

Northward Looking — A Strategy and a Science Policy for Northern Development

Science Council of Canada Report No. 26

The report here reviewed is the outcome of one of the first regionally-oriented studies of the Science Council of Canada, a public body which in its own words "... has a responsibility to advise society about major impending technology-based hazards and opportunities where technology assessments are appropriate". In carrying out the study the Council followed in large measure the method of technology assessment system in which one attempts to identify the major participants (or actors) and the main matters at issue in relation to a given program or project. Together with the report itself there are eight related essays.

Letters, reproduced in the report, which passed from the Committee on Northern Development to the Science Council, and from the Council to the responsible government Minister, provide an interesting insight into the dilemmas and problems encountered during the course of the study. In its introductory observations the Council clearly acknowledges "its largely vicarious experience in the North" and also indicates how changeable have been its attitudes towards the development of the region. The production of the study was by all appearances a revealing process for the Council. As background to the study it is worth recalling that during the early and middle years of the present decade a number of events occurred which were, and are, destined to have a considerable influence on the course of northern developments, although not seen as such at first; they include the OPEC oil embargo, the advent of native land claims, new technologies for the exploration and exploitation of energy resources on land and off-shore in the Arctic regions, and the gradual emergence of a conservation philosophy. In the face of such rapidity of political and economic change one cannot expect a very high "predictability factor" in future studies of this kind.

The Council approached its study of development in the North (an area they defined as comprising well over 50 per cent of Canada's land mass and including the northern parts of most of its provinces) by (1) undertaking a review of past resource developments there and their related government policies and (2) commissioning five case studies, all dealing with large, recent projects involving non-renewable resources. It analyzes later the subject of Canadian control over the technologies used in northern development and the special problem of marine transportation of natural gas from the Arctic.

Although this approach is related to a broad definition of "development", all the case studies — and in fact the entire initial thrusts of the whole study — represent examples of development of one kind only, that is to say, those resulting in marked changes to the land and to the social environment. Might

not, however, a case study or two based on a "non development" situation have been included? Examples that come to mind are the designation of new national parks in the North, the natural harvesting of renewable resources, or the decision simply to set aside vast areas of the North for future generations to think and plan for.

A flaw in the Council's basic methodology appears to have been a failure to recognize adequately the primary role of political, social and economic factors in shaping scientific and technological activities, and a tendency to overemphasize the importance of large projects for energy production and mineral extraction, and the related powers of corporative and bureaucratic actors. These considerations are alluded to, in a somewhat ambiguous fashion, early in the report and probably account for the general thrust of the major recommendations of a strategy of mixed development and of Canadian technological sovereignty as a means of pacing and controlling northern development. Here one may remark that changes in the values southern society attaches to the use of energy and other resources such as land, the concept of leisure, as well as society's attitudes towards the importance of cultural minorities and their aspirations, will all have an effect on the type and pace of development that is allowed to proceed in the North. To this extent the Science Council study appears not to have taken into consideration or forecasted the major future trends in society over the whole of Canada. These trends are in fact analyzed in another Council study (of the "conserver society") which is discussed below.

The first two chapters of the Council's report here reviewed are devoted largely to a general geographic description of the North, its people and its political and socio-economic development in which some circumpolar comparisons are briefly made. In these two chapters support is given to the recommendations contained later in the report through an emphasis on the diversity of the North in terms of its physical, biological and human environments. In addition a key point is made, often overlooked in the continuing debate about Canada's distinctive self-image, or lack of it, that Canada is simply "a large northern country". It is this "nordicity", ingrained in the Canadian psyche, that the Council may have misjudged, or underestimated, during the early stages of their study. In the two background chapters allusion is also made to a number of contemporary trends that undoubtedly loom large in the future development of the North, such as: the role of public enterprises engaged in resource projects; the development of new governmental institutions that give greater recognition to local developments and local autonomy; the emerging importance of intermediate technologies, and a more self-sufficient northern economy; and the impact of the Canadian-unity debate on the policies of northern political and economic self-determination. These trends are significantly different from the range of assumptions which seem to form the terms of reference of the Council in making the study, and they illustrate the great shifts in the thinking of society that have occurred over the past several years.

One of the Council's most important recommendations is contained in the chapter on "Strategy of Mixed Development". Herein is explored the notion that a balance can and should be achieved between the apparently conflicting trends of large scale exploitation of natural resources, and the trend towards a small scale locally controlled economy based on renewable-resource harvesting and greater emphasis on the use of traditional skills. In the Council's view such a policy of mixed development would require greater emphasis on technological self-sufficiency, increased political and economic independence and improved methods of public assessment of development projects. Above all, the Council recognizes in this chapter that a diversified approach is required to solve the wide range of northern socio-economic problems and that there exists in the North a man-land relationship whose value needs to be considered, and measured if possible, in terms that transcend the monetary. A further recommendation is that the principles of life-style flexibility and standards of environmental acceptability and monitoring should guide science policies in the North. The Council also opts for "technological sovereignty" (which seems likely to become a new buzz-word in northern development), i.e., the promotion of technologies that will increase Canada's ability to control and benefit from development in the North.

Two chapters of the report are devoted to certain initiatives that are in the Council's view required to support the recommended strategy of mixed economic development. These include enlarged roles for the universities in finding solutions to northern problems and the establishment of a University of the North. The Council also urges that special attention be given to the assessment of renewable resources in the North and the development of technological capabilities towards that end. Greater participation by Canadian public corporations is advocated for the enhancement of technological sovereignty.

The overall impression given by this report is that the Council undertook its study on the basis of several initial premises which soon proved to be weak, if not false. That is they failed to foresee the rapid changes which were underway even as they began their work. As noted previously these changes were primarily social, economic and political, not technological. The Council also underestimated the strength and importance of the renewable-resource economy among northerners; they failed to perceive the trend in Canadian society away from bigness — i.e. the strength-in-diversity syndrome — and they misjudged the impact of public inquiries and the degree of public interest in, and knowledge about, the North. In addition, the Council's original methodology was suspect, partly because people had great difficulty in relating the technology-assessment concept to a regional-development study where the major parameters were social, cultural, economic and political. Finally, the Science Council as constituted may not have the social science expertise, or outlook, required to undertake regional studies where the main science-policy considerations are likely to be non-technological.

The resulting reports on the North, (at least one other was issued without the official endorsement of the Council), create the impression of being disorganized. In the report here reviewed, for example, the major recommendation for a strategy of mixed development (which for some unknown reason is referred to as a science policy and not an economic policy), is considered and discussed somewhat repetitiously under four chapter headings, and numerous recommendations to support such strategy are interspersed throughout the report instead of being combined in a single chapter. The same comments can be made concerning other important matters, such as technological sovereignty and project-assessment techniques. The report clearly could have benefited from additional editing, although even that might not have been enough to dispel the impression that it was written by a committee that never could really agree either on what they were discussing or on the implications of their conclusions. The report's major recommendations are certainly far-reaching in their likely impact, if implemented, on Canada, northern and southern; yet that impact is not even referred to in the report being reviewed, but rather in a companion Science Council report.⁽¹⁾ Questions arising are, for example: what would be the full consequences of the development of a strong mixed economy; how self-sufficient could the North become if it were to develop and control more of its own food production and other basic life-support systems by the use of intermediate-type technologies such as country-food harvesting, greenhouse gardening, wood-stove heating, local production of log houses, etc., all of which are possible in many parts of the North; how would an increased awareness and attainment of personal self-sufficiency in the basic necessities of life affect individual and collective attitudes in such areas as population dynamics, health and education, settlement patterns, and political affairs?

Self-sufficiency implies a decentralization of responsibilities, localized control, direction and planning and so on, whereas the present northern social, political and economic structures, are mostly (representative of) an industrialized "southern" society where centralized planning and direction, and relatively inflexible policies and programs are employed. To carry this thought a bit further, if a mixed economy will work in the Canadian North, will the major elements of such an economy work also in many other parts of the country? One could make the same comments concerning the question of technological sovereignty. Do the justifications for such a policy in the North not have equal validity in southern Canada? The point is that with certain exceptions, most notably the increasing emphasis on renewable resource harvesting, many of the Council's recommendations could with modifications be equally relevant in other underdeveloped regions of Canada. It is in this context that one should refer to the Council's other major report on the emergence of a "conserver society" in Canada, which urges a transition

¹ Canada as a Conserver Society, Resource Uncertainties and the need for new Technologies. Science Council of Canada Report No. 27, September 1977.

towards a more self-sustaining economy and greater selectivity and caution in choosing future patterns of economic growth. Other basic initiatives or policies recommended by the Council in this latter report include diversity and flexibility in human activities and institutions, and greater decentralization of responsibility and efficiency in the use of local resources.

It is significant that the processes of land-claim settlement in the North among the original peoples of Canada provide some of the best examples of the promotion and testing of the social-engineering ideas, just referred to. For example, in the areas covered by the James Bay and Northern Quebec Agreement, where country food is harvested by the Inuit, a considerable degree of food self-sufficiency already exists; while among both the Cree and the Inuit alternative development strategies (using local labour, materials and intermediate technologies) are being pursued which will greatly increase the possibilities of the achievement of economic autonomy. In this connection it may be noted that in the Council's observations concerning a mixed economy very little indication is given of the degree to which economic self-sufficiency already exists in the North, and few specific suggestions are provided of what major initiatives are required in further support of it, — except that more work be done on the inventorying of renewable resources. One will not find in the report here reviewed even a vague picture of how the present mixed economy is working, or even the relative importance and status of its major components. For instance, there is no reference to the potential of tourism, (as a renewable resource), in the North, even though in many areas, such as the Yukon, this activity already constitutes one of the largest components of the economy. The possible effect of native land claims on the proposed mixed economy is also largely ignored, even though there is sufficient evidence that in Alaska the settlement of these claims is already influencing the development of Alaska very significantly. It should be clear that similar impacts will be felt in Canada. These events may cause the Council's suggested policies to be modified considerably. Land claims and tourism do not, however, even appear as significant headings in the index to its report which seems to contain mostly references to the same "principal actors" and institutions the Council had in mind when it began its study over three years ago.

In spite of these and other shortcomings the Science Council has produced an enormously interesting report which should serve to stimulate further analysis and discussion. Looking especially at its original approach to the study of northern development, one could easily get the impression that it had decided the easiest way to avoid the target (the real issues) was intentionally to mistake (its) location. On the other hand, critics of the Council's approach may not necessarily be wiser, only later! Nevertheless, the reader may still wonder how the Council managed to avoid being led astray by its technology-assessment methodology, because the report's main conclusions come close to providing a reasonable and attainable northern development strategy for the foreseeable future. It might be said that the study process may

have been terrible science, but the results are a fairly accurate reflection of the times.

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