

Estimated 1986-87 expenditures in this field of science were \$894 million with 80% for RSA and 20% for R&D.

The bulk of the RSA expenditures was planned for data collection, dominated by the statistical activities of Statistics Canada. About 90% of the expenditures on RSA are performed intramurally. In R&D, 37% of the expenditures are intramural with 31% being spent in the university sector, primarily as a result of the activities of the Social Sciences and Humanities Research Council.

Expenditures on social sciences and humanities are affected by the quinquennial censuses. The increase of 14% for 1986-87 spending is due to the 1986 Census.

Human resources devoted to S&T in 1986-87 were 8,148 person-years for RSA and 675 for R&D.

Further details for the five largest participants are provided in section 12.3.

12.2 Major participants in natural sciences and engineering

Five federal departments and agencies fund 58% of the total activities in natural sciences and engineering. The scientific and technological endeavours of these departments and agencies cover a broad range of activities including in-house facilities for industry research, support for industrial development, support for basic research and training of scientific personnel, and performing of research in support of departmental missions.

12.2.1 National Research Council

Created in 1917, the National Research Council (NRC) has an objective to create, acquire and promote the application of scientific and engineering knowledge to meet Canadian needs for economic, regional and social development. With estimated expenditures of \$443 million in 1986-87, it is the largest federal spender on S&T activities. The total overall growth of NRC expenditures has been about 55% since 1981-82, however, expenditures have decreased 8% since 1984-85. NRC expects to spend about 72% of its 1986-87 budget intramurally, 17% in the industrial sector, 7% in the university sector and the balance among other performers.

NRC covers a wide range of scientific and technological activities in the following six areas: national competence in the natural sciences and engineering; research on problems of economic and social importance; research in direct support of industrial innovation and development;

national facilities; research and services related to physical standards; and scientific and technical information. The research laboratories are contained in the divisions of biological sciences, building research, chemistry, electrical engineering, energy, mechanical engineering and physics, and in the Canada Centre for Space Science, the Herzberg Institute of Astrophysics and the National Aeronautical Establishment.

NRC also operates a series of regional laboratories:

- The Institute for Marine Dynamics at St. John's, Nfld.,
- The Atlantic Research Laboratory at Halifax, NS,
- The Industrial Materials Research Institute in Boucherville, Que.,
- The Plant Biotechnology Institute in Saskatoon, Sask.,
- The Western Laboratory in Vancouver, BC,
- The Biotechnology Research Institute in Montreal, Que.

In addition to its laboratory facilities which are used to perform research in support of NRC's mission, and under contract to the private sector, NRC operates the Industry Development Office. This Office was expected to provide an estimated \$70 million in 1986-87 in grants and contributions to industry through two industrial support programs: an industrial research assistance program (IRAP) and a program of industry laboratory projects (PILP).

IRAP provides a wide range of support by paying salaries for researchers for specific projects in small- and medium-sized businesses, and by providing technical advice to firms. These services are delivered to industry by a series of regional offices across the country, some of them operated under contract by the provincial research organizations (see section 12.5). PILP is designed to assist companies in technology transfer from both government and university laboratories.

Under the scientific and technical information program, NRC operates the Canada Institute for Scientific and Technical Information (CISTI).

12.2.2 Agriculture Canada

The federal department of agriculture (Agriculture Canada) with estimated spending of \$426 million is the second largest spender in natural sciences and engineering. The bulk of Agriculture Canada expenditures, 86%, was planned for R&D with 95% being performed intramurally. Only 3% of the department's expenditures were in the industry sector and 2% in the university and other sectors.