

For the past 20 years, NRC physicists have collaborated with the Bedford Institute of Oceanography in Dartmouth, NS, other government institutions and Canadian high technology companies to develop a wide range of oceanographic instruments. One result was a Canadian system for rapid ocean-related data gathering which carries equipment to gather facts about temperature, the salt content of sea water and the concentration of plankton. Called the BATFISH, the system is towed at a set rate, diving and rising from the surface to a depth of 300 metres to make continuous measurements.

Extensive offshore exploration has taken place for oil and gas development. An offshore Labrador biological studies program has been started to complement environmental studies already undertaken by industry and government.

#### **14.1.10 Scientific and technical information**

Supplying scientific and technical information (STI) to users in Canada is made difficult by such factors as a small population distributed over large distances, a pluralistic society with two official languages, multiple levels of government and the need for an industrialized country to maintain coverage of virtually all fields of S&T although producing only a small percentage of the world's output.

The Canada Institute for Scientific and Technical Information (CISTI) holds the largest collection of STI in Canada, drawing on the world's S&T literature through science libraries and related systems and services. CISTI is part of the National Research Council which operates the federal government's largest multidisciplinary R&D laboratories. The institute's strengths in the natural sciences and engineering are complemented by other federal collections such as those of the National Library of Canada in the social sciences and humanities and of the Geological Survey of Canada.

Agriculture Canada has a network of over 20 branch libraries across the country, with a headquarters library in Ottawa as the hub. There is also a co-operating network of university libraries. Many scientific and special libraries have grown up in response to institutional needs and there is a great deal of co-operation and interdependence in interlibrary loans. Other S&T information is based on specialized data collections, such as a national index to sources of geoscience data of the energy, mines and resources department and a water resources document centre operated by the environment department. Increasing use is being made of various computerized information systems that are available commercially. Over 9 million citations from 15 data bases can be accessed in either French or English, through some 525 communications terminals across the country.

NRC also provides a technical information service (TIS) oriented to the needs of small and medium-sized manufacturing businesses with few or no technical staff or resources of their own. It receives from 20,000 to 25,000 inquiries annually and provides in-depth assistance for 500 to 700 firms. TIS operates through a network of field offices across Canada, and has been expanded to help small manufacturing firms undertake longer term productivity improvement projects. Budget increases have enabled TIS to give financial support to senior students in science and engineering so that they can provide industrial assistance under supervision of university professors.

#### **14.1.11 Social development**

Science activities in the social development field provide information for federal policy decisions over a wide range of areas: education, labour, manpower training and employment, population control, housing, consumer safety and health standards, community development and social welfare. Some of the goals of the policy initiatives are: improving welfare services, providing training for a more capable and flexible work force, increasing employment and improving the standard of living, measuring the implication of new technologies, and studying the growth of urban communities and its impact on transportation and housing.

Research in economics, sociology, education, demography, anthropology and other social disciplines has contributed toward the analysis of issues facing Canadian society. For example, problems linked to unemployment among youth and skilled manpower have been extensively studied. Labour Canada has conducted research related to sick leave and handicapped workers and a survey of hours of work and time-budgets in