

Environment, Culture, and Change in the Arctic

Academy outlines research for region neglected by social science

THE REGIONS of the circumpolar North comprise 10% of surface area of the globe and 8 million people, 25% of them natives. With its thin population and great wealth of natural resources, almost all the research on the Arctic has been conducted by physical and biological scientists.

Now, however, because of growing social and economic dislocations in the Arctic and increasing scientific concern with "anthropogenic" stresses on the environment and resources, the Polar Research Board of the National Academy of Sciences has produced a report outlining a research agenda for social sciences in the Arctic. The region is "of great and growing significance," says Oran Young of Dartmouth College, who co-chaired the Committee on Arctic Social Sciences with Mim Dixon of Chief Andrew Isaac Health Center in Fairbanks, Alaska.

The report is designed to provide a coherent rationale for social and behavioral research for a 5-year plan, now under revision, mandated by the Arctic Research and Policy Act of 1984.

The circumpolar Arctic is shared by eight nations, dominated by the Soviet Union which has 75% of the Arctic population. The report points out that the Arctic has several identities—as homeland for the natives, as a "colony" exploited for its natural resources, and as the "last wilderness." Each "gives rise to a distinctive approach to human-environment relationships." These approaches have come increasingly into conflict as subsistence hunters and commercial interests vie for limited stocks of fish and game; communities are shaken by boom and bust cycles in scrambles for mineral resources; and rapid modernization has inflicted trauma on native cultures.

Social science has been largely ignored in arctic research. "Most social scientists share the perception that funding for basic re-

search in the Arctic is virtually nonexistent," says the report. The National Science Foundation's Division of Polar Programs had a budget of \$21.6 million for 1988—\$62,000 for social science. International coordination is lacking, data from different countries lack comparability, and much information is contained in "gray literature"—little seen government reports lacking peer review and filled with undigested data. Individual researchers work in isolation and most research is in the form of case studies with little generalizability.

The committee proposes a research agenda organized along three themes:

■ Human-environment relationships:

Arctic dwellers live close to the margin in a delicate ecosystem that is essentially a desert. Low precipitation levels make many areas a sink for air pollutants and "arctic haze" is a growing problem, much of it from industrial activity further south. Animal and marine resources pose complex management problems because populations fluctuate widely and many migrate across jurisdictional boundaries. Conflict resolution is necessary

to balance commercial needs with those of subsistence hunters, sportsmen, and conservation.

■ **Community viability:** In the 1970s, says the report, "the sustaining basis for the arctic economy was popularly viewed as megaprojects related to resource extraction." The Alaskan economy is heavily based on oil, as it is in Northwest Siberia, which produces 60% of the Soviet Union's oil and gas. Now, with the decline in world oil

prices, the North Slope has much in common with Texas, with a soaring debt problem. Single-industry communities must adjust as their economic base changes. Most communities have inadequate cash-producing sectors and must develop opportunities for economic diversification. A systematic approach is needed for the development of physical and social services infrastructures, all of which are more difficult in the arctic climate.

■ **Rapid social change:** Natives are paying a heavy price, culturally, economically, and psychologically, as changes that have taken centuries in other parts of the world "have in many cases been telescoped into a generation." The cash economy has completely infiltrated in the past generation. Natives raised in communities based on subsistence hunting, gathering, and

fishing have been thrust into the 20th century. The snowmobile has transformed life as dramatically as the rifle did a century ago, says anthropologist Ernest Burch. Oral culture has been lost with the advent of television. The high mobility of workers and the seasonal or intermittent nature of many jobs create stress and loneliness, and have resulted in high rates of illness, accidents, and violence. Native people in particular have alarmingly high rates of alcoholism and suicide.

The report says the emphasis in research should be on interdisciplinary studies and those linking the social and physical sciences and basic with applied research; should draw on native knowledge, put priority on urgent issues such as cultural survival and the allocation of scarce resources, and provide models generalizable to other areas.

The committee recommends that the NSF be established as the lead agency for arctic social science research, to coordinate activities by other government agencies, and start a training grant program to develop a cadre of researchers. ■ **CONSTANCE HOLDEN**

