

social and economic problems. These programs include a space program for Canada, water resources management and development, transportation, urban development, computer applications and scientific and technological aid to developing areas of the world.

In 1967, a Special Senate Committee on Science Policy was formed to consider and report on the scientific policy of the federal government and to appraise its priorities, organization, budget and efficiency. The first volume of its report, published in December 1970, describes what the Committee considered to be major deficiencies in the policy and the second, published in January 1972, contains specific recommendations on targets and strategies for the 1970s. The final volume recommended specific changes in the federal structures concerned with science and technology.

The Ministry of State for Science and Technology is responsible for developing and formulating policies for the optimum development and application of science and technology in Canada; reviewing and assessing scientific and technological activities and programs within the federal government; and strengthening co-operation among the federal government and the provinces, public and private organizations and with other nations. The Ministry has three branches: Policy, Program Review and Assessment, and Co-operation.

The Policy Branch is concerned with the development and recommendation of objectives and priorities for science and technology, the development and formulation of related policies, the provision of advice and counsel on the scientific and technological implications of government policies or proposals, and the assessment of the impact of science and technology on Canadian society.

The Program Review and Assessment Branch is responsible for the formulation of science expenditure guidelines; the provision of systematic advice and support to departments and agencies in the development of their budgetary proposals relating to science and technology; and the review of these proposals in conjunction with the Treasury Board. The Branch develops and promotes improved methods of evaluating the effectiveness of scientific and technological policies, programs and management techniques and, later, will analyze federal expenditures on science and technology.

The Co-operation Branch produces correlated data on Canada's scientific and technological resources and activities; facilitates the exchange of information on domestic and international policies, programs and activities; and develops the policies and co-ordinating mechanisms necessary to ensure that Canada obtains maximum benefits from participation in related international organizations and activities.

The Make-or-Buy policy, introduced in 1972, provides that, where possible, all new research and development requirements of the federal government will be contracted out to industry rather than be carried out in government laboratories. The policy is intended to ensure that R&D results are translated more effectively into additional Canadian industrial capacity. As an adjunct to this policy, provision has been made for the funding of unsolicited research proposals from outside the government.

In July 1973, a new policy was introduced for the development and control of off-shore resources. This policy is designed to encourage participation by Canadian industry to ensure Canadian control of these resources. Special emphasis will be given to a wide range of marine science and technology programs. The Oceans policy, now being implemented, will develop the capability to operate on or below ice-covered waters to assist in the development of off-shore resources.

## **9.2 Federal activities in the natural sciences**

Activities in the natural sciences involve the accumulation of knowledge of physical and natural phenomena and the practical application of such knowledge. This includes the life (biological and medical), physical, environmental, mathematical and engineering sciences.

### **9.2.1 Expenditures**

In the fiscal year 1973-74 expenditures by the federal government for scientific activities in the natural sciences exceeded \$1 billion (see Table 9.1). Science expenditures have more than tripled since 1965; current expenditures increased at an average annual rate of 13% with the most rapid growth occurring in the first four years of the period. However, the real growth of scientific activities is probably less than indicated as expenditure data are in current dollars