic regions but for the world-wide organization of careful scientific observation, exchange of data irrespective of national boundaries, and co-operation to study the Earth as a planet and to consider natural phenomena not as separate curiosities but as parts of a dynamic whole. In that endeavour, which is known to all scientists as the IPY, eleven countries sent 14 expeditions simultaneously into the Arctic, distributed around the circumpolar zone, not to search for new lands or set new geographic records - although some did set records - but to make careful simultaneous observations of natural phenomena according to a precise pre-determined plan - of the weather, magnetism, tides, atmospheric electricity, and so on. At the same time, 39 permanent observatories in 25 countries around the world together with several expeditions at sea co-operated with identical synchronized observation to take the first simultaneous "snapshot" of the workings of the planet. (Remember, this was in the days before radio communication. Simultaneous observations were conducted according to accurate chronometers synchronized before the expeditions sailed.) This one enormous Arctic-based adventure transformed world knowledge, and profoundly affected our ideas of the benefits

of international co-operation instead of rivalry and national selfishness in science.

The IPY was followed, 50 years later, by the Second International Polar Year, 1932-33; and twenty-five years later still, by the International Geophysical Year 1957-58 which extended detailed synchronous observations to the entire planet, involving 65 countries and more than 15,000 scientists but still with special emphasis on the polar regions. And now we are embarked on the successor to all these, the International Geosphere-Biosphere Program, or a Study of Global Change. What began a century ago as internationally co-ordinated precise observations of Arctic physical phenomena has developed into the largest, most comprehensive and in many ways the most important endeavour ever attempted collectively by the scientific community. For the Global Change studies are not only investigating the characteristics and processes of planet Earth; - they are looking very carefully into what is happening to the planet, and what may be its future - and our future - as humankind increasingly interferes with its natural workings. In so doing, the Arctic regions, whose scientific challenges and opportunities started the practice of international co-operation in research, continue to play a vital role. I need only mention the global importance of stratospheric ozone depletion in polar regions, the response of the Arctic climate to increase of greenhouse gases, or the Arctic as a repository for persistent and far-travelled industrial pollutants that affect the global environment, to show how true this is. The Arctic regions are important to the world today in ways that far surpass the transitory commercial importance of its ivory, whales, gold, coal, or oil.

Ever since the IPY, scientists have been exploring and organizing ways to combine their efforts internationally to achieve more effective research in the Arctic, which by its nature is difficult, slow and expensive. Because of national political rivalries, strategic and military considerations, and the fact that northern governments are in the main preoccupied with the priorities of the southern more populous parts of their countries, the development of mechanisms for international co-operation in Arctic science has been difficult even though Arctic science has led and spurred the development of ideals and practices of world-wide freedom of science as a whole. This, perhaps, is another aspect of the frontier vs. homeland problem. But in recent years there have been some important and encouraging developments. I will mention two that I think will be of interest to delegates to this conference.

The International Arctic Science Committee (IASC) came into being in 1990, after prolonged negotiation between the authorities of all Arctic countries concerned with support of science and international relations. In many ways it is a successor to the International Polar Commission of 1875, which planned and co-ordinated the IPY. IASC is a non-governmental multi-subject scientific organization whose purpose is to facilitate International co-operation and exchange of information in all kinds of scientific activities in the Arctic regions. Its members are the Academies of Science, Research Councils, or other senior organizations responsible for co-ordination or promotion of science in the Arctic in respective countries. At present, 14 countries belong; they are essentially all the counties undertaking serious scientific study in the Arctic today. A brief list of some of the subject areas presently dealt with by IASC will show the priorities for new Arctic knowledge and research identified by the international science community:

- development of a co-ordinated plan for global change research in Arctic regions;
- identification of areas for co-operation and research in human and social sciences with respect to changing Arctic environments and wildlife resources;
- international co-operation in geophysical mapping and data in the Arctic Ocean basin;
- co-operative studies of Arctic glaciers and hydrology;
- co-operative investigations of the effects on Arctic ecosystems of the depletion of stratospheric ozone;
- etc.;

In addition, IASC is developing programs to ensure that international aid from western countries to Russia benefits Russian Arctic science and the environment of the Russian Arctic. It is also, at the request of the Arctic Environmental Protection Strategy, (to be described in the next talk), undertaking a scientific audit of some elements of the Arctic Monitoring and Assessment Programme.

The Northern Sciences Network of the UNESCO Man and the Biosphere Programme (MAB/NSN). The Man and the Biosphere Programme (MAB) is the principal United Nations scientific activity concerned with the relationship between

human activities and the biological world on which we all depend. More than one hundred countries take part in MAB studies, which focus on the impacts that humans make on natural ecosystems, the recovery of altered or damaged ecosystems, the relationships between human investments and use of natural resources, and human or societal response to environmental stress. All northern countries have MAB Programmed, organized through national MAB Committees. In 1984, an organization was formed within the UNESCO MAB framework, the *Northern Sciences Network* to facilitate co-operation in MAB activities in northern and Arctic areas and to provide a focus for UNESCO activities that relate directly to human or cultural problems in the distinctive northern environment. Some of the issues addressed by the Northern Sciences Network include:

- studies of the complex ecosystems at the Arctic tree-line, their response to climate change, and the possible consequences for humans who live there;
- research on the processes by which selected species of plants on the Arctic tundra adapt to Arctic conditions, and to change in these conditions;
- conflicts of land use between the needs for extensive Arctic grazing lands (as for reindeer or caribou) and industrial, tourist, or administrative development;
- various methods of "range management" in the Arctic;
- the application of Traditional Ecological Knowledge (TEK) possessed by indigenous people, in different parts of the Arctic to management of common property resources, and to the assessment of environmental impact; and the applicability of that knowledge to other areas of the Arctic, or to changing environmental conditions;
- the establishment, management and application of research results from UNESCO Biosphere Reserves in Arctic regions, which are areas set aside and protected for long-term research on natural environmental processes and for exploration and study of methods of human use that are environmentally sustainable.

Through these and other programmed, the Northern Sciences Network is bringing modem science and traditional knowledge to bear on the human problems of the Arctic regions, and is bringing together the constructive aspects of both frontier and homeland.

Co-operation in International Policy Activities

Complementing the developments in increasing international co-operation in scientific activities in Arctic regions and the linking of science and human issues in the Arctic with other activities of the United Nations, there have been in recent years significant developments in international approaches to the development of policies that recognize Arctic realities and give promise of dealing more effectively with changing Arctic conditions. Among these may be mentioned the comprehensive policy recommendations of the **Inuit Circumpolar** Conference, developed in co-operation with the Nordic Sami Council and the Association of Small Peoples of the Russian North. These policy recommendations, which touch on environment, resources, economic development, education, scientific research and political decision-making from the point of view of the people who live in the north and who are directly affected by its policies, add a powerful new dimension to the homeland/frontier issue: - a dimension that, whatever problems it may raise for established administrative concepts and practices, is over-due and must be welcomed on a circumpolar basis. They have already had an effect on world political concepts, as in the 1992 Rio Declaration on Environment and Development, and "Agenda 21" adopted by the United Nations General Assembly. Once again, as with concepts of scientific research a century ago, ideas of international and global importance have come from the Arctic regions.

Another very significant policy-related international development in the Arctic regions, which involves science, the consequences of economic development and its effect in the environment, and inter-governmental co-operation, is the Arctic Environmental Protection Strategy. Professor Sisula will tell us more about this in a few moments.

High in national and international concern at the political and public level, is the continuation of military activities in the Arctic, even though the political situation has changed dramatically. This is an extreme case of the dichotomy between frontier and homeland interests and ways of thinking in the same area and it has implications for the environment (nuclear-powered submarines still cruise under the Arctic sea ice, and even barring accidents, their fuel and radioactive

machinery has to be stored and disposed of), for the enhancement and with management of resources, for local and national economies, and the rights and empowerment of Arctic residents to direct their own future.

These various issues and international developments have led to a new generation of discussions at the intergovernmental level and to proposals for more formalized but still flexible means of addressing the problems in an integrated way, rather than focusing on selected issues or arrangements between agencies with narrow mandates. The Nordic Council itself has, over four decades, shown the way in this direction; and with this conference is bringing its experience and influence to focus on Arctic issues as such. A significant recent development in integrated political response to urgent Arctic issues is the Euro-Arctic Barents Council. Another, visualized with even broader integrated responsibilities, is the proposal for a circumpolar Arctic Council. I suspect that we will spend a good part of tomorrow afternoon talking about these. They are attempts, within our established governmental organizations and decision-making structures, to bring together, almost for the first time at the senior policy level, both homeland and frontier.

Conclusion

The Arctic is a region of varied wealth and great importance to the world. It is a region whose biological capacity has strict limits, and with a harsh though sensitive environment that has small resilience to disturbance. It is also a region subject to quite divergent interests that must be accommodated if human activities are to be sustained, socially and economically. Just as the muskoxen and wolves on the tundra have different interests but must live together and - dare I say it? - respect one another if both are to prosper and the Arctic ecosystem is to be sustained, so must the interests of the Arctic homeland and the interests for which the Arctic is a frontier become interdependent even though quite different, if the region is to prosper.

The challenges that we face in wise governance of the Arctic regions, particularly in this time of economic difficulties, threaten to be daunting. They range from human rights to investment in long-term research and advanced technology, from national security to protection of a sensitive and already troubled environment. They are challenges not only of and for the Arctic, but challenges for the world, for what happens to the Arctic regions can have profound effects on the rest of the world. To address these challenges will require sustained attention to the continued increase of Arctic scientific knowledge, sensitive attention to the traditional knowledge and understanding held by northern peoples, a long-term concern for the environment that civilization has rarely shown elsewhere, and a willingness to re-think and adapt government structures and habits of control to meet quite new situations and conditions. We can see that the former ways of southern interests and governments, of looking at the Arctic regions as a frontier to be exploited, managed from a distance, or overcome, will not work; and that their continued application may be making our problems worse. We can see, also, that the traditional concept of "homeland" for northern peoples does not apply unchanged today, and does not cope well or sufficiently with the pressures of the outside world, with the numbers of people within the Arctic itself, or with the increasing sophistication and restlessness of all Arctic cultures.

The Arctic environment, the Arctic economy, the Arctic peoples themselves, are all changing, and rapidly. But these changes are themselves opportunities for new ideas, new ways of relating to our planet and its environment, new ways of governing ourselves, and new ways of applying and expanding our collective traditional wisdom. In the past, the Arctic regions have repeatedly been the source of ideas and concepts that have influenced the world, for the better. Can the Arctic show leadership again? We have a lot of work to do.

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