

Canada's Arctic Environmental Strategy: Critique and Prospect

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Introduction

Concern for the sustainability of the Arctic environment is widespread and growing. Throughout the circumpolar North, efforts are underway to understand, plan, and act for the protection and rehabilitation of the region's ecosystems. For many, especially the aboriginal societies of the Arctic, the prospect of an ecologically degraded and contaminated homeland means the loss of more than ecosystems and renewable resources. It means the loss of a way of life and a culture, the demise of their very societies. Growing concern is felt at all levels, from communities to international organizations.

These concerns have given rise to a growing number of environmental initiatives across the circumpolar North. What are we to make of these initiatives? Do they emerge out of an overall sense of purpose and direction to which governments are committed? Are there clear objectives to guide the design of activities, the allocation of resources, and the assessment of results? Are the many interests organized in such a way as to encourage cooperative and coordinated approaches to environmental planning and management? Do the organizational and institutional arrangements lend themselves to adaptation and flexibility as they seek to deal with dynamic and shifting issues and priorities?

This paper focuses on the current efforts by the Canadian government to address arctic environmental sustainability. The purpose of this paper is twofold. First, it will suggest why a comprehensive arctic environmental strategy is essential and suggest criteria to guide research, analysis, and action. Second, using the suggested criteria, the paper will critique "The Arctic Environmental Strategy: An Action Plan" (INAC 1991) and suggest steps to improve the strategy.

Issues

Impacts of both Canadian and global industrial and resource developments are degrading arctic ecosystems and their ability to sustain themselves. (CARC 1988, 1990, 1991; Keith 1990; Griffiths and Young 1989; Waterwatch 1990) Persistent contaminants such as organochlorines, hydrocarbons, metals, and radionuclides, transported by atmospheric and marine systems, pose serious dangers to human health and the long term viability of ecosystems. Major hydroelectric and pulp and paper projects in Quebec, Ontario, Manitoba, Alberta, and British Columbia threaten arctic river basins and the estuarine and marine ecosystems dependent upon them. Northern mining operations continue to impact on ecosystems. Petroleum development in the Beaufort Sea and the adjacent coastal lands of the Yukon and Alaska may have serious effects on the Porcupine Caribou Herd. The endangered status of internationally significant wildlife species is also seen as a threat to ecosystems. The thinning of the ozone layer and global climatic change, with their human health and ecological impacts, are now thought to be far more serious than earlier expected. Taken together, these issues suggest that whole ecosystems are at risk and that the ecological threat is far more substantial than previously acknowledged.

What is also clear is that the threat to arctic ecosystems is also a threat to humans, especially traditional cultures and societies. Human health is at risk. The sustainability of the subsistence economy, which has persisted over the centuries and is an integral part of the arctic environment, is in question. In the aboriginal view, culture, language and identity are linked to ecological sustainability. At just the time when local and regional economic development of renewable resources is being contemplated, the resources themselves are being jeopardized.

Industrial activity is likely to continue to be an important economic force in the North. New technologies and more stringent regulation may moderate its environmental impacts. The challenge is to find ways to enhance and protect environmental systems and human well being, where both traditional and industrial societies search for a future.

Needs

This paper takes the view that an effective response to these issues necessitates the development of arctic environmental strategies which protect and enhance arctic ecosystems and societies. Ecosystem perspectives and principles of sustainability should form the basis of such strategies. The knowledge upon which a strategy is based must draw upon the ecological and cultural insights of aboriginal societies as well as scientific information. Decision making arrangements must involve interested and affected parties more equitably and be responsive to regional needs over time. Northerners themselves must have pivotal roles in creating and managing an environmental strategy. It will be necessary not only to protect and preserve, but to restore and rehabilitate degraded ecosystems and societies under stress. No single strategy is likely to address all issues. Instead, the contributions of many interests will be needed along with efforts to harmonize initiatives into a more or less coherent whole. As issues become better understood and priorities evolve, environmental strategies will have to change. It will be essential from the outset, therefore, to develop strategic approaches that are inherently adaptive.

Significance

Arctic ecosystems are important both in their own right and for their effects on wider global ecological patterns. The aforementioned evidence suggests that stresses on the arctic environment have been understated over the last decade. Both more knowledge and strategic action are needed if we are to ensure viable arctic ecosystems and the societies that depend on them. The World Commission on Environment and Development (WCED, 1988) suggested that societies whose history and practices provide lessons and insights into environmental sustainability should become important contributors to the formation of strategies for sustainability. Furthermore, cooperative approaches to the formation and adoption of environmental strategies among arctic nations provide important opportunities to forge stronger international links, and thus a greater level of security for all.

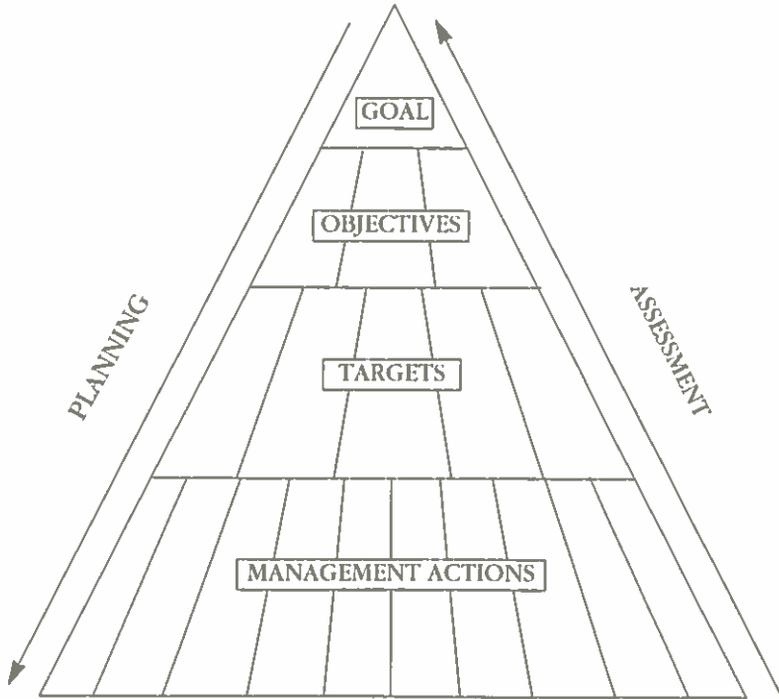


Figure 1: Strategy Model

Source: A Proposed Strategic Plan for Ontario Fisheries, Ministry of Natural Resources, Toronto, Canada, 1989.

Criteria for An Arctic Environmental Strategy

Defining a Strategy

A strategy can be thought of as a plan of action to achieve particular purposes in both the short and long term. More specifically, a strategy includes a stated goal(s), objectives, targets, and management actions (See Figure 1). A goal statement should provide sufficient clarity to give purpose and direction to sets of actions, while objectives set out the key principles and priorities that derive from the goal. Targets provide specific measurable achievements, that result from management actions. Planning a strategy involves the formulation of each of the above components, logically derived from the other. Evaluation of a strategy provides for a determination of the

degree to which a strategy is effective and consists of a series of comparative assessments between actions and targets, targets and objectives, and objectives and goal (See Figure 2).

What follows is a proposed goal and objectives for a Canadian arctic environmental strategy. These, in turn, are used as criteria to assess the strengths and limitations of the current federal government's Arctic Environmental Strategy (AES).

Goal

- an overall goal stated with sufficient clarity to provide a sense of purpose and direction and capable of being systematically evaluated against outcomes. As the ultimate objective of the strategy, usually attained through several different actions.

Objectives

- a set of major objectives or principles that reflect the important substantive aspects of the strategy. Relative priorities among these principles should be noted. Moreover, these principles should derive logically from the goal statement. They are likely to be expressed in both qualitative and quantitative terms.

Targets

- specific measurable targets should be derived logically from each of the objectives. For actions to be successful, their results should match the targets.

Management Actions

- activities are then designed to achieve the targets. Necessary resources to carry out each action should be identified. Resources may include financial, technical, and human resources including knowledge and skills. Schedules for actions to be undertaken and results achieved should be noted.

Planning

- it is essential to design the processes by which the strategy and each of its constituent elements is developed. Figure 1 refers to these processes generally as "planning." More specifically they include formulating goals and objectives, setting targets, and operational planning including resource allocation, and action implementation.

Assessment

- from the outset it is essential to design an on-going assessment or evaluation scheme to:
- determine, a priori, the feasibility of courses of action
- provide continuous monitoring of results compared to targets and objectives, and thus a basis for adaptation while in progress
- provide periodic overall strategy evaluations of the degree to which goals and objectives have been achieved

Figure 2 - Strategy Definitions

Proposed Goal and Objectives For A Canadian Arctic Environmental Strategy

This paper takes the view that the term "environment" includes both ecological and socio-cultural dimensions. Thus, an environmental strategy requires the integration of human and ecological perspectives where both are integral elements of the strategy. A second premise of the paper is that an environmental strategy should be based on principles of sustainability. In their synthesis of the literature, Robinson et al. (1990) define sustainability as "the persistence, over an apparently indefinite future, of certain necessary and desired characteristics of the socio-political system and its natural environment."

From this definition a number of principles of environmental/ecological sustainability and socio-political sustainability are developed. Included among these principles are protecting and enhancing life support systems, biotic diversity and ecosystem integrity, ensuring socio-political and economic equity, incorporating environmental concerns into decision making, increased public involvement in developing and implementing concepts of sustainability, and an open, accessible political process (Robinson, et al. 1990). In these views of sustainability we note the linking of human and ecological perspectives.

While a number of "environmentalists" may argue that including socio-cultural objectives in an environmental strategy serves to deflect needed attention from arctic ecosystems, this paper takes the view that a strategy that neglects arctic societies, and especially its aboriginal ones, may miss important initiatives to achieve sustainability. The Arctic is a homeland to aboriginal peoples whose distant, as well as contemporary, history indicates a sustainable relationship with arctic ecosystems. A strategy that neglects to build upon proven patterns of sustainable environmental management and resource use may overlook opportunities for the future (Berkes 1981, 1984; Jull 1986; Usher 1986; Hazell and Osberg 1990; Keith 1990). Thus, it is argued in this paper that an arctic environmental strategy should explicitly support societies that are integrally linked to proven patterns of action that promote sustainability of arctic ecosystems. Only by acknowledging explicitly human-ecological interactions and their complexities are we likely to find viable options for the future (Jantsch 1975; Trist 1980, 1983). From the foregoing, the author suggests the following as a state-

ment of goals and objectives for a Canadian arctic environmental strategy.

Goal

The goal of an arctic environmental strategy is to protect and enhance the sustainability of the biophysical and socio-cultural components of the Arctic environment.

Objectives

1. Maintain and enhance ecosystem integrity. Ensuring that ecosystems are self-sustaining and self-regulating is critical. Key factors in ecosystem integrity are interdependence, diversity, resilience, adaptability and thresholds. Establishing areas of preservation to ensure whole ecosystem health, protecting ecosystems from further deleterious impacts of human activity, and rehabilitating and restoring degraded and endangered ecosystems, areas, populations and species should be central features of an arctic environmental strategy.
2. Maintain subsistence cultures. Through the centuries the aboriginal peoples of the Arctic have lived in a balance with their natural environment. Indigenous management strategies have proven effective in maintaining ecosystem integrity and wildlife populations. The continuing presence of viable subsistence economies is seen here as an important means of ensuring the future well-being of not only harvest populations but also of their habitat.
3. Support the sustainable use of renewable resources. The renewable resource economy, in both its subsistence and commercial forms is critical to arctic peoples and to the natural environment. Renewable resource harvesting must be consistent with the capacity of the ecosystems to ensure their integrity.
4. Promote the development of knowledge, its dissemination and its use in decision-making. There is a need to document

and compile traditional native knowledge about the natural environment and the ways in which that knowledge is used to plan and manage human activity as it relates to the arctic ecology. As well, it is essential that arctic scientific research be expanded to address significant gaps in our understanding of the arctic environment. It will be particularly important to promote research on ecosystem properties and techniques for remediation. The effective use of both traditional knowledge and scientific information will require new paradigms of knowledge and management.

5. Develop environmentally sensitive institutions, laws and decision-making processes. The environmental agenda must become much more centrally placed in development decision making. New institutional and organizational arrangements are required. To some extent current problems in Canada are a result of ineffective institutional arrangements. Innovative design for cooperative-coordinative environmental strategy-making and environmental management is needed (Osherenko 1988; Cizek 1990; Keith 1990; Keith and Mulvihill 1991).

Targets and Management Actions

Following from the objectives, the framework develops targets, each derived from an objective. A target is a specific result or outcome to be achieved and usually includes time frames.

For each target, a set of activities is designed that when undertaken should achieve results consistent with the established target. Actions could include policy formulation and the enactment of legislation, conducting research, planning, assessment, regulation, program implementation, provision of financial support and incentives, information dissemination and so on. Resources to carry out the planned activities are an important aspect of this phase of the process.

There is an inherent logic to the sequence of steps in the strategic framework. If resources are available and used, then actions can be taken. If actions are taken then results occur, hopefully the desired ones. If the desired results are achieved then targets are met. If targets are met successfully then an objective can be reached. If the objectives are met then the

overall goal should be accomplished. This sequence of "if...thens" provides the strategic analyst with a set of questions to evaluate a strategy. It is this approach that is used here to evaluate the 1991 Canadian AES.

An Analysis of the Canadian AES

Environmental policies for the Canadian Arctic have been frequently criticized for lacking a clear sense of purpose and a set of activities that, taken together, integrates ecosystem considerations and socio-cultural factors to promote sustainability (Fenge 1982, 1984; Keith 1986; Fenge and Rees 1987). A number of environmental policies and programs are subordinate to economic and industrial interests (Keith, et al. 1976; Keith, et al. 1981; O'Reilly 1984) and therefore largely ineffectual in addressing the integrity and sustainability of arctic ecosystems. Analysts note that relatively few public sector resources are allocated to environmental protection in contrast to those development activities that are harmful to the environment (RFI, 1991). There has been a sense of "drifting" in Canadian arctic environmental policy, of reacting to emerging events and crises, rather than trying to move in a systematic fashion towards agreed upon goals, following broadly supported principles. Until recently the federal government has acted largely as a provincial authority in the northern territories. While devolution of federal authority and responsibility to the territories is gradually changing political and administrative arrangements in the Canadian North, there remains a tendency for centralists to assume the national interest in the North is the view of the federal government. While there are now, and will continue to be, areas of federal jurisdiction there, this should not be construed as the national interest in the North. That interest should be defined by the integration of interests of all levels of government acting in cooperative and coordinative ways with the other legitimate decision-makers including Native, industrial scientific, educational and environmental organizations. Complex environmental issues are not capable of single interest solutions especially, where the interest is that of the agencies of the federal government.

The 1991 Strategy

As global environmental concerns grew in the latter 1980s the Canadian government, at the urging of a coalition of many environmental organizations (GFCC 1989), began the development of what has become known as the Green Plan (Canada 1990). In the throne speech of April 3, 1989, the federal government undertook two commitments to the Arctic, namely to protect the integrity of the arctic ecosystems and to pursue multilateral cooperation in the circumpolar North. From this commitment came a working committee of officials of three federal departments, Indian and Northern Affairs (INAC), Environment (DOE) and Fisheries and Oceans (DFO), whose task it was to initiate a process to develop a Canadian Arctic Environmental Strategy. Early indications were that \$600 million were to be allocated to the implementation of the strategy as part of the wider national Green Plan. The early discussions involved other agencies of the federal government, the territorial governments, Native peoples' organizations, environmental groups, scientists and others. There was an attempt to solicit the views of a wide range of interests on what the strategy should include. Within a year, budget restraints and inter-agency difficulties in coordination and cooperation narrowed the scope of the strategy. Following a discussion paper that was widely circulated, several consultation workshops were held in the Arctic. Then, on April 29, 1991, *The Arctic Environmental Strategy: An Action Plan* (INAC 1991) was launched in Iqaluit, Northwest Territories.

A number of questions arise. Does the new strategy have a clear sense of purpose and commitment? Does it take account of the issues that various interests believe are important? Are there priorities among its objectives? Are resources identified and are they adequate? Are implementation plans specified? Does the new strategy measure well against generally accepted views of what should constitute an effective strategy as suggested by the criteria above? What follows now is an analysis to attempt to answer these questions.

Goal

To preserve and enhance the integrity, health, biodiversity and productivity of our Arctic ecosystems for the benefit of present and future generations.

Objectives

1. To ensure the health and well being of Arctic ecosystems.
2. To provide for the protection and enhancement of environmental quality and sustainable utilization of resources, including their use by indigenous peoples.
3. To ensure that indigenous peoples' perspectives, values and practices are fully accommodated in the planning, development, conservation and protection of the Arctic region.
4. To ensure better decision making through integration of local, national and international interests as part of new legal, constitutional and cooperative arrangements.
5. To develop international agreements and arrangements to use, conserve and manage resources and protect the circumpolar Arctic environment.

Figure 3: Goal and Objectives of the 1991 Canadian Arctic Environmental Strategy

Source: *The Arctic Environmental Strategy: An Action Plan*, Indian and Northern Affairs Canada, Ottawa, April, 1991, p.2.

AES Goal and Objectives

The goal and objectives of the Canadian strategy are found in Figure 3. Ecosystem integrity is the central aim. Such a goal is consistent, as far as it goes, with the proposed goal and objectives described above. What is missing is explicit recognition of the interdependence of arctic ecosystems and societies. Those ecosystems have existed in adaptive and resilient relations with the region's subsistence societies. Present day ecosystems are, in part, an expression of that interdependence. To argue, as the Canadian AES does, for benefits to "present and future generations," does not accord sufficient significance to the ongoing role of aboriginal societies to ecological well-being.

The objectives of the Canadian AES compare favourably, for the most part, with those suggested above as criteria. Two aspects, though, would have improved the strategy. An arctic environmental strategy should include specific reference to support for subsistence cultures and economies. The World

Commission on Environment and Development (WCED 1987), and the reports of Mackenzie Valley Pipeline Inquiry in Canada (Berger 1977) and the Alaska Native Review Commission, (Berger 1985), called for steps to protect and enhance subsistence cultures as a part of strategies for environmental sustainability. The Yukon Government affirms the importance of traditional societies as part of both the Yukon Conservation Strategy (Yukon Government 1989) and their economic development strategy (Yukon Government 1988). Northern land claim settlements also take a strong position on linking traditional societies and environmental protection and management. The land claim agreements of the Council of Yukon Indians (CYI 1989), the Inuvialuit (IFA 1984) and the Inuit of the central and eastern Arctic (DIAND and TFN 1990) all contain important provisions to protect and enhance both the traditional economy and the environment. An environmental strategy that provides for sustainable “use by indigenous peoples,” as the AES states, does not affirm the societies themselves. It is argued here that an arctic environmental strategy should acknowledge the continuing and central role of such societies in ensuring the sustainability of arctic ecosystems.

The list of objectives would also be improved with explicit reference to knowledge of the Arctic. Reference should be made to aboriginal knowledge and its potential for not only renewable resource planning and management, but for ecosystems monitoring and detection of environmental change. Scientific research should be expanded and sustained. A stated objective on arctic knowledge within the overall environmental strategy would give needed emphasis to this long-neglected dimension.

Four Issues

The Canadian AES focuses on four “key environmental challenges” and outlines programs for each. The four issues are (INAC 1991, p. 3):

- contaminants
- waste
- water, and

- environment/economy integration.

Each program includes a statement of objective, a work plan, and the results expected. The analysis briefly examines each program.

1. Action on Contaminants

This program is intended to address the problems associated with the long range transport of pollutants into the arctic environment and food chains, and has as its objective "To reduce and wherever possible eliminate contaminants in country food." Few, if any, would challenge the importance of this environmental issue. The question here is whether the strategy is an adequate response.

While the work plan proposes important activities, a review of those activities suggests that little in the program will actually reduce or eliminate contaminants from northern foods or the ecosystems. Identification, assessments and timely advice will not achieve reduction or elimination. Nor is it certain that international agreements in the near future are likely to produce strong control orders acceptable to the contaminant source nations, including Canada itself. While the government is committing \$35 million to this component of the AES, there is no indication of priorities within the action plan or of how the monies will be allocated. Moreover, no specific targets are presented and no measurable results are identified for each of actions, making it difficult to determine their logic and feasibility. No specific legislation is proposed. No mention is made of technology transfers to assist other polluting countries achieve more stringent levels of control. Moreover, the stated objective is weak. Elimination "wherever possible" is seen as incrementalism and subject to variations in interpretation and effort. It also implies the use of the concept "best available technology, economically achievable" (MISA 1986), which is unlikely to achieve elimination. Alternatively, the goal could have been stated as "virtual elimination" of persistent hazardous contaminants from arctic ecosystems, the method to be used being "zero discharge."

2. *Action on Waste*

The objective of this program is "To eliminate unsafe, hazardous and unsightly waste." The specificity with which the goal is stated and the establishment of clear targets and priorities indicates potential for real action. However, there is some ambiguity over what, and whose, wastes will be cleaned up. Where non-hazardous wastes are concerned the strategy appears to limit its scope to federal government wastes that are near communities (INAC 1991, p.9). The strategy is unclear about wastes from other governments' activities, petroleum and mining projects, military, commercial tourism and air, sea and land transport facilities. The timetable for action is not clear. While the overall AES is to cover a six-year period, the feasibility of the work plan for wastes is difficult to assess without some sense of timing. Furthermore, the strategy is not explicit as to how the \$30 million for action on waste is to be allocated to the clean-up of hazardous wastes, DEW line waste, and non-hazardous wastes.

3. *Action on Water*

Arctic water issues are particularly important. Human health and ecosystem integrity are seen to be at risk (CARC 1990). The AES proposes "To establish an enhanced water resource management regime" to ensure adequate supplies of quality water in the North.

While the strategy summarizes the key types of pollution, the objective of an enhanced management regime and the work plan do not contain water quality and quantity criteria. Instead, the strategy advocates enhanced information gathering systems to promote better decision making. While good information is necessary, it is not sufficient. In the absence of a clear statement of water quality and quantity objectives it is difficult to design information gathering systems and then make decisions. The objective of virtual elimination by means of zero discharge would provide a clear criterion for measuring achievements.

The AES indicates that 50 water quality and 100 water quantity monitoring stations will be established to provide a comprehensive monitoring network. A new laboratory will

be established and data bases upgraded. The plan calls for \$25 million over six years to implement these actions. No schedule is given and it is not clear how the monies are allocated among the various actions. No user priorities are set out. No measures for protection and enforcement are indicated. Nowhere is there any concrete indication that effort will go into rehabilitation and restoration of degraded waters. Reference is made to an "enhanced water resource management regime" (INAC 1991, p. 10). However, no indication is given whether such a regime will be river basin oriented, organized by jurisdictions, integrated into land claims institutions or established under some form of inter-jurisdictional legislation.

4. *Action on Environment/Economy Integration*

Native land claims (CYI 1989; IFA 1984; DIAND and TFN 1990), northern conservation initiatives (Yukon Government 1989; GNWT 1989; Task Force on Northern Conservation 1984) and international strategies such as the World Conservation Strategy (IUCN 1980) and the Brundtland Commission (WCED 1987) have urged much greater integration of environmental and economic factors in the development process. The complexity of this challenge, along with the need to accommodate regional differences, makes progress slow. Also, entrenched economic interests mitigate against marked and rapid integration of environmental factors in public and private sector decision making. The Canadian AES could be said, at best, to be cautious on this issue.

The underlying premise of this program seems to be that the subsistence economy will not persist. The AES states that "Many northern communities are in a period of transition between having a subsistence economy and a market economy" (INAC 1991, p. 15). This suggests the federal view is that the subsistence economy is being supplanted by the wage economy and is thus not capable of sustaining itself. The existence of two economies is not in dispute in this paper. Rather, it is important to recognize that for many Native communities both are intimately linked to one another. The point to be remembered is that the subsistence economy is the economy of choice among many aboriginal

Arctic residents. It functions well in many communities, certainly in terms of meeting basic human needs, and it has coexisted with arctic ecosystems in adaptive, self-regulating and, self sustaining terms. The development of wildlife harvester support programs in northern Quebec and a similar interest among aboriginal peoples of the Northwest Territories (Ames, et al., 1988) would suggest that Native peoples are seeking ways to enhance and expand participation in that economy, rather than only seeking ways to move out of the traditional economy. The assumption that all, or even many, northern Native communities and residents are in a unidirectional transition from the traditional subsistence economy to the formal market economy would not seem warranted. The AES therefore, falls short of the expressed aspirations of many northern Native peoples.

The strategy also indicates that Native communities need assistance in formulating and implementing resource management plans. It is important not to overstate this view. The effectiveness of traditional management systems (Usher 1986) and provisions for Native management in land claims settlements are reasons to believe that communities can manage resources quite well. The Canadian AES seems to imply that management must be taught and that the principal learners are the residents of Native communities. If there is a genuine interest in traditional knowledge and its use in arctic decision making, there should be a clear indication to the effect that public and private sector decision makers must engage in the learning process as well. To promote sustainable development, institutional and organizational arrangements are needed to involve all legitimate parties in learning, planning, decision making, implementation, and environmental monitoring.

The work plan for the environment/economy program appears ambiguous. Priorities are not stated, thus it is unclear how the designated \$10 million will be allocated to the various actions. One might have expected greater specificity in work plans. For example, the harvester support program of the Cree of Northern Quebec, which promotes the traditional harvest economy, could have been a model from which other similar programs could have been adapted (Ames, et al., 1988). The fact that similar programs are

being considered in other areas of the Canadian North is reason to think that such an initiative might have been a part of the AES.

Urgency Versus Comprehensiveness

The Canadian AES is claimed by the federal government to be a "comprehensive approach to dealing effectively with a broad spectrum of environmental issues" (INAC 1991, p. i). One asks then 'Why have only four issues been selected for consideration at this time?' There is an undeniable sense of importance and urgency associated with contaminants, waste, water and sustainable development. One presumes that, in the judgement of the government, these are the priority issues to which limited resources are to be allocated over the next few years. However, it is one thing to have priorities and it is another to neglect to account for other significant issues. If a strategy is to be comprehensive it should address the full range of concerns at the framework level. This is not to say that immediate action plans for all issues are called for at this time. There should be, however, some indication that the broad spectrum of issues is accounted for in the framework and, in time, will be addressed. Several critical issues are not identified as part of the overall strategy.

1. The current version of the strategy fails to indicate how heritage and protected areas planning and management will mesh with the environmental strategy. Parks, preserves, wilderness areas, sanctuaries, International Biological Program sites, National Wildlife Areas, polynia, and ecological areas of diversity, productivity and special significance, constitute a major component of the Arctic environment. While it may be argued that agencies or jurisdictions other than DIAND have responsibility for such initiatives, the failure to acknowledge these areas as an integral part of the overall environmental strategy is to invite continued fragmentation of thought and action. There is little to suggest that an environmental strategy can be successful without linking protected area policy and management to it.
2. The Department of Fisheries and Oceans is implementing an Arctic Marine Conservation Strategy (DFO 1987). The

1991 AES from INAC fails to explicitly incorporate this program in its view of the future of the Arctic environment.

3. Several conservation initiatives originating in the Canadian North appear to have been overlooked in the federal strategy. Both the Yukon and the Northwest Territories have developed conservation/sustainable development strategies. (Government of Yukon 1989; GNWT 1989). Land claims negotiations and settlements in the Yukon and the NWT have significant conservation and renewable resources management components (CYI 1989; IFA 1984; WMAC 1988; DIAND and TFN 1990). Both northern territories have established "Round Tables on the Environment and Economy" where representatives from government, communities, business and industry, Native organizations and environmental groups work to develop sustainable development programs. The failure to relate the AES to these important northern initiatives is a serious omission.
4. Species protection is not included as a distinct aspect of the strategy. Canada's domestic and international responsibilities to wildlife would seem to have been neglected in the current strategy.
5. There is too little evidence in the current federal strategy of how it proposes to develop an ecosystem approach to the Arctic environment. Research and monitoring around four crucial issues is not likely to yield good ecosystem data. The stated emphasis in the strategy on ecosystem integrity calls for a more detailed statement on how this need is to be addressed.
6. As the strategy suggests, evidence to date indicates that significant harm has already occurred to arctic ecosystems. The absence of a distinct component of the strategy to deal with restoration and rehabilitation leaves open the question of the intention to do so. While it may be argued that very little is known of the science of restoration and rehabilitation, a comprehensive strategy should at last include elements to develop that science.

Why does the strategy focus only on the four selected issues? Federal interest on these issues is not new. They are issues on which the government has pledged action in the past. The strat-

egy could then be construed as a mechanism to make good on previous promises. It is also the case that the federal Auditor-General, in his report for the fiscal year ending March 1990, has criticized INAC for various management practices. The lack of resources management objectives, too few data to manage resources, inadequate enforcement, and tardiness in responding to research findings were among his concerns (RAGC 1990). The 1991 strategy goes some way to rectifying these criticisms and thus, could be seen as a necessary response to them rather than an effort to develop a comprehensive strategy. Other problems plague the strategy.

Developing A Strategy: A Question of Process

Simply consulting with northerners in Canada is no longer appropriate or acceptable. Government leaders in both the Yukon and Alaska have stated that northerners' interest in asserting greater influence over affairs that affect them is growing and in so doing they are "rejecting remote control" (Keith 1990). Empowerment of northerners through devolution and land claim settlements requires, at the very least, co-planning and co-management. And yet consulting northerners is what characterizes, for the most part, the federal government's approach to the development of its arctic environmental strategy (Wiseman 1991). At no time was there an undertaking by the federal government to meet with northern interests as principals around the table to design an AES. Following distribution of a discussion paper, which dealt with the four issues of contaminants, waste, water, and sustainable development, several consultation sessions were held in the Canadian North to gather residents' views. Though other issues were discussed at these sessions the final strategy focused only on the four pre-determined issues. The consultations seem to have had little influence on the outcome, other than to confirm that the four issues are important (Wiseman 1991).

The federal claim that the arctic environmental strategy is both an ecological and a socio-cultural statement and that its merit is based partly on consideration of "a broad spectrum of issues," would seem to necessitate a stakeholder-based design process involving all the key actors. To this end the federal interest could be seen ideally in two parts, one being its own

legitimate areas of jurisdiction, the other as the facilitator of the strategy design process linking the other interested parties. In this type of forum the territorial governments, Native organizations, industrial interests, environmental organizations, scientists and educators could have been creatively engaged in the exercise to develop an AES. To have done so would have drawn on the on-going work of the other actors. The Inuit Circumpolar Conference has been working for several years on its "Arctic Policy" (ICC 1986) that has, as one component, an environmental strategy. The territorial governments, Native organizations and a number of environmental groups have all developed various notions of what ought to constitute at least parts of an arctic environmental strategy. The failure of the federal government to follow through on its initial instincts to create a broad participatory base for the design of the strategy meant the loss of the opportunity to build constructively on the genuine interests of all of these actors.

Such insularity on the part of the federal government, while not without precedent, seems to be at cross-purposes with the evolving political ambience in the Canadian North. The present federal government has quickened the pace of devolution in recent years. Federal authority and responsibility in such areas as forestry, health, education, waters, lands, and minerals have been, or are in various stages of being, transferred to the territorial governments. Moreover, new powers are going to the institutions and organizations that are being created through Native land claims. As well, northern governments are taking initiatives that assert a greater degree of autonomy (Keith 1990). Why then has the Canadian Arctic Environmental Strategy evolved in a narrower rather than broader process?

This paper takes the view that environmental issues are not sufficiently important to the current federal policy makers and administrators. Faced with an economic recession and growing deficits, some environmental plans are seen to fall victim to financial constraint and other priorities. In 1989 indications were that the arctic environmental strategy would be funded to the level of \$600 million. At the April 1991 launch of the strategy, support was announced at \$100 million. It can be argued that strategy makers narrowed the scope of the AES to correspond with the financial reality.

Another reason for the single-handed approach of the federal government may lie in the country's constitutional difficulties.

Regionalism is on the rise in Canada. The arctic environment, as the strategy itself says, is "downstream from everywhere" (INAC 1991, p. 10). Thus, to solve many arctic issues in Canada the federal government must deal with provincial and territorial governments. Recent intergovernmental relations over such environmentally disruptive projects as the James Bay hydro electric developments in Quebec, the Rafferty-Alameda irrigation and flood control dams in Saskatchewan and the pulp and paper mill projects in northern Alberta, have proven difficult. Due to agendas for separation and more regional autonomy in Canada, the federal government is not anxious to engage in issues that exacerbate such tensions. Under such circumstances environmental agendas that pit the federal government against the provinces are likely to be avoided whenever possible.

Limitations of the AES may also lie partly in the lack of clear sense of what the federal interest in the Canadian North is, and will be. To some, the federal view represents the national interest in the North. In this paper a somewhat different position is suggested, one in which the federal interest should be seen as but one of several interests, and that the national interest is that wider sense of purpose and action that emerges from a synthesis of interests. For example, it is in the national interest that the integrity of ecosystems be respected and protected from trans-boundary impacts. But it is also in national interest that community economies thrive and meet the needs of their residents. These two interests are clearly linked but involve different jurisdictions and thus, require the attention of different sets of actors. The conclusion here is that an environmental strategy is inherently a multi-actor concern and its design and implementation can only be effective when all key interests are genuine participants in its formulation.

Next Steps

The challenge now is to re-start the processes of formulating an AES in ways that are truly northern in focus yet national in perspective. Ultimately, international linkages must also be made if collective responsibility for the circumpolar Arctic region is to be realized. For many of the reasons discussed above, the limitations of the current AES make it unlikely that the federal government alone can initiate or facilitate a process

to improve the AES. This is not to say that the federal government will be an unimportant participant. Rather, Ottawa's remoteness from the Arctic itself and the ways in which people there view the environment, coupled with a lack of success in creating interest-based policy and planning processes, in which power and responsibility are equitably shared, makes the federal government unlikely to be able to effectively lead the exercise. Thus, the task falls to other bodies. Quite apart from the limitations of the federal government in this regard, the interest of northerners themselves in asserting greater influence over matters that affect them cannot be easily dismissed. This paper suggests five organizations, or groups of organizations, that might initiate further work on an AES for Canada. Each brings special qualities, and limits, to what it can do. The success of any venture will depend in large measure on the willingness of all key interests to participate as co-principals in the task. It may be that not one but some combination of the following organizations would evolve to take the lead in developing an AES. While there are a number of ways to go about such a task, their general characteristics can be inferred from the critique above of the current Canadian AES. What follows is a brief discussion of selected organizations that might adopt the challenge of facilitating the further development of the AES.

1. Territorial Round Tables on the Environment and Economy

The Northwest Territories and the Yukon have each established "Round Tables" to promote sustainable development within their jurisdictions. Environmental integrity in the Arctic is central to their long term missions. These two organizations might convene as a single body with a secretariat to design an AES. The members of both "Round Tables" represent a broad spectrum of interests, thus ensuring breadth of perspective. Moreover, the northern territories have taken important steps to establish conservation and sustainable development programs (Yukon Government 1988, 1989; GNWT 1989). Many of the elements of an arctic environmental strategy are contained in these initiatives and could provide a base on which to build the strategy further. In addition, the Statutes of the Yukon 1991, Environment Act (Yukon Government 1991) is an important

northern initiative that further supports the idea of a territorial role in developing an AES. The objectives of that Act follow closely the sustainability-based objectives proposed in this paper for an AES. For these several reasons, an AES process led by the territorial Round Tables appears to hold promise.

2. *Territorial Governments*

The Departments of Renewable Resources the Northwest Territories and the Yukon could be charged by their respective legislatures to convene a joint body to develop an AES. The gradual devolution of federal authority and responsibility for environmental and resources policy makes these bodies increasingly important in such policy areas. Broadly participatory processes are called for. The efforts, discussed above, by both governments to create conservation and sustainable development strategies, along with their environment and resource management responsibilities, are reasons to suggest such an initiative. The 'Yukon 2000' project on the Yukon's economy is an example of how both substance and process might be organized to formulate an AES. Both territorial legislatures and the federal government, if it participated, could then endorse a shared strategy.

3. *Aboriginal Initiative*

A coalition of aboriginal organizations could undertake a comprehensive review of the AES and re-design it in keeping with their ongoing strategic initiatives. The pioneering work of the Inuit Circumpolar Conference on an environmental strategy for Inuit homelands, along with the efforts of the Council of Yukon Indians, and the Dene and Métis of the Mackenzie Valley, are evidence of both interest and capability. The conservation and management arrangements of Native land claims provide both experience and mechanisms on which to build an aboriginal-led initiative. Such an undertaking would involve non-aboriginal interests including governments, round tables, industry, scientists and environmental organizations. ICC's consultative Arctic Policy Conference (Stenbaek 1985), where numerous interests came together in workshop and conference formats to con-

tribute to the ICC Arctic Policy, might provide one method of strategy development.

4. *Canadian Polar Commission*

The newly established Polar Commission could assert its presence as a key policy instrument by placing the question of an Arctic Environmental Strategy on its initial agenda. As an advisory body, it has some flexibility in both the issues it takes on and its approach to them. The Commission could act as a facilitator or broker, by bringing together the several legitimate interests to build a better strategy. The Commission's membership, which includes northern, aboriginal, scientific, administrative and academic interests, has the opportunity to bring breadth and integration to the design of such a strategy. The Commission's on-going role in promoting polar information systems would be well served by designing an AES since such an exercise would provide it with a better sense of the information needs for sustainable arctic futures.

5. *Commission of Inquiry*

Wiseman (1991) suggests the establishment of a commission of inquiry under the Inquiries Act to develop an arctic environmental strategy. The members of the commission would be jointly appointed by the Government of Canada, the Government of Yukon, and the Government of the Northwest Territories. The commission would report to all three governments, more specifically to the ministers of the Department of Indian Affairs and Northern Development and the Departments of Renewable Resources in the two territories. While such a mechanism is still advisory rather than decision making, the formality and requirements possible under the Inquiries Act lend significance to the process and could signal commitment upon the part of governments to pursue the development of an AES in a more balanced, comprehensive and participatory manner.

A recurring problem in Canada has been our collective incapacity to break out of rigid, fragmented and specialized organizational sets, instead creating interest-based and social learning-based, multi-actor systems for environmental

policy making and problem-solving (Francis 1986, 1988; Mulvihill and Keith 1989; Mulvihill 1990; Keith and Mulvihill 1991). Much of the persistent discord surrounding arctic environmental policy has its roots in exclusionary organizational arrangements. The federal government's consultation process for the Canadian Arctic Environmental Strategy is yet one more case in point (Wiseman 1991). The five options suggested above are selected, in part, for the opportunities they offer to be much more pluralistic and representative. The failure to design an AES that is founded upon the principles of sustainability and the genuine involvement of all the key interests will be unlikely to achieve the strategic goals of human and ecological sustainability.

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