AN ENVIRONMENTAL REGIME FOR THE ARCTIC AND THE ANTARCTIC ANALOGY

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The Arctic region, like the Antarctic, is one of the remotest areas on earth. It is mainly composed of an open sea of about 12.2 million square kilometres, and also includes the lands around the Ocean. With the strengthening of global efforts of environmental protection, the significance of the Arctic environment has become more salient as opposed to the past emphasis on national jurisdiction, human population, natural resources development as well as strategic importance. For example, ozone depletion above Antarctica and the Arctic has become a universal concern. Any change in the polar environments is of global impact,¹ and the protection of the Arctic environment is an indispensable part of global protection strategy. For that reason, in 1993 China began to consider a scientific expedition to the Arctic for the purpose of providing a scientific basis for the living environment, also the Chinese, in the 21st century. On 6 May 1995, the first Chinese Arctic expedition reached the North Pole.² While there is little doubt about the need of comprehensive protection of the Arctic, differences exist on the means and approaches, both at governmental and academic levels. The present paper will explore the possible applicability of the existing environmental protection regime for Antarctica to the Arctic region.

1. ARCTIC ENVIRONMENTAL CONCERNS AND EXISTING LEGAL ARRANGEMENTS

1.1. Environmental Concerns

The Arctic region generally comprises the Arctic Ocean, its marginal seas and islands, and part of the land of eight sovereign States – Canada, Denmark (for Greenland), Finland, Iceland, Norway, Russia, Sweden and the United

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¹ See MIKHAIL E. NIKOLAYEV, 'The Arctic in a global community', in L. LYCK & V.I. BOYKO (eds.), *Management, Technology and Human Resources Policy in the Arctic (The North)* (Dordrecht: Kluwer Academic Publishers, 1996) 3-9.

² See LI SHUANKE, 'Towards the North Pole: the first Chinese Arctic scientific expedition', 48 *Science* no. 2 (1996) 29-32 [in Chinese]. See also WEI MENGHUA, 'Thoughts on the North Pole's investigation', *Science and Technology Review* no. 8 (1993) 39-40 (in Chinese).

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States (for Alaska). The Arctic is, however, defined in many ways and with different disciplines using different criteria.³ Some scholars tend to define the Arctic and the sub-Arctic together as including, in North America, the northern part of the Canadian provinces, including all Labrador, and the whole of the Northwest Territories, the Yukon Territory, and the State of Alaska; in Eurasia, the territory north of about latitude 65°N in Scandinavia, with the boundary dropping to 63° in European USSR (now Russia) and 57° in Asia, and including all Kamchatka; the whole of Greenland, Svalbard, and Iceland; and at sea, the Arctic Ocean, with the Barents Sea, the Norwegian Sea (including the Greenland Sea), Denmark Strait and the Labrador Sea on the Atlantic side, and the Bering Sea, the Sea of Okhotsk and the Gulf of Alaska on the Pacific side.⁴

The Arctic referred to in the present paper is the area centred on the Arctic Ocean with a boundary line roughly at 60° north latitude for the convenience of comparison with the Antarctic region which has been defined by the Antarctic Treaty as at 60° south latitude, with some exceptions for management purposes.⁵

The Arctic is essentially a basin, the centre of which is occupied by a large mediterranean sea, and which is divided into two main basins by the submarine Lomonosov Ridge which runs from the north coast of Greenland across the Pole to the New Siberian Islands. Each basin has depths of over 4,000 metres.⁶ The continental shelf which borders the land masses is narrow on the North American side (20-50 nautical miles) but on the Eurasian side it extends to 450 miles and more, and is usually under 100 metres in depth. Peninsulas and island groups divide this wide shelf into four marginal seas: the Chukchi, East

³ As BERNARD STONEHOUSE depicts: "Geographers often use the polar circles, for they provide two regions exactly equivalent in size and shape, which are useful for comparisons. Lawyers and politicians sometimes prefer other parallels of latitude, closer to or farther from the poles. Biologists look for ecological limits, for example the boundary between tundra and forest, to define polar ecological zones. Oceanographers use boundaries between water masses, and the northern and southern limits of pack ice, to create maritime polar regions. Climatologists use isotherms (lines joining points of equal mean temperatures) to define polar climatic regions." See his book *North Pole South Pole: A Guide to the Ecology and Resources of the Arctic and Antarctic* (Toronto & Montreal: McGraw-Hill Ryerson, 1990) at 13. For the purpose of legislation, e.g. the U.S. Arctic Research and Policy Act of 1984 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, and Kuskokwim Rivers; all contiguous seas, including the Arctic Ocean, and the Beaufort, Bering, and Chukchi Seas; and the Aleutian chain". See J.H. ZUMBERGE, 'Introduction', 29 *Oceanus* no. 1 (1986) at 4. This definition, if followed rigorously, would exclude the southern part of Greenland and a large part of Siberia.

⁴ TERENCE ARMSTRONG, GEORGE ROGERS & GRAHAM ROWLEY, *The Circumpolar North: A Political and Economic Geography of the Arctic and Sub-Arctic* (London: Methuen & Co., 1978) 1-2.

⁵ This definition has been already concurred by OSHERENKO and YOUNG as they consider all the lands and seas lying to the north of 60° north latitude to be Arctic. See GAIL OSHERENKO and ORAN R. YOUNG, *The Age of the Arctic: Hot Conflicts and Cold Realities* (Cambridge University Press, 1989) at 11.

⁶ MOIRA DUNBAR, 'The Arctic setting', in R.ST.J. MACDONALD (ed.), *The Arctic Frontier* (University of Toronto Press, 1966) at 11.

Siberian, Laptev, and Kara seas. A fifth sea, the Barents, with rather deeper waters, leads out of the Arctic Ocean into the Norwegian Sea.⁷ The main body of the Arctic Sea is covered the year round with pack ice. The greatest number of icebergs in the north is found in Baffin Bay.⁸ On the land there are glaciers in all mountain areas. Ice covers about 2.3 million sq km in the northern regions. Over four-fifths of this area of ice is located in Greenland.⁹ Throughout most of the Arctic and sub-Arctic all or part of the ground contains a layer which is perennially frozen and which is called permafrost.¹⁰

In contrast to Antarctica, the climate in the Arctic is moderate because it is a maritime area. The moderating maritime influence on temperature is quite noticeable in spite of the ice that covers the water surface for much or all of the year.¹¹ The mean annual temperature in the North Pole has been estimated to be -23°C and that in Central Greenland is -33°C . Total precipitation in the Arctic is low and ranges from about 15 to less than 5 inches per year.¹² The humidity of the air is also low, because the capacity of cold air to hold water vapour is low.

A characteristic feature of the northern flora and fauna is that the number of species is relatively small while the number of individuals in a species is relatively large. This results in instability in the ecosystem, since the number of inter-relationships is limited and the dependence of any single element on the others is considerable.¹³ As to the flora, there are grasses, sedges, lichens and dwarf willows in the tundra; and conifers, birches and aspens in the taiga or boreal forest. All this is the basis for a considerable animal life. Land animals which remain the year round in the high Arctic include polar bear, muskox, Arctic fox, lemming, snowy owl, raven and ptarmigan. There are others in the forest such as reindeer (called caribou in North America), elk (called moose in North America), bear and many small fur-bearers. Of the birds, which are numerous in the northlands in summer, most migrate to the south in winter – the Arctic tern going as far as Antarctica, a round trip of 30,000km.¹⁴ The productivity of the Arctic waters is rather low and fish fauna is poor both in species and in numbers. Seal and walrus, and polar bear are found throughout the area in varying numbers.¹⁵ In regions where the floating ice gives way to open water, and warmer Atlantic or Pacific waters mix with those of the Arctic, biological productivity is, however, at a high level. Large populations of

⁷ DUNBAR, *ibid.*, at 11.

⁸ ARMSTRONG et al., *supra* n. 4 at 13.

⁹ *Ibid.*

¹⁰ DUNBAR, *supra* n. 6 at 10.

¹¹ *Ibid.*, at 13.

¹² *Ibid.*, at 15.

¹³ ARMSTRONG et al., *supra* n. 4 at 18.

¹⁴ *Ibid.*, at 18.

¹⁵ DUNBAR, *supra* n. 6 at 11.

cod, halibut, salmon, char, shrimp and crab are found. Sea mammals are relatively abundant.¹⁶

In view of the above, the Arctic environment is extremely sensitive to environmental stress. Recovery from ecological damage occurs slowly, especially due to the following four features: low temperatures, fluctuating seasonal light (short summer 'growing' periods and long winter 'rest' periods), short food chain and variable abundance of Arctic fauna and flora.¹⁷ Arctic ecosystems are vulnerable to disturbance by humans. Permafrost may melt and lead to extensive erosion if vegetative cover is disturbed. The effects of air pollution are magnified in ecological impact by thermal inversions in the winter and by the inherent sensitivity of lichens to sulfur dioxide. Oil pollution is accentuated by concentration under and between the ice cover and by slow degradation and greater toxicity at low temperature.

It is argued that there are three real threats to the Arctic environment: poor knowledge of ecosystemic effects, technological poverty and political inability to regulate adequately the growth of economic activity in the region.¹⁸ The main and more direct threat to the Arctic environment should, however, be the pollution resulting from human activities within and/or outside the Arctic region. The sources and causes of this pollution are complex; much pollution originates in lower latitudes and is carried by wind and ocean currents to higher latitudes. The pollution effects take the form of Arctic haze, stratospheric ozone depletion and the accumulation of toxic substances, including radioactivity, in Arctic terrestrial, marine, and aquatic environments. The Arctic region is also expected to be affected by the atmospheric consequences of global warming.¹⁹ The most serious accident of oil spill ever around the Arctic area is the *Exxon Valdez* accident on 24 March 1989.²⁰

1.2. Existing legal arrangements

The main characteristic of the Arctic legal regime is the element of bilateral or regional arrangements and domestic legislation, with only a few multilateral treaties. Strictly speaking, the only international agreement which directly

¹⁶ ARMSTRONG et al., *supra* n. 4 at 18.

¹⁷ DAVID VAN DER ZWAAG, KEYUAN ZOU and CYNTHIA LAMSON, 'The Polar areas', in EDGAR GOLD (ed.), *Maritime Affairs: A World Handbook* (Longman, 2nd ed. 1991) at 304.

¹⁸ See OLAV SCHRAM STOKKE, 'Environmental threats in the Arctic', in LASSI HEININEN (ed.), *Arctic Environmental Problems* (Finland: Tampere Peace Research Institute, 1990) 23-25.

¹⁹ Canadian Institute of International Affairs (CIIA), National Capital Branch, *The Arctic Environment and Canada's International Relations* (Ottawa: Canadian Arctic Resources Committee, 1991) at 7.

²⁰ See US Congress, Office of Technology Assessment, *Polar Prospects: A Minerals Treaty for Antarctica* (US Government Printing Office, September 1989) at 140. For reference, see A. NELSON-SMITH, 'Biological consequences of oil-spill in Arctic waters', in LOUIS REY (ed.), *The Arctic Ocean: The Hydrographic Environment and the Fate of Pollutants* (London: MacMillan Press, 1982) 275-293.

addresses Arctic environmental protection and conservation is the 1973 Polar Bear Convention between the so-called Arctic states: Canada, Denmark, Norway, the United States and the Soviet Union. It restricts harvesting of polar bears (with an exception for traditional harvesting) and calls on states to

“take appropriate action to protect the ecosystems of which polar bears are a part, with special attention to habitat components such as denning and feeding sites and migration patterns, and shall manage polar bear populations in accordance with sound conservation practices based on the best available scientific data”.²¹

Research is to be coordinated and the results shared, and the parties shall consult “on the management of migrating polar bear populations”. Furthermore, the Arctic countries acknowledged for the first time that the environment of the polar sea constitutes a region and that these and other conservation efforts are to be pursued in the circumpolar context.

Among other treaties which apply to the areas around the Arctic was the Convention on the Preservation and Protection of Fur Seals which was concluded by four countries – Great Britain (for Canada), Japan, Russia and the United States – on 7 July 1911 and which was the first multilateral fur seal treaty.²² It applied to the North Pacific including the Bering Sea, and was significant in terms of environmental protection and conservation in the Arctic.²³ In 1957 the treaty was replaced by a new one among the same parties,²⁴ which lapsed in October 1984 because the United States did not approve a new four-year extension.²⁵ Another could be the 1973 Convention on Fishing and Conservation of Living Resources in the Baltic Sea and the Belts.

On the other hand, there are quite a number of bilateral agreements between respective Arctic countries. In 1971, Canada and the former Soviet Union signed the General Exchanges Agreement which contains specific provisions relating to the Arctic.²⁶ On 16 April 1984 the Agreement was augmented by the signing of the Protocol of Canadian-Soviet Consultations on the Development of a Programme of Scientific and Technical Cooperation in the Arctic and the North.²⁷ On 20 April 1988 the Protocol on Problems of Monitoring and Environmental Protection was signed. The two countries agreed to focus joint efforts on a number of scientific and technical areas, including comprehensive monitoring of pollution of the environment and its

²¹ Polar Bear Convention, Oslo, 15 November 1973, CTS No. 24 (1973). Also reprinted in (US) *Treaties and Other International Acts Series* 8409.

²² Text reproduced in 5 AJIL (1911) 267-274.

²³ Under the US definition the Arctic includes the Bering Sea.

²⁴ Interim Convention on Conservation of North Pacific Fur Seals, 9 February 1957, 314 *United Nations Treaty Series* 105.

²⁵ ERIK FRANCKX, ‘Environmental protection: an Arctic-Antarctic comparison’, in J. VERHOEVEN, P. SANDS and M. BRUCE (eds.), *The Antarctic Environment and International Law* (Graham & Trotman, 1992) at 114.

²⁶ CIIA, *supra* n. 19 at 51.

²⁷ *Ibid.*, at 52.

ecological consequences; modelling of environmental processes and of the processes and impacts of atmospheric pollutants; and relations between human health and atmospheric pollution.²⁸ In November 1989, Canada and the Soviet Union signed a General Agreement on Arctic Cooperation²⁹ which spelled out the areas of cooperation, the forms such cooperation might take, the modes of implementation and the functions of the mixed commission established under the Agreement. Also in 1989, an Environmental Cooperation Agreement was concluded, a framework agreement providing for cooperation on a wide range of environmental issues. The Agreement for the first time raised the commitment to cooperate in environmental matters to the level of an internationally binding agreement.³⁰

In the US-Canadian relationship, there has been an Agreement since 1974 on a joint Marine Contingency Plan for Spills of Oil and other Noxious Substances.³¹ In 1977 an annex was added to it, dealing with "waters off the Arctic coast of Canada and the United States in the Beaufort Sea".³² The Agreement on Arctic Cooperation, signed on 11 January 1988 relates primarily to navigation by ice-breakers of the two countries in their respective Arctic waters.³³ In addition, Canada and the United States have established joint working groups which meet annually to discuss arctic science, ice studies and hydrocarbon development in the Beaufort Sea.³⁴ They also signed the Agreement on the Conservation of the Porcupine Caribou Herd on 17 July 1987.³⁵

As to the cooperation in the Arctic between the United States and the Soviet Union/Russia, an Agreement was concluded on 23 May 1972 on Cooperation in the Field of Environmental Protection. This is a comprehensive Agreement covering some eleven specific areas of cooperation, including "Arctic and subarctic ecological systems", and providing for its implementation by a joint committee.

The Scandinavian countries such as Norway and Finland may be leading the way with their cooperative effort in assisting former Soviet industry to reduce emissions of toxic chemicals into the Arctic atmosphere. In September 1990, the former Soviet government reached an agreement with the governments of Finland and Norway to rebuild the smelters with Finnish and Norwegian technology.³⁶

²⁸ Ibid.

²⁹ Agreement between the Government of Canada and the Government of the USSR on Cooperation in the Arctic and the North, 20 November 20 1989, CTS No. 21 (1989).

³⁰ CIIA, *supra* n. 19 at 52-53. For details on the cooperation in the Arctic by the two countries, see *Building International Relations in the Arctic: 25 Years of Canada-USSR Cooperation* (Ottawa: Indian and Northern Affairs Canada, 1991).

³¹ Ottawa, 19 June 1974, CTS No. 22 (1974).

³² Ottawa, 30 August 1977, CTS No. 25 (1977).

³³ Agreement between the Government of the United States and the Government of Canada on Arctic Cooperation, Ottawa, 11 January 1988, 28 ILM (1987) 141.

³⁴ CIIA, *supra* n. 19 at 54.

³⁵ Text reproduced in the *Third Annual Report of the Porcupine Caribou Management Board*.

³⁶ Ibid., at 54.

In addition, environmental cooperation has occurred between other Arctic countries. For example, Canada and Denmark signed a Marine Environmental Protection Agreement on 16 August 1983 which is aimed to protect common waters and the economic and social welfare of their inhabitants from oil pollution risks. The Agreement covers the waters between West Greenland and Canada (Baffin Bay, Davis Strait, Nares Strait) and provides response mechanisms for the control of pollution.³⁷

Domestic legislation has a particular influence on the development of the legal regime for Arctic environmental protection. Just a few significant ones will be mentioned here. In *Canada*, the Arctic Waters Pollution Prevention Act, enacted in 1970, concerns the prevention of pollution in "areas of the Arctic waters and adjacent to the mainland and islands of the Canadian Arctic up to 100 miles (i.e. 160 km)". The dumping of waste into Arctic waters from ships is prohibited. Safety control zones are also established to prevent shipping accidents and to expedite the clean-up of oil spills should they occur.³⁸ In the former *Soviet Union*, the Presidium of the Supreme Soviet of the USSR issued a decree on 26 December 1984 to improve the protection of nature in the regions of the Far North and in the sea areas adjacent to the northern coastline of the USSR.³⁹ In the *United States*, a major legal document specifically relating to the Arctic is the Arctic Research and Policy Act of 1984. The main purposes of this Act are:

- (1) to establish national policy, priorities, goals and to provide a Federal program plan for basic and applied scientific research with respect to the Arctic, including natural resources and materials, physical, biological and health sciences, and social and behavioral sciences;
- (2) to establish an Arctic Research Commission to promote Arctic research and to recommend Arctic research policy;
- (3) to designate the Natural Science Foundation as the lead agency responsible for implementing Arctic research policy; and
- (4) to establish an Inter-agency Arctic Research Policy Committee to develop a national Arctic research policy and five year plan to implement that policy.⁴⁰

³⁷ 23 ILM (1984) 269-274.

³⁸ *Revised Statutes Canada* (1970), c. 2 (1st Supp.). For comments on and analysis of this Act, see R. BILDER, 'The Canadian Arctic Waters Pollution Prevention Act: new stresses on the law of the sea', 69 *Michigan Law Review* (1970) 1; L. HENKIN, 'Arctic anti-pollution: does Canada make – or break – international law?' 65 *AJIL* (1970) 131; A. UTTON, 'The Arctic Waters Pollution Prevention Act, and the right of self-protection', 7 *UBC Law Review* (1972) 221; J. SHERRIN, 'International law and Canadian Arctic Pollution Control', 38 *Albany Law Review* (1974) 921; P. NEWBURY, 'The international environmental law of the sea: the Canadian Arctic Waters Pollution Prevention Act and its effects, 1970-1980', 4 *Suffolk Transnational Law Journal* (1980) 138-61.

³⁹ The Decree is reprinted in LAWSON W. BRIGHAM (ed.), *The Soviet Maritime Arctic* (Annapolis: Naval Institute Press, 1991) 311-316.

⁴⁰ *Public Law* 98-373, 31 July 1984. Reproduced in M.A. STENBAEK (ed.), *Arctic Policy* (Centre for Northern Studies and Research, McGill University, 1987) A-12 to A-18.

We have to realize that in the Arctic, effective international cooperation in regard to environmental protection is seldom easy to achieve. Unlike Antarctica where a complex of cooperative arrangements in the realm of science emerged during the course of the International Geophysical Year of 1957-58, the Arctic has during the 20th century been plagued by a variety of expansive and often conflicting jurisdictional claims. This is the main obstacle to the establishment of an environmental regime in the Arctic. With the Cold War gone by, the military threat in the Arctic has been greatly reduced but the contradiction between economic development and environmental protection is salient. The inadequacy of a mixed strategy combining economic growth and environmental protection is nowhere more evident than in the Arctic. This is another obstacle. Finally, unlike the Antarctic Treaty System, the Arctic region lacks an international regime and leaves the task of protection to a larger extent to the surrounding national states. Without proper coordination and effective cooperation among all the Arctic states, there is little hope for protection of the Arctic.

2. TOWARDS COMPREHENSIVE PROTECTION

In the Arctic no single international legal regime has ever existed, and the state of the art of national environmental protection differs widely. With the worsening of the polar environment and the strengthening of efforts towards global protection, a comprehensive regime is necessary. Two severe marine oil pollution accidents that took place in the early half of 1989 influenced the evolution and development of polar environmental policies and promoted environmental measures: one was the *Bahia Paraiso*, which occurred in the Antarctic area, and the other was the *Exxon Valdez* disaster off Alaska near the North Pole. Furthermore, some initiatives took place in the past years. Continuation of these initiatives could finally lead to the establishment of a regime for environmental protection in the Arctic.

2.1. The Murmansk initiative

In the context of the increasing openness of the Soviet Union with respect to Arctic research and environmental protection, on 1 October 1987 the then Soviet leader MIKHAIL GORBACHEV delivered a remarkable speech in Murmansk, calling for cooperation among all interested States and a zone of peace throughout the Arctic. He emphasized the importance of the cooperation of the northern countries in environmental protection. He proposed to jointly draw up an integrated comprehensive plan for protecting the natural environment of the north. He stated that:

“We attach special importance to the cooperation of the northern countries in environmental protection. The urgency of this is obvious. It would be well to

extend joint measures for protection of the marine environment of the Baltic, now being carried out by a commission of seven maritime States, to the entire oceanic and sea surface of the globe's North.

The Soviet Union proposes drawing up jointly an integrated comprehensive plan for protecting the natural environment of the North. The North European countries could set an example to others by reaching an agreement on establishing a system to monitor the state of the natural environment and radiation safety in the region. We must hurry to protect the nature of the tundra, forest tundra(taiga), and northern forest areas."⁴¹

Substantial progress has been made since GORBACHEV's address. For example, the circumpolar conference on Arctic scientific research proposed in the address was held in Leningrad in December 1988. Earlier that year, in March, all eight Arctic states had agreed to form an International Arctic Science Committee (IASC), and, in August 1990, they signed the Founding Articles establishing the IASC.⁴²

The IASC is a non-governmental international scientific organization, and a counterpart of the Scientific Committee on Antarctic Research. It is to encourage and facilitate international consultation and cooperation in all fields of scientific research concerned with the Arctic. It is governed by a council comprising representatives of national scientific organizations in Canada, Denmark, Finland, France, Germany, Iceland, Japan, the Netherlands, Norway, Poland, Sweden, the United Kingdom, the United States, and the USSR/Russia.⁴³ The main substantive work of the IASC will be undertaken by international scientific working groups. Although the IASC does not directly address international cooperation on environmental protection in the Arctic, its establishment and function has no doubt considerable influence over the future comprehensive regime.

⁴¹ MIKHAIL GORBACHEV, address in Murmansk, 1 October 1987. See Foreign Broadcast Information Service (FBIS)-Sov-87-191, 2 October 1987. For comments on the initiative, see EVGENIA ISSRAELIAN, 'Gorbachev's Murmansk initiative', in F. GRIFFITHS (ed.), *Arctic Alternatives: Civility or Militarism in the Circumpolar North* (Toronto: Samuel Stevens, 1992) 269-277; and T.E. ARMSTRONG, 'Soviet proposals for the Arctic: a policy declaration by Mr Gorbachev', 24 *Polar Record* no. 148 (1988) 68-69.

⁴² The US Arctic Commission, established under the Arctic Research and Policy Act of 1984, in its report to the President and the Congress of the United States called for the creation of an International Arctic Science Committee in 1988. VLADIMIR GOLITSYN, 'The Arctic - on the way to regional cooperation', 1 *Marine Policy Reports* (1989) at 97.

⁴³ The Founding Articles are reprinted in 4 *Arctic Research of the United States* (1990) 67-69. For details on its establishment, see 'The International Arctic Science Committee: from conception to birth', *ibid.*, 65-66.

2.2. The Finnish initiative

At the end of 1988, the Finnish government contacted the other governments of the 'Arctic Eight' to garner support for a framework treaty on the Arctic environment which could later have more specific protocols attached to it. On 12 January 1989 the Finnish government sent a proposal to the seven other Arctic countries. It analyzed some relevant factors and took into account the fact that the equally fragile Antarctic environment has been taken care of fairly effectively through the Antarctic Treaty System.⁴⁴ The proposal was divided into two parts and the second part was a working paper which discussed both the substance of the proposal and certain details.

The working paper started from the fact that the ecosystem of the Arctic is very fragile. Due to the extreme climatic and ecological conditions, the flora and the micro-organisms in this area can only very slowly be renewed or, after disturbances of the Arctic equilibrium, revived. The most important threats to the Arctic environment, as the working paper identified, are climate change, pollution of the marine environment, and exploitation of the living and non-renewable resources. The development of the living resources in the Arctic should be based on the principles of the World Conservation Strategy.⁴⁵

It was further stated in the working paper that effective protection of the Arctic requires development of three things: intergovernmental cooperation, scientific research and monitoring of the ecosystems. Since there exists no comprehensive regime concerning the conduct of human activities having an adverse impact on the Arctic environment or its resources, the Government of Finland deemed it necessary to initiate an intergovernmental process with a view to elaborating coordinated and concerted action for the protection of the Arctic environment, which could lead to a declaration, convention or other multilateral arrangement. It was proposed that such action should be taken by the eight countries that possess sea and land areas north of the Arctic Circle.⁴⁶ As a result, governmental representatives of the Eight attended a Consultative Meeting on the Protection of the Arctic Environment in Rovaniemi, Finland, in September 1989, the first such intergovernmental gathering of the Arctic states.

2.3. Further developments

Begun with the Finnish Initiative, the process has moved with several consultative meetings among the Arctic states. On 14 June 1991, at the First Ministers Conference on the Protection of the Arctic Environment, also held in

⁴⁴ ESKO RAJAKOSKI, 'Multilateral cooperation to protect the Arctic environment: The Finnish Initiative', in *The Arctic: Choices for Peace and Security — Proceedings of a Public Inquiry* (West Vancouver: Gordon Soules Book Publishers, 1989) at 56.

⁴⁵ *Ibid.*, 56-57.

⁴⁶ *Ibid.*, 57-58.

Rovaniemi, governmental representatives from Canada, Denmark, Finland, Iceland, Norway, Sweden, the Soviet Union and the United States issued a Declaration on the Protection of the Arctic Environment. They also adopted an Arctic Environmental Protection Strategy to begin to better address six key environmental problems – persistent organic contaminants, oil pollution, heavy metals, noise, radioactivity and acidification. The Strategy, though a non-binding political declaration, commits the Parties to implementing a four-point action program:

- an Arctic monitoring and assessment program (AMAP) to monitor the effects of anthropogenic pollutants in the region through the establishment of an organization task force;
- protection of the Arctic marine environment, using preventive and other measures, applied directly or through international organizations with regard to origin;
- establishment of a regional emergency prevention, preparedness and response capability; and
- coordination of research and facilitation of data exchange on conservation of Arctic flora and fauna.⁴⁷

The adoption of the Strategy marks a cornerstone towards comprehensive protection of the Arctic environment among the Arctic States. Since then, some more daunting proposals have been advocated. A significant one among them is the proposal to establish an International Arctic Council initiated by Canada.⁴⁸ According to this proposal, an Arctic Council must ensure the peace and security of the Arctic, help save the Arctic environment from the contamination that comes with disrespectful industrial development in the Arctic and elsewhere, and help secure justice for the region's aboriginal peoples.⁴⁹

At the non-governmental level, it is remarkable that the native peoples in the Arctic have increasingly been playing an important role in the protection of the Arctic environment. This is illustrated by the Inuit Circumpolar Conference (ICC) which groups the Inuit population from Alaska, Canada and Greenland. This is important because it is the first time that a transnational private organization, which has no connection with the respective governments of the different countries, is trying to formulate rules for the exploitation of Arctic resources. They start from the principles that the Arctic environment is theirs, that it has been the base of their lives for centuries, and that there is no reason

⁴⁷ The Declaration on the Protection of the Arctic Environment and the Arctic Environmental Protection Strategy are reprinted in *5 Arctic Research of the United States* (1991) 29-35; and 30 ILM (1991) 1624-1669.

⁴⁸ The idea of an Arctic Council is said to have been first proposed by the Canadian Prime Minister MULRONEY during a speech in Russia in November 1989. JOHN HANNIGAN, *The Proposal for an Arctic Council: What Position Should the Government of the Northwest Territories Take?*, Circumpolar and Scientific Affairs Publication Series 92-11 (Indian and Northern Affairs Canada, February 1992) at iv.

⁴⁹ For details, see Arctic Council Panel, *To Establish an International Arctic Council: A Framework Report* (Ottawa: Canadian Arctic Resources Committee, May 1991).

for outside foreign powers to interfere with this.⁵⁰ The Inuit Circumpolar Conference developed a Comprehensive Arctic Policy and an Inuit Regional Conservation Strategy. As early as 1985, it was attempting to define policies and standards which would provide and promote conservation and sustainable development in the Arctic. The Inuit Conservation Strategy takes its inspiration from the World Conservation Strategy and ensures that the responsibility for the implementation of conservation measures will remain in the hands of those who are directly affected by its management.⁵¹ In 1991, the ICC, the Nordic Sami Council and the Association of Small Peoples of the Soviet Union organized an Arctic Leaders Summit in Copenhagen, bringing together aboriginal and non-aboriginal leaders from circumpolar nations for discussions on international issues effecting Arctic aboriginal peoples.⁵² Bilaterally, Canadian Inuvialuit and Alaskan Inupiat in 1988 finalized a polar bear management agreement providing for the establishment of two groups, a Joint Commission and a Technical Advisory Committee.⁵³ This growing awareness among the native peoples in the Arctic has introduced a new dimension into the Arctic environmental policies and law.

In a nutshell, the basic features of legal regimes governing comprehensive protection of the Arctic are taking discernible form. At present, however, they still lack the definition, consistency and sophistication of a mature system able to cope effectively with the complex problems arising out of the interaction of politics and the environment in a community of national sovereign states.

3. THE ANTARCTIC ANALOGY AND THE ARCTIC

Strict environmental regulations may render polar activities more expensive, but environmental concerns are also stimulating new interest in the poles. As to their similarities, both poles contain a valuable record of how the earth has responded to past climate changes, and both will provide clues about how it can be expected to change in the future.

⁵⁰ LOUIS REY, 'Resource development in the Arctic regions: environmental and legal issues', in D.G. DALLMEYER & L. DEVORSEY (eds.), *Rights to Oceanic Resources* (Martinus Nijhoff, 1989) at 174.

⁵¹ See PETER JULL, *Politics, Development and Conservation in the International North* (Ottawa: Canadian Arctic Resources Committee, 1986) 67-68.

⁵² VAN DER ZWAAG et al., *supra* n. 17 at 309.

⁵³ C.D. HUNT, 'Legal aspects of implementing sustainable development in Canada's northern territories', in J.O. SAUNDERS (ed.), *The Legal Challenge of Sustainable Development* (Calgary: Canadian Institute of Resources Law, 1990) 285-286.

3.1. Significance of the analogy

In terms of legal arrangements, the two polar legal regimes would have the following characteristics: (a) in both regions, sovereignty is in dispute, although the problem is somewhat different with respect to Antarctica and to the Arctic. This makes it mandatory for each regime to provide for internal accommodation of the interests involved; (b) both regimes are based on the desire to uphold and foster cooperation concerning demilitarization, scientific research, protection of the environment, and economic uses; (c) in both regimes the institutional structures which provide for the channelling of the cooperation exhibit certain peculiarities and even similarities; and (d) both regimes rely on and presuppose the collaboration of certain states which form the 'inner circle' of institutionalized cooperation.⁵⁴

On the other hand, the differences between the north and south poles are explicit at least in terms of their respective geographical structures. In the legal and political perspective, the following has been pointed out by ORAN YOUNG: (a) unlike the circumstances prevailing in the Antarctic, extensive North/South interactions between southern metropolis and Arctic hinterlands have long been the norm in the Far North; (b) the Antarctic region was not an arena for the deployment and operation of major military systems, whereas the Arctic was an area of growing strategic significance to both superpowers and an area for the regular deployment of critical weapons systems; (c) no industrial or commercial activities were taking place in Antarctica, while the Arctic is the scene of world-class industrial operations; (d) despite dramatic evidence concerning the occurrence of a seasonal ozone hole over Antarctica, the environmental impacts of the activities of advanced industrial societies located in the mid-latitudes are even more profound in the north polar region than in the south polar region; (e) Antarctica does not constitute an ancestral homeland for sizeable groups of indigenous peoples.⁵⁵

The above common and different characteristics of the two poles render a comparison significantly meaningful. Besides, the peculiar natural environment of polar regions is of global significance; any change in it would result in unpredictable effects upon the climate or environment in other regions of the earth. So, the protection of the polar regions is a mirror for the protection of the global environment, and the polar regions are the testing ground for global protection. If we could not protect the polar regions well, we would have no hope for our common future. The current state of human progress has raised high expectations concerning environmental protection in a global context. The Rio Declaration, which was adopted in June 1992, provides that states shall cooperate in a spirit of global partnership to conserve, protect, and restore the

⁵⁴ R. WOLFRUM, 'The Polar regions: legal aspects', in L. CAFLISCH and F. TANNER (eds.), *The Polar Regions and Their Strategic Significance* (Geneva: Graduate Institute of International Studies, 1989) 3-4.

⁵⁵ ORAN R. YOUNG, *The Arctic in World Affairs* (Seattle: University of Washington, 1989) 12-15.

health and integrity of the earth's ecosystem. With increasing global environmental protection, comprehensive protection of polar regions becomes more and more important and a critical link in the chain of global environmental protection.

In the political and legal domain, the success of the Antarctic Treaty in its two major purposes – keeping the peace and providing a mechanism for close scientific cooperation – has led many to wonder if something of the kind could ever be worked out for the Arctic.⁵⁶ While it could be very desirable to obtain a measure of international agreement to govern the Arctic, the differences between the Arctic and the Antarctic pose considerable difficulties in the way ahead. Some even flatly denied the idea as such by saying that

“simplistic comparisons between the Arctic and the Antarctic do more to confuse the prospects for international cooperation in the Arctic region than to shed light on this matter. The mere fact that interested parties have had considerable success in establishing cooperative arrangements for one polar region does not entitle us to conclude that the other polar region is ripe for progress in these terms.”⁵⁷

Nevertheless, environmental protection in both polar regions is closely related with global environmental protection, even though a “brief consideration of the Antarctic experience”⁵⁸ is far from enough to reach a correct and objective conclusion. It would, however, be equally simplistic to dismiss the potential applicability of the Antarctic experience to the Arctic, especially in the current situation where global issues are so interdependent and relevant regimes interact. More and more people with breadth of vision have realized the importance of the Antarctic experience for Arctic affairs. Even Canada, which is the most conservative country among all Arctic States and has a passive attitude towards the Antarctic, has admitted the importance and significance of the Antarctic experience.⁵⁹ The Antarctic Treaty, as regarded by the Canadians, is one of the world's most successful examples of an internationally accepted, flexible conflict resolution mechanism, in which a common search for shared scientific knowledge, protection of the environment, and the sustained management of common resources take precedence over individual national goals. For this reason, some Canadians have advocated that there should be an Antarctic-type treaty in the Arctic, with reasonable and shared access for everyone in a peace-

⁵⁶ Various references can be made to STONEHOUSE, *supra* n. 3, at 205-206; ARMSTRONG et al., *supra* n. 4, at 277; FRED ROOTS, ‘Cooperation in Arctic science: background and requirements’, in GRIFFITHS (ed.), *supra* n. 41 at 152.

⁵⁷ YOUNG, *supra* n. 55 at 15.

⁵⁸ *Ibid.*, at 13.

⁵⁹ W.P. ADAMS, P.F. BURNET, M.R. GORDON & E.F. ROOTS, *Canada and Polar Science* (Ottawa: Department of Indian Affairs and Northern Development, March 1987) at 17 et seq.

ful sort of way. Although the Antarctic model is not perfect, it still provides a starting point for something equally important in the North.⁶⁰

The Antarctic Treaty System (ATS) includes the Antarctic Treaty of 1959, the measures in effect under that Treaty, and its associated separate legal documents, including the 1972 Convention for the Conservation of Antarctic Seals (CCAS),⁶¹ the 1980 Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR),⁶² the 1988 Convention on the Regulation of Antarctic Mineral Resource Activities (CRAMRA) which, however, was put aside after its adoption by the Antarctic Treaty Consultative Parties (ATCPs).⁶³ The latest development within the ATS is the Protocol on Environmental Protection to the Antarctic Treaty (PEPAT), adopted in Madrid on 4 October 1991.⁶⁴ According to the Protocol, the whole Antarctic area is to be designated as a natural reserve, devoted to peace and science.

The Antarctic Treaty is the core of the whole Antarctic Treaty System. The effectiveness of the ATS depends upon the validity of the Treaty. If there were a similar legal arrangement for the Arctic, tension and potential conflict would be reduced and environmental protection strengthened. The Antarctic Treaty contains at least three aspects which may have implications for the Arctic region and could also be applied here.

3.2. International cooperation and scientific research

Scientific activities in Antarctica began much earlier than the emergence of the legal regime and in fact contributed to its establishment. The Antarctic Treaty reaffirms the freedom of scientific investigation and cooperation. It confers upon any country in the world the right to conduct its scientific research at any spot in Antarctica according to its capability. In order to promote international cooperation in this regard, the states parties agreed to exchange scientific information and personnel among them and to encourage the establishment of cooperative working relations with international organizations which have scientific and technical interest in Antarctica. With the legal guarantee of the Antarctic Treaty, international cooperation of scientific research has worked quite satisfactorily at Antarctica. In particular, progress in our knowledge of world climate change is largely due to research carried out in Antarctica.⁶⁵

As to individual countries, a typical example can be drawn from the Chinese practice. China, as a leading developing country in the world, has bene-

⁶⁰ GORDON HODGSON, 'Editorial: who owns the land?' 41 *Arctic* (1988) at iii.

⁶¹ See *Handbook of the Antarctic Treaty System* (7th ed., 1990), Part IV, 4105.

⁶² Text is reprinted in *ibid.*, 4209.

⁶³ For the whole text, see *Antarctic Treaty: Final Report of the Fourth Special Antarctic Treaty Consultative Meeting on Antarctic Mineral Resources* (Wellington, 1988) 43-109.

⁶⁴ ATS Doc. XI ATSCM/2/3/2, 3 October 1991.

⁶⁵ ROLAND DUMAS, 'The Antarctic in world politics', 10 *International Challenges* (1990) at 5.

fited a lot from other countries, especially at its first stage of Antarctic activities under the provision of the international cooperation in the Antarctic Treaty, Japan offered training to Chinese explorers before the first Chinese expedition; the Soviet Union gave assistance; Chile and Argentina helped in choosing a suitable site for China's first Antarctic station; and the United States and New Zealand shared their Antarctic experiences with Chinese scientists.⁶⁶ Such scientific cooperation more or less softened tensions and promoted friendly relations among the countries concerned.

Scientific activities in the Arctic began as early as those in the Antarctic. Usually scientists from various countries cooperate and help each other. Unfortunately no legal framework exists to stabilize and promote such cooperation. We may recall that, in SCAR's⁶⁷ meeting in Oslo in August 1970, it was decided to request the International Council of Scientific Unions to establish an Arctic sister-organization of SCAR, a so-called SCAB, i.e. 'Scientific Committee for the Arctic Basin', but the plan later died out.⁶⁸ Only in recent years the possibility was explored to establish an 'Arctic SCAR' to enhance international scientific cooperation in the Arctic region. Interestingly, such kind of discussion first took place at the SCAR meeting in 1986 when representatives of several countries at that meeting felt that the time was propitious, in light of both the international political situation and the needs of science. In February 1987, a formal meeting among the Arctic countries was held in Oslo. The meeting was historic in the sense that for the first time senior people from all countries with territories north of the Arctic Circle had come together to discuss cooperation in Arctic science. There was a general consensus on the need for an international organization devoted to such cooperation.⁶⁹ After several consecutive fruitful meetings, the countries concerned signed the Founding Articles of the International Arctic Science Committee (IASC) on 28 August 1990 at Resolute Bay, Canada.

According to those Founding Articles, IASC is a non-governmental scientific organization established to encourage and facilitate international consultation on and cooperation in scientific research concerned with the Arctic. The Committee covers all fields of Arctic science and provides a forum for discussion, exchange of information and cooperation. It is composed of a Council, a

⁶⁶ For details, see ZOU KEYUAN, 'China's Antarctic policy and the Antarctic Treaty System', 24 *Ocean Development and International Law* (1993) 237-255.

⁶⁷ The Scientific Committee on Antarctic Research (SCAR) is a coordinating organization subordinate to the International Council of Scientific Unions. SCAR is to initiate, promote and coordinate scientific activity in Antarctica, with a view to framing and reviewing scientific programmes of circumpolar scope and significance. The Constitution of SCAR is reprinted in *Handbook of the Antarctic Treaty System* (7th ed., 1990) Part 4 at 4401. For reference, see J.H. ZUMBERGE, 'The scientific committee on Antarctic research and the Antarctic Treaty System', in Polar Research Board (ed.), *Antarctic Treaty System: An Assessment* (Washington: National Academy Press, 1986) 153-168.

⁶⁸ SKAGESTAD, *infra* n. 88 at 172-173.

⁶⁹ Loc. cit. n. 43 at 65.

Regional Board, Working Groups, the Arctic Science Conference and a Secretariat. The establishment of the IASC is quite meaningful in terms of establishing an international legal regime in the Arctic if we recall that SCAR also preceded the Antarctic Treaty.⁷⁰

3.3. Legal arrangement for territorial sovereignty

The sovereignty issue in the Antarctic is very complicated and was a major obstacle to international cooperation and scientific research in territory. There are seven countries which formally made territorial claims over parts of the Antarctic. The first claim was made by Britain in 1908. Since then, six other countries, one after another, have also made claims in Antarctica: New Zealand in 1923, France in 1924, Australia in 1933, Norway in 1939, Chile in 1940 and Argentina in 1942. These claims are pie-shaped, extending from 60°S latitude to the South Pole, except for the undefined northern limit of the Chilean⁷¹ and the northern/southern limits of the Norwegian.⁷² The bases of the claims vary from discovery, historic rights and symbolic act to geographic contiguity, sector principle, etc., but they are not sufficient in international law to support the claims. Furthermore, the claims made by Argentina, Britain and Chile overlap each other. All the claims together cover 85% of the Antarctic continent, leaving about 15% unclaimed (the Marie Byrd Land) which was tacitly reserved for the US.

The US has never officially made territorial claims, nor has it recognized the claims made by other countries. It has, however, reserved for itself the right to make territorial claims in the future. A similar position is taken by Russia. The rest of the world community of states has never accepted these claims or rights to make claims.

The controversy on Antarctic territorial sovereignty during the 1940s-1950s was a serious problem among the relevant countries. The tension and rivalry resulting from the territorial claims was, however, softened by the International Geophysical Year in 1957-1958. There was a gentleman's agreement among the countries conducting scientific investigations in Antarctica that they would not engage in legal or political argumentation during that period, in order for

⁷⁰ We have to note that the International Geophysical Year was a catalyst for the Antarctic Treaty but it failed in the Arctic context.

⁷¹ One of the reasons was articulated as "Chile is a single geographic unit which extends from Arica (on the northern border with Peru) to the South Pole". JACK CHILD, 'Latin *lebensraum*: the geopolitics of Ibero-American Antarctica', 10 *Applied Geography* (1990) at 294.

⁷² For the purpose of avoiding disadvantages resulting from the 'sector principle' for her rights or interests in the Arctic. In fact, AMUNDSEN individually claimed for Norway a circular area comprising the plateau around the South Pole and named it 'King Haakon VII Plateau'. JOHN HANESSIAN, Jr., 'National interests in Antarctica', in TREVOR HATHERTON (ed.), *Antarctica* (New York: Praeger, 1965) at 21.

the scientific programme to proceed without impediment.⁷³ The International Geophysical Year represented a major turning point for scientific research in Antarctica, and provided a sound foundation for the development of Antarctic scientific research in a wide range of disciplines of natural science. Politically, it became a catalyst for the negotiation of the Antarctic Treaty.

The Antarctic Treaty freezes the different legal positions of the state parties regarding territorial claims. Article IV of the Antarctic Treaty provides:

- “1. Nothing contained in the present Treaty shall be interpreted as:
 - a) a renunciation by any Contracting Party of previously asserted rights of or claims to territorial sovereignty in Antarctica;
 - b) a renunciation or diminution by any Contracting Party of any basis of claim to territorial sovereignty in Antarctica which it may have whether as a result of its activities or those of its nationals in Antarctica, or otherwise;
 - c) prejudicing the position of any Contracting Party as regards its recognition or non-recognition of any other State's right of or claim or basis of claim to territorial sovereignty in Antarctica.
2. No acts or activities taking place while the present Treaty is in force shall constitute a basis for asserting, supporting, or denying a claim to territorial sovereignty in Antarctica. No new claim, or enlargement of an existing claim, to territorial sovereignty in Antarctica shall be asserted while the present Treaty is in force.”

The provision created an ingenious solution to the delicate issue of territorial claims which otherwise would have caused great confrontation, even armed conflict, around Antarctica.⁷⁴ Thus the *status quo* of Antarctica maintained by the Antarctic Treaty has effectively prevented it from becoming the scene or object of international discord. The bifocalism in Article IV of the Antarctic Treaty is in fact only a *modus vivendi*, but it successfully put aside the tough issue of Antarctic sovereignty after all, and instead established the basis for international cooperation in the Antarctic continent.

In early years, the sovereignty problem posed a serious issue around the Arctic, as it did in the *Eastern Greenland Case*.⁷⁵ Over time, however, almost all territorial disputes have been settled. Some exceptions relate to delimitation of some maritime areas among the countries concerned or between Arctic countries and the international community.⁷⁶ Tracing back into history, sover-

⁷³ P.C. DANIELS, ‘The Antarctic Treaty’, in R.S. LEWIS and P.M. SMITH (eds.), *Frozen Future: A Prophetic Report from Antarctica* (New York: Quadrangle Books, 1973) at 35.

⁷⁴ Irrespective of the Cold War during the 1950s-1960s which culminated in the Berlin and Cuban crises, the two superpowers cooperated well in Antarctic affairs. And during the Falkland/Malvinas War in 1982, the delegates from respectively Britain and Argentina sat together, with other Antarctic Treaty Consultative Parties, to negotiate the Antarctic minerals regime.

⁷⁵ PCIJ Ser. A/B, No. 53 (1933).

⁷⁶ It is recalled that Hand Island, less than a mile in length and located between Greenland and Ellesmere Island at 80°49'N, is still contested between Canada and Denmark. FRANCKX, *supra* n.

eighty issues in the Antarctic and the Arctic interacted. For instance, the sector principle was applied in both regions by some of the territorial claimants. The sector principle/theory was first invoked by a Canadian Senator, PASCAL POIRIER, in 1907 as a basis for claiming sovereignty over all of the islands north of Canada. He advocated that "all the lands between the two lines up to the North Pole should belong and do belong to the country whose territory abuts up there."⁷⁷ It was later supported by some other scholars.⁷⁸ In practice, Canada and the Soviet Union openly or tacitly apply this theory to their respective Arctic territorial claims, but it was rejected by other Arctic States and the rest of the world community. Likewise, six of the claimants of Antarctic territories also use this theory as one of the bases of their claims. As one authority put it, the sector principle has not developed as a principle of customary law, neither general nor regional, and cannot serve as a root of title for the acquisition of sovereignty, particularly not to sea areas.⁷⁹

The only legal arrangement for territorial sovereignty in the Arctic is the 1920 Svalbard Treaty which granted Norway full and absolute sovereignty while setting some conditions on its exercise of sovereignty. The salient principles of the Treaty are demilitarization and neutralization of the region, and free access for and equal treatment of the state parties and their subjects with regard to the conduct of certain forms of economic activity on Svalbard. The Svalbard arrangement is different from the Antarctic arrangement in that the Antarctic model may be characterized as a 'cooperation-apparatus without a solution', while the Svalbard model may be termed a 'solution without a cooperation-apparatus'. With a view to these factors, it is natural to emphasize the dynamic character of the Antarctic model as compared to the static character of the Svalbard model.⁸⁰

Another question which is closely related to the sovereignty issue over polar regions is whether the concept of common heritage of mankind (CHM) should apply to them and the resources therein. It is not possible for the polar regions to be recognized as CHM at present time nor in the near future, although they are often categorized as the 'global commons'.⁸¹ Nevertheless, there is a tendency of these areas advancing towards becoming CHM, but, because of their global environmental importance and unlike the legal arrangement for the deep seabed in the 1982 UN Convention on the Law of the Sea,

25 at 115.

⁷⁷ *Canadian Senate Debates*, 20 February 1907 at 271; cited in DONAT PHARAND, *Canada's Arctic Waters in International Law* (Cambridge: Cambridge University Press, 1988) at 10.

⁷⁸ See D.H. MILLER, 'Political rights in the Arctic', 4 *Foreign Affairs* (1925) 47-60; and W.L. LAKHTINE, 'Rights over the Arctic', 24 *AJIL* (1930) 703-717.

⁷⁹ PHARAND, *supra* n. 77 at 79.

⁸⁰ GUNNAR SKAGESTAD, *infra* n. 88 at 181.

⁸¹ For details, see ZOU KEYUAN, 'The common heritage of mankind and the Antarctic treaty system', 38 *Netherlands International Law Review* (1991) 173-198; and DONAT PHARAND, 'L'Arctique et l'Antarctique: patrimoine commun de l'humanité', 7 *Annals of Air and Space Law* (1982) 415-430.

the arrangement as such, if applied to the polar regions, should be environment and conservation-oriented rather than towards economic development.

In 'polar literature', the question whether the Arctic is CHM is much less discussed than that with regard to the Antarctic. A simplistic perception may arise in the fact that all territories in the North have already been attributed and there is little debate on sovereignty. Consequently, there are hardly areas beyond the limits of national jurisdiction in the Arctic region, and there is no room for application of the CHM concept. The possibility of such application has been explored and advocated by a number of scholars. As LOUIS REY wrote:

"One of the world's most precious wildlife sanctuaries, the last frontier, the delicate remnants of nature's original schemes, the Arctic is a unique feature which is part of the common heritage of mankind and as such, deserves reverence and protection."⁸²

A similar argument was made by a Canadian lawyer, THOMAS R. BURGER, who noted that "all nation-states who are the joint custodians of the circumpolar basin" should "for all mankind, participate in the stewardship of the resources of that region".⁸³ According to others, the CHM principle could materialize in the Arctic context by establishing institutions for that purpose.⁸⁴ Whether the Arctic should be classified as CHM is still a matter of debate, but in any case the sea areas in the Arctic beyond the limits of national jurisdiction are part of CHM, even under the UNCLOS arrangement.

3.4. Consultative mechanism

As provided in Article IX of the Antarctic Treaty, the ATCPs shall meet regularly for the purposes of exchanging information, consulting each other on matters of common interest pertaining to Antarctica, and formulating measures in furtherance of the principles and objectives of the Antarctic Treaty, including measures regarding: (a) use of Antarctica for peaceful purposes only; (b) facilitation of scientific research in Antarctica; (c) facilitation of international scientific cooperation in Antarctica; (d) facilitation of the exercise of the rights of inspection provided for in Article VII of the Treaty; (e) questions relating to

⁸² LOUIS REY, 'The Arctic: mankind's unique heritage and common responsibility', 19 *Arctic and Alpine Research* no. 4 (1987) 346.

⁸³ T.R. BURGER, 'The north as frontier and homeland', in *The Arctic*, *supra* n. 44 at 41. The Arctic Council Panel also recognized the Arctic as common heritage, but of all Arctic peoples. See *supra* n. 49 at 6.

⁸⁴ HEIKKI PATOMAKI, 'Legal principles and political visions: territorial sovereignty versus the common heritage of mankind in the Arctic environmental protection', in LASSI HEINIEN and JYRKI KAKONEN (eds.), *Arctic Complexity: Essays on Arctic Interdependencies* (Finland: Tampere Peace Research Institute, 1991) 115-116.

the exercise of jurisdiction in Antarctica; and (f) preservation and conservation of living resources in Antarctica.

In practice, the Antarctic Treaty Consultative Meeting (ATCM) discusses all matters concerning Antarctic affairs. In these meetings the parties negotiate conventions relating to Antarctica as well as adopt a large number of recommendations.

With the consultative mechanism provided in Article IX of the Antarctic Treaty as a legal guarantee, the ATS maintains its strong vitality and remains dynamic. The ATCM can, at any time, negotiate and conclude a legal regime for various Antarctic activities, thus enhancing the development of the ATS. Furthermore, the provision ensures active cooperation instead of passive co-existence among the Antarctic Treaty parties in dealing with Antarctic affairs. This has been one of the key reasons for the rapid development of the ATS in a period of thirty years.

On the other hand, the mechanism of the decision-making process in the ATS consists of a two-tiered system, i.e., those countries who have conducted substantial activities in Antarctica can obtain the position of Consultative Parties and have the right of decision-making, whereas other Antarctic Treaty Parties have no such right. This system in practice obstructs the developing countries from participating in the Antarctic decision-making process because the financial and technological capabilities of these countries are comparatively weak.⁸⁵ Nevertheless, since 1983 this situation has greatly improved: non-ATCPs are invited to attend the ATCM as observers, thus enabling them to exert some influence on the development of the ATS.

While this institutional structure has been criticized as a closed shop or 'rich man's club',⁸⁶ it still has some advantages. Since Antarctica is a peculiar environment, newcomers without sufficient knowledge would easily cause environmental damage there. Thus the qualification system will ensure safer and more meaningful contributions from new countries.⁸⁷ The same situation would occur in the Arctic region.

Several consultative meetings have been held among the Arctic countries in response to the Finnish Initiative to protect the Arctic environment. Although they were first steps and lacked established forms and substance, there is little doubt that this form of discussion was to some extent influenced by the ATS consultation mechanism and will develop in a similar way in the near future. As SKAGESTAD pointed out, it is conceivable that such a consultative mechanism may be a useful, practical gateway towards cooperation meeting the need of measures of regulation and control in the Arctic where the conflict-potential

⁸⁵ ZOU, *supra* n. 84 at 196.

⁸⁶ Remark by J.V. GBEHO, Permanent Representative of Ghana to the UN, 80 *Proceedings American Society of International Law* (1986) at 281.

⁸⁷ See ZOU, *supra* n. 84 at 196-197.

is so comprehensive that the parties involved cannot be expected to agree upon any radical political 'New Deal'.⁸⁸

4. CONSERVATION PURPOSES

Having discussed some elements contained in the Antarctic Treaty and of Arctic relevance, we now turn to some of the conservationist and environmental principles and purposes embodied in the ATS to see whether they could be applied in the Arctic context. Finally, PEPAT will be discussed since it is now a legal framework of comprehensive environmental protection in the Antarctic.

4.1. Ecosystem principle

As noted above, the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) endorsed the ecosystem approach to the management of the entire Southern Ocean. This approach is in contrast to other conventions on fisheries such as IWC, NAFO and ICSEAF, where the aim is a sustainable yield of the target species and the welfare of the industry dependent upon it.⁸⁹ CCAMLR is based upon the conviction and understanding that the waters surrounding the Antarctic continent form a distinct marine region. Thus there was recognition from the outset that the ecosystem management would require coverage of an area larger than that of the Antarctic Treaty. As early as 1977, the ATCPs agreed that the Convention should apply not only to the area of the Antarctic Treaty but also "extend north of 60° South latitude where that is necessary for the effective conservation of species of the Antarctic ecosystem".⁹⁰ The scope of application of the Convention is up to the Antarctic Convergence or the Polar Front which is a complex transition zone lying between 45° and 60° South latitude within which colder Antarctic waters sink beneath the warmer sub-Antarctic waters to the north.

According to Article II of CCAMLR, the ecosystem approach contains three basic elements or conservation principles: maximum net recruitment; maintenance of ecological relationships; and the avoidance of non-reversible reductions of any species in the Southern Ocean.

⁸⁸ GUNNAR SKAGESTAD, 'The frozen frontier: models for international cooperation', 10 *Cooperation and Conflict* (1975) at 186.

⁸⁹ M. BASSON and J.R. BEDDINGTON, 'CCAMLR: the practical implications of an ecosystem approach', in A. JORGENSEN-DAHL and WILLY OSTRENG (eds.), *The Antarctic Treaty System in World Politics* (MacMillan, 1991) at 54.

⁹⁰ See TUCKER SCULLY, WILLIAM BROWN and BRUCE MANHEIM, 'The Convention for the Conservation of Antarctic Marine Living Resources: a model for large marine ecosystem management', in K. SHERMAN and L.M. ALEXANDER (eds.), *Variability and Management of Large Marine Ecosystems* (Boulder, Colorado: Westview Press, 1986) at 282.

The first conservation principle requires harvesting and associated activities to prevent a decrease in the size of any harvested population to levels below those which ensure the population's stable recruitment. For this purpose, the size of a population should not be allowed to fall below a level close to that which ensures greatest net annual increment. The level of greatest net annual increment is the ultimate limit on harvest. If a population falls below this level, then harvest must be consistent with recovery to the level of greatest net annual increment, or must cease. This ultimate limit on harvesting activities not only applies to krill, fish, and whales, which are the principal subjects of harvest, but also to populations of other species that directly or indirectly interact with a harvested population.⁹¹

The second principle requires harvesting and associated activities which prevent changes, or minimize the risk of changes in marine ecosystems which are not potentially reversible over two to three decades. This principle recognizes that adaptive change may result from artificial selection as well as ecological change, and thus addresses the resilience of the Antarctic ecosystem to harvesting and associated activities. Hence, while the first principle sets limits on the degree to which populations may be altered by human exploitation, the second conservation principle sets a rate at which such changes must be reversible.

The third principle requires parties to the Convention to maintain the ecological relationships that exist between harvested, dependent, and related populations of Antarctic marine living resources, and to restore depleted populations to levels which ensure the greatest net annual increment. This provision provides authorization for designating selected protected areas of sea, where harvest would be prohibited unless it would restore the ecosystem to such a structure and function as it was before harvesting occurred. Establishment of such areas in the Southern Ocean would provide a hedge against uncertainty and the risk of inadvertent exploitation in harvesting elsewhere.⁹²

The ecosystem standard provided in the CCAMLR was viewed as an important innovation in international arrangements for living resource management.⁹³ It is designed to protect the marine ecosystem as a whole while conserving the living species. Due to the absence of an effective enforcement mechanism and comprehensive scientific data about the whole marine ecosystem, there are, however, many difficulties in its implementation.⁹⁴ Secondly,

⁹¹ SCULLY et al., *ibid.* at 283.

⁹² *Ibid.*, at 285.

⁹³ See T. SCULLY, 'The Convention on the Conservation of Antarctic Marine Living Resources – a case study', in L.M. ALEXANDER, S. ALLEN and L.C. HANSON (eds.), *New Developments in Marine Science and Technology: Economic, Legal and Political Aspects*, 22 Law of the Sea Institute Proceedings (1989) at 138.

⁹⁴ See M.W. HOLDGATE, 'Antarctica: ice under pressure', 32 *Environment* no. 6 (1990) at 9. The ecosystem standard has been criticised to the extent that Art. II(3)(a), which sets as the criterion for the protection of species that they not be harvested below the level which ensures the greatest net annual increment, is suitable for those predatory species at the top of the food chain, but not

the term “rational use” in the conservation principle of the CCAMLR is yet to be defined unambiguously, i.e. how and to what extent the use is rational. Further, since the entry into force of the CCAMLR the ecosystem standard has not been effectively enforced – particular conservation measures come into being so late that some species and areas have already been over-exploited.⁹⁵ In this context, for the purpose of the effective implementation of the ecosystem standard of the CCAMLR, it is necessary, in furtherance of the concept of sustainable development, to apply the precautionary principle: the catch of the species of which mankind has collected sufficient scientific data is permissible, but must be sustainable and subject to the total allowed catch which must ensure the greatest net recruitment of the taken species. As to the species for which there is lack of sufficient scientific data, the catch should be strictly controlled or forbidden, waiting for further scientific justification. In short, fishing activities shall be prohibited unless they are conducted in full compliance with the ecosystem standard.

The Antarctica and Southern Ocean Coalition once stressed the urgent need for the creation of a management protocol to CCAMLR to improve the existing legal provisions. Accordingly, the protocol should include, *inter alia*, the following elements: (a) prior to the commencement or expansion of a fishery, the state party shall submit in advance to the Commission on the Conservation of Antarctic Marine Living Resources a proposal for harvesting which includes details of the nature and extent to which it wishes the fishery be established or expanded, and available biological data pertinent to management; (b) the Scientific Committee shall assess the likelihood that the objectives of the ecosystem standard will be achieved by this proposal; (c) the Commission shall establish a management plan for the new or developing fishery so that all the objectives of the ecosystem standard will be confidently satisfied.⁹⁶ These elements should be gradually embodied in the future Antarctic marine living resources regime.

Despite difficulties in the implementation and elaboration of conservation measures and desire to improve the existing regime, the ecosystem principle has in fact been a legal principle within the ATS, with ramifications for other conservation regimes, especially those regulating marine fisheries.

suitable for prey species. See J.G. GARDAM, ‘Management regimes for Antarctic marine living resources – an Australian perspective’, 15 *Melbourne University Law Review* (1985) at 302. Someone even argued that Article II, which sets out the ecosystem approach, was impractical: not enough was known about the Antarctic marine ecosystem to enable it to work if the pressure to take krill increased and it could therefore, become a source of weakness. See J.A. HEAP, ‘Has CCAMLR worked? Management policies and ecological needs’, 10 *International Challenges* no. 1 (1990) at 15.

⁹⁵ See F. ORREGO VICUNA, ‘The implementation of CCAMLR: is the decision-making machinery conducive to good management?’ 10 *International Challenges* no. 1 (1990) at 9.

⁹⁶ Antarctica and Southern Ocean Coalition, *The Convention for the Conservation of Antarctic Marine Living Resources – A Management Protocol Is Urgently Needed* (23 October 1990) at 7.

Like the Southern Ocean, the Arctic Ocean has its own uniqueness and natural features. To some extent, it is more ecosystematically integrated than the Southern Ocean. In terms of marine living resources, the Arctic Ocean proper is not productive, but the sea areas in the sub-Arctic are abundant in fisheries. Further, Arctic systems are usually simpler than other ones, involving lower diversity of species, so that the extinction of a given link in the food web may have serious consequences.⁹⁷ Thus the ecosystem principle, which has been governing the management and conservation of the Antarctic marine living resources as well as the protection of the marine environment, can also be used in the Arctic context. As BELSKY put it:

“The international community has accepted an obligation to protect the marine environment so as to protect its use for future generations, and to manage living and non-living resources so as to reduce or eliminate overexploitation. The only scientific means to accomplish this goal is through a total ecosystem approach.”⁹⁸

On the other hand, the application of this approach, which currently is done mainly to ocean management, can be expanded to land ecosystems, especially in the polar regions since the ecosystems in these areas are vulnerable and sensitive to human invasions. In order to effectively implement the principle, it is necessary to sub-divide the application area into ecologically differentiated management areas.

4.2. Precautionary principle

The precautionary principle originated from concepts embodied in national laws, notably the German law *Vorsorgeprinzip*. It first achieved some prominence at the international level over a decade ago, when concern was gathering over the state of the shallow Wadden Sea which borders the North Sea coast of the Netherlands, Germany and Denmark.⁹⁹ This principle is designed to ensure that a substance or activity posing a threat to the environment is prevented from adversely affecting the environment, even if there is no conclusive scientific proof linking that particular substance or activity to environmental damage.¹⁰⁰

⁹⁷ M.J. DUNBAR, ‘Arctic marine ecosystems’, 29 *Oceanus* (1986) at 40.

⁹⁸ M.H. BELSKY, ‘Developing an ecosystem management regime for large marine ecosystems’, in KENNETH SHERMAN and LEWIS M. ALEXANDER (eds.), *Biomass Yields and Geography of Large Marine Ecosystems* (Boulder: Westview Press, 1989) at 444.

⁹⁹ DAVID FREESTONE, ‘The precautionary principle’, in ROBIN CHURCHILL and DAVID FREESTONE (eds.), *International Law and Global Climate Change* (Graham & Trotman, 1991) at 21.

¹⁰⁰ J. CAMERON and J. ABOUCHAR, ‘The precautionary principle: a fundamental principle of law and policy for the protection of the global environment’, 14 *Boston College International & Comparative Law Review* (1991) at 2. See also A. NOLLKAEMPER, ‘The precautionary principle in international environmental law: what's new under the sun?’, 22 *Marine Pollution Bulletin* (1991)

Some people may argue that the precautionary principle is an elusive concept and has a variety of aspects which makes it difficult to develop a common understanding. But the precautionary principle, though not yet firmly established in international law, is a stringent form of preventive environmental policy. It is more than repair of damage or prevention of risks. Precautionary action requires reduction and prevention of environmental impacts irrespective of the existence of risks. Precautionary action must be taken to ensure that the loading capacity of the environment is not exhausted, and it also requires action even if risks are not yet certain but only probable, or, even less, not excluded.¹⁰¹

The first explicit reference to the precautionary approach and the principle of precautionary action is to be found in the text of the 1987 London Declaration, issued by the North Sea states at the end of the Second International North Sea Conference in November 1987:

“... in order to protect the North Sea from possibly damaging effects of the most dangerous substances, a precautionary approach is necessary which may require action to control inputs of such substances even before a causal link has been established by absolutely clear scientific evidence.”¹⁰²

Afterwards, a number of other political and legal documents also mentioned the approach.

Since the precautionary principle has been more and more recognized by the international community, it is necessary to apply or extend the principle to activities in Antarctica so as to improve the existing regime. Besides, for Antarctic activities, especially resource activities, another criterion should also be applied: the physical scale of human activity must be kept below the total carrying capacity of the planetary biosphere.¹⁰³ Accordingly, the Antarctic resource activities should be subject to some restraints, at least by limiting them to the extent that they will not have grave adverse impact on the Antarctic natural environment and that they will not compromise the needs and interests of future generations.

In fact, within the ATS, the precautionary principle is to some extent reflected in the Convention on the Regulation of Antarctic Mineral Resource Activities (CRAMRA). For example, whether or not a mineral resource activity is allowed depends upon the strict procedure of environmental impact assessment.¹⁰⁴ Furthermore, as to predictability, the legal arrangements of the

at 107.

¹⁰¹ LOTHAR GUNDLING, ‘The status in international law of the principle of precautionary action’, in DAVID FREESTONE and TON IJLSTRA (eds.), *The North Sea: Perspectives on Regional Environmental Cooperation* (Graham & Trotman, 1990) at 26.

¹⁰² FREESTONE, *supra* n. 99 at 23.

¹⁰³ J. ROBINSON et al., ‘Defining a sustainable society: values, principles and definitions’, 17 *Alternatives* no. 2 (1990) at 44.

¹⁰⁴ See Arts. 2 and 7 CRAMRA, *supra* n. 63 at 48-49 and 51-52.

ATS are advanced. There is no commercial sealing in the Southern Ocean at present, but whenever it occurs it shall be automatically controlled under the CCAS. The prohibition of mineral resource activities in Antarctica for fifty years in the recently adopted Environmental Protection Protocol (PEPAT) is another typical example. As mentioned above, the conservation of Antarctic marine living resources and the protection of Antarctic ecosystems requires the application of the precautionary principle as well. The most significant development which was achieved during the 1991 CCAMLR annual meeting was the Commission's adoption of a conservation measure to set a precautionary catch limit on krill fishing in a certain area in the Southern Ocean.¹⁰⁵ It is submitted that the precautionary principle is also applicable to the Arctic environment since it may be considered as a gradually accepted rule of international customary law.

4.3. The Protocol on Environmental Protection to the Antarctic Treaty (PEPAT)

The adoption of PEPAT represented an essential step towards the comprehensive protection of the Antarctic environment and ecosystems. The Preamble to the Protocol established the principle that the instrument developed partly out of "the need to enhance the protection of the Antarctic environment and dependent and associated ecosystems." To this end, the parties "commit themselves to the comprehensive protection of the Antarctic environment and dependent and associated ecosystems and hereby designate Antarctica as a natural reserve, devoted to peace and science."

Article 3 of the Protocol established the basic environmental principles. It provides in paragraph 1:

"The protection of the Antarctic environment and dependent and associated ecosystems and the intrinsic value of Antarctica, including its wilderness and aesthetic values and its value as an area for the conduct of scientific research, . . . shall be the fundamental considerations in the planning and conduct of all activities in the Antarctic Treaty area."

In pursuance to this principle, paragraph 2 of the Article states that:

- "(a) activities in the Antarctic Treaty area shall be planned and conducted so as to limit adverse impacts on the Antarctic environment and dependent and associated ecosystems;
- (b) activities in the Antarctic Treaty area shall be planned and conducted so as to avoid:
 - (i) adverse effects on climate or weather patterns;

¹⁰⁵ See Antarctica and Southern Ocean Coalition, *Report on the Tenth Meeting of the Commission for the Conservation of Antarctic Marine Living Resources* (1991) at 3.

- (ii) significant adverse effects on air or water quality;
 - (iii) significant changes in the atmospheric, terrestrial (including aquatic), glacial or marine environments;
 - (iv) detrimental changes in the distribution, abundance or productivity of species or populations of species of fauna and flora;
 - (v) further jeopardy to endangered or threatened species or populations of such species; or
 - (vi) degradation of, or substantial risk to, areas of biological, scientific, historic, aesthetic or wilderness significance;
- (c) activities in the Antarctic Treaty area shall be planned and conducted on the basis of information sufficient to allow prior assessments of, and informed judgements about, their possible impacts on the Antarctic environment and dependent and associated ecosystems and on the value of Antarctica for the conduct of scientific research.”

Any assessments and decisions made are to take full account of whether technology and procedures are available to provide for environmentally safe operations, and, according to Article 3(c):

“whether there exists the capacity to monitor key environmental parameters and ecosystem components so as to identify and provide early warning of any adverse effects of the activity and to provide for such modification of operating procedures as may be necessary in the light of results of monitoring or increased knowledge of the Antarctic environment and dependent and associated ecosystems.”

The decisions are further to take account of whether the capacity exists “to respond promptly and effectively to accidents”, particularly those with potential environmental effects.

Article 3 is one of the key provisions of the Protocol. In many respects, its substance is borrowed from Article 4 of the CRAMRA. But it is more comprehensive in that its provisions introduce a basis for a uniform standard for assessment of all human activity on the continent, irrespective of whether the activity is related to mining or to scientific research.¹⁰⁶

Five Annexes have been attached to the Protocol, dealing respectively with the environmental impact assessment (EIA) (Annex I), the management of specially protected areas (Annex V), waste management (Annex III), prevention of marine pollution (Annex IV), and conservation of fauna and flora (Annex II). According to PEPAT, a Committee for Environmental Protection is to be established to provide advice and formulate recommendations to the Parties in connection with the implementation of the Protocol, including the operation of its Annexes, for consideration at the ATCM.

¹⁰⁶ S.K.N. BLAY, ‘New trends in the protection of the Antarctic environment: the 1991 Madrid Protocol’, 86 AJIL (1992) at 389.

5. PROSPECTS

Having discussed the legal framework of the ATS in the field of environmental protection, we now turn back to the Arctic to see if the Antarctic regime is meaningful for the Arctic and to what extent we can learn from the Antarctic experience in establishing an Arctic regime.

5.1. Assessment of the Arctic Council proposal

As mentioned above, the proposal to establish an international Arctic Council was first made in Canada, and in January 1990 the Arctic Council Project was initiated as a private venture for public service. In May 1991, the Panel of the Arctic Council Project published a report which contained a detailed proposal to establish the Arctic Council. According to the proposal, the goals of an Arctic Council would be both substantive and procedural. It must help protect and rehabilitate circumpolar ecosystems from the contamination that comes with inconsiderate industrial development in the Arctic and elsewhere, find a way to abate and then end the uncivil practice of Arctic states, and help secure justice for the region's aboriginal peoples.¹⁰⁷ As to the structure of the Council, the Panel forwarded several options, but it preferred a compact structure which would consist of ten delegations, acting on the basis of consensus, and including eight Arctic States, the Arctic aboriginal conference and the Northern Forum.¹⁰⁸ As suggested, the items with respect to the Arctic environment constitute the main load for the Council's potential agenda, such as environmental impact assessment procedures, fisheries management, habitat protection, oil spill clean-up in the Arctic waters, parks creation, removal of hazardous materials, sewage disposal and water management, and wildlife management.¹⁰⁹

The above was largely endorsed by the Canadian government when it released a governmental proposal to the public in December 1991. According to that proposal, the Arctic Council would be an instrument of the Arctic countries and would not become a supra-national authority. Its functions would be:

- (a) to provide a forum for the Arctic countries to consider and discuss issues of common interest relating to the Arctic;
- (b) to support the development of the Arctic region by promoting cooperation among the Arctic countries and within the Arctic region in general;

¹⁰⁷ Arctic Council Panel, *supra* n. 49 at 6-7.

¹⁰⁸ *Ibid.*, at 19. The Northern Forum was launched in Anchorage, Alaska in September 1990. Among the signatories to the Anchorage Statement were governors and ministers from Alaska, Alberta, British Columbia, Chukotka, Greenland, Heilongjiang (China), Hokkaido, the Jewish Autonomous Region (USSR), Lapland (Finland), Magadan, the Northwest Territories, the Russian Republic, Sakhalin, Trondelag (Norway), Vasterbotten (Sweden) and Yukon.

¹⁰⁹ *Ibid.*, at 25.

(c) to support, as appropriate, the advancement of Arctic interests within appropriate international organizations.¹¹⁰

The Council would be composed of the representatives of the governments of the eight Arctic countries, as members, and the representatives of international Arctic non-governmental organizations as permanent observers. All decisions of the Council would be taken by consensus. Representatives of other non-Arctic national and sub-national governments could attend the meetings of the Council, as observers, upon request. A small Secretariat would be established in Canada.¹¹¹

The above proposal is meaningful in terms of environmental protection in the Arctic because the polar environment can only be protected through international cooperation and effective international arrangement. Although we recognize the values inherent in the proposal, we shall not overestimate them. The proposal still has a number of weaknesses. These are also reflected in PHARAND's Arctic Treaty proposal. While addressing the Declaration and Strategy of environmental protection in the Arctic as adopted by the Arctic countries, PHARAND emphasized at least two reasons for his preference for a treaty. First, the legal status of Ministerial Declarations is uncertain; and second, Declarations cannot serve as the founding instrument of an Arctic Council.¹¹² In comparison with the Canadian government's proposal, PHARAND's is more comprehensive and detailed. However, a common weakness lies in the solution of the question of fairness of representation in the decision-making process. According to both proposals, substantial power is attributed to the so-called Arctic countries who have territories north of the Arctic Circle. For example, PHARAND proposed that the Commission – the main body of the Council – would consist of twelve members, of which the founding Arctic states would be permanent members. The four non-permanent members would be elected by the Assembly, on the basis of an equitable representation of the admitted members. The non-permanent members would be elected for a four-year term, except for the first election when two would be elected for two years only.¹¹³ It is obvious that such an arrangement is too exclusive and not inducive for worldwide participation and cooperation, and in fact preventing effective protection of the Arctic rather than enhancing it. This reminds us of criticism raised in the United Nations that the ATS was too exclusive. For example, it might be peculiar that Iceland could be a permanent member in the Commission while Britain could not.

In comparison with the above proposal, the decision-making mechanism in the ATS is more open and accountable. Thus one may wonder whether the

¹¹⁰ JOHN HANNIGAN, *supra* n. 48 at 39.

¹¹¹ *Ibid.*

¹¹² DONAT PHARAND, 'The case for an Arctic region council and a treaty proposal', 23 *Revue general de droit* (1992) at 186.

¹¹³ PHARAND, *ibid.*, at 193, admitted that the Commission would be a governing body where the founding members have a controlling voice by their number (8 out of 12) and permanency.

above proposal could be acceptable on a worldwide scale. If not, the initial sense of universality of an emerging Arctic Treaty would disappear and reduce the whole exercise to a mere regional arrangement. Such arrangements already exist with respect to the Arctic and proved insufficient to protect the Arctic environment. That is the main reason why we should have an Arctic Treaty similar to the Antarctic Treaty. The decision-making process of the ATS appears to be a better arrangement, i.e. a parallel system should be endorsed. While the Arctic states should play an essential role, the states which have conducted substantial activities in the Arctic should be granted the same power in the Arctic Council. Equity and fairness could then be fully realized in the formation of such an organization. A second consideration is the fact that a large part of the Arctic Ocean is beyond the limits of national jurisdiction and should be governed by an international organization. In 1996, the Arctic states finally agreed to establish the Arctic Council.¹¹⁴

5.2. Elements for the future Arctic regime

Cooperation in protecting the global environment, including that of the polar regions, is an obligation that international law imposes upon all states. As indicated above, the Arctic Council or Arctic Treaty proposals are helpful to establish an international regime for the Arctic environment. But there are still doubts whether these proposals are feasible and/or whether an Arctic Council or an Arctic Treaty will be enough to protect the Arctic environment. It is clear that a comprehensive regime is required, i.e. to take the Arctic Treaty as an umbrella, and then develop step by step individual regimes for particular protection and conservation items. The format of the Annexes to the PEPAT could be borrowed. At the procedural level, the annex system is useful in that whenever a new environmental issue emerges and needs regulation, a relevant annex could be quickly negotiated to solve the issue by legal means. In substance, the environmental principles and standards provided for in the PEPAT are most advanced in international environmental law. Thus there is no doubt that these principles and standards should also apply to the Arctic. Likewise, the Annexes to the PEPAT which regulate particular environmental issues are also conducive to Arctic environmental protection. For example, the environmental impact assessment procedures have become international standards to be used anywhere in the world. Secondly, such matters as marine pollution, waste disposal and management, specially protected areas, and conservation of fauna and flora are important environmental issues to be resolved in the Arctic too.

Whether the Antarctic model can apply to the Arctic has long been a matter of discussion. The comparisons above show that it may not fully apply to the

¹¹⁴ See the Declaration on the Establishment of the Arctic Council, reprinted in ILM (1996) 1382-1390.

Arctic.¹¹⁵ Some of the elements in the ATS, however, especially those concerning environmental protection, are of obvious suitability, not only to the Arctic but to the global environment as a whole. As early as World War II, the then US Vice President HENRY A. WALLACE proposed that the US should take the initiative to develop an international treaty for the Arctic which would provide for cooperative efforts in the Arctic and assist Arctic exploration. During the late 1960s the concept of a 'Northlands Compact' emerged. This idea, which appears to have been influenced by the Antarctic Treaty, looked toward the development of an umbrella-type agreement to which Arctic nations could accede for particular purposes like economic development, environmental protection, health and medicine.¹¹⁶ Though unrealized, these early ideas and proposals offer insights in and incentives for establishing an environmental regime for the Arctic.

BLOOMFIELD noted in the early 1980s with some dismay that,

"Arctic political cooperation will not be as easy as it was in 1959 in the Antarctic. Whereas rudimentary institutions could be created and legal issues bypassed in the Antarctic, the Arctic is already an arena of competition in the newly vital realm of resource availability, and potentially in the strategic realm as well. Moreover, the political climate today for multilateral institution-building is nowhere near as propitious as it was two decades ago."¹¹⁷

Nevertheless, the current situation is favourable for broad international cooperation in the Arctic. Environmental protection could be regarded as a first step in this respect. If successful, such experience can be extended to cooperation in other fields. This is the so-called 'spill-over' effect, i.e. cooperation in one subject area might 'infect' other areas and possibly also pave the way for more directly conflict-preventive measures.¹¹⁸ The opportunities for expanded cooperation are much improved with the end of the Cold War. Not only has the easing of East-West relations improved the climate for regional cooperation in the Arctic and elsewhere; it has also removed, or lessened, obstacles caused by military considerations.¹¹⁹

¹¹⁵ Such a view is also concurred by DON ROTHWELL as he points out that "despite obvious similarities, it is not suggested that the Antarctic model should be adopted in the Arctic. Nevertheless, there are sufficient similar characteristics for the Arctic States to learn from the southern experience". D. ROTHWELL, 'International law and the protection of the Arctic environment', 44 ICLQ (1995) at 305; see also D.R. ROTHWELL, 'Polar lessons for the Arctic regime', 29 *Cooperation and Conflict* (1994) 55-76.

¹¹⁶ TUCKER SCULLY, 'Arctic policy: opportunities and perspectives', in IRA DYER and CHRYSOSTOMOS CHRYSOSTOMIDIS (eds.), *Arctic Technology and Policy* (Washington: Hemisphere Publishing Corporation, 1984) at 5.

¹¹⁷ LINCOLN P. BLOOMFIELD, 'The Arctic: last unmanaged frontier', *Foreign Affairs* (Fall 1981) 103-104.

¹¹⁸ SKAGESTAD, *supra* n. 88 at 173.

¹¹⁹ JOHN SKOGAN, 'International Arctic co-operation: scope and limitations', 19 *North Perspectives* no. 2 (1991) at 18.

To establish an environmental regime for the Arctic is not an easy task. The Antarctic experiences only provide some useful elements of reference. The real challenge lies on the Arctic nations and the native peoples. Apart from the Antarctic analogy, other international experiences are also worth learning from. For example, the arrangements for combatting marine pollution in the Mediterranean Sea may provide a useful model for approaching the Arctic.¹²⁰ It is appropriate to keep in mind that an environmental regime for the Arctic is urgently needed. There is no reason to delay its process of formation.

¹²⁰ As SCULLY notes, in some cases, the region that most directly resembles the Arctic is not the Antarctic but the Mediterranean. See *supra* n. 116 at 6.