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Symbols

The following standard symbols are used in Statistics Canada publications:

.	not available for any reference period
..	not available for a specific reference period
...	not applicable
0	true zero or a value rounded to zero
0s	value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
p	preliminary
r	revised
x	suppressed to meet the confidentiality requirements of the *Statistics Act*
E	use with caution
F	too unreliable to be published

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Data quality, concepts and methodology

Highlights

Scientific and Technological (S&T) activities of Provincial Governments and Provincial Research Organizations, 2001/2002 to 2005/2006

This report includes scientific and technological (S&T) activities involving the generation, dissemination and application of new scientific and technological knowledge. The main activity is research and experimental development (R&D). Related scientific activities (RSA) are also included.

Ontario, Manitoba, Alberta and British Columbia participate in surveys of their provincial governments' science and technology activities which are conducted with Statistics Canada. The provincial government of Québec conducts a survey of its R&D activities the results of which it shares with Statistics Canada. This report presents the results of these surveys as well as S&T activities of Provincial Research Organizations (PRO).

- In 2005/2006, total expenditures on scientific activities by the four provinces varied by objectives. For all four provinces, protection and improvement of human health was ranked as one of the top three S&T expenditure objectives as determined by amount spent (table 5).
- Of the four provinces, British Columbia had the largest S&T expenditure increase at 40.4% (table 3-1). This increase reflects higher S&T spending in both the natural sciences at 25.2% (table 3-3) and the social sciences, 72.3% over the previous year (table 3-7).
- In 2005/2006 the distribution of science and technology (S&T) expenditures varied by province. Intramural S&T expenditures predominated in Manitoba (69%) and Alberta (52%). Ontario allocated 47% of its total S&T expenditures to the higher education sector and 30% on intramural spending. For British Columbia, 29% of S&T expenditures went to intramural spending and 42% to other S&T performers including municipal governments, individuals and other institutions not identified in the performing sectors (table 3-2).
- In 2005/2006 Québec showed an increase of 2% over the previous year to reach $423.9 million in R&D expenditures for the province. Only Ontario had a smaller increase. All other provinces showed larger increases in R&D expenditures with Manitoba at 4.7%, Alberta at 4.2% and British Columbia at 70.9% (table 3-1).
- In 2005/2006 total expenditures of provincial research organizations (PRO) on scientific activities reached over $72 million, an increase of 1.7% over the previous year (table 14).

Analysis

Scientific and Technological (S&T) activities of Provincial Governments and Provincial Research Organizations, 2001/2002 to 2005/2006

The 2005/2006 preliminary science and technology (S&T) expenditures for the provincial governments of Ontario, Manitoba, Alberta and British Columbia indicate that this spending is increasing (table 3-1).

The provinces allocate their S&T expenditures by socio-economic objectives. These objectives are:

- Exploration and exploitation of the earth
- Infrastructure and general planning of land use
- Control and care of the environment
- Protection and improvement of human health
- Production, distribution and rational utilization of energy
- Agriculture production and technology
- Fishing
- Forestry
- Industrial production and technology
- Social development
- Exploration and exploitation of space
- Basic research
- Other civil research

In 2005/2006, total expenditures on scientific activities by the four provinces varied by objectives. For all four provinces, protection and improvement of human health was ranked as one of the top three S&T expenditure objectives as determined by amount spent (table 5).

Manitoba alone amongst the four provinces did not indicate that basic research was in their top five spending priorities for S&T objectives based on amount spent. Manitoba's primary focus for S&T expenditures was on social development followed by infrastructure and general planning of land use (table 5).

Alberta's top five S&T expenditures by objective were protection and improvement of human health; basic research; production, distribution and rational utilization of energy, agriculture production and technology; and infrastructure and general planning of land use.

British Columbia's priorities for S&T activities were concentrated in basic research and protection and improvement of human health. Ontario indicated that these two activities were also its most important priorities, along with social development (table 5).

For Ontario, Manitoba, Alberta and British Columbia total expenditures on their provincial governments' science and technology activities are available. Scientific and technological (S&T) activities involve the generation, dissemination and application of new scientific and technological knowledge. The first component is research and experimental development (R&D). Related scientific activities (RSA) comprise the other component. S&T expenditures can also be categorized by science type, social sciences and the humanities and natural sciences and engineering and the report provides this information for the four provinces.

Provincial government research and development expenditures in the natural sciences and engineering are available for five provinces, Québec, Ontario, Manitoba, Alberta and British Columbia. In 2005/2006, Albertan government led the five provinces in the amount it spent on intramural R&D in the natural sciences and engineering at $121.8 million whereas the Québec government funded the highest amount of R&D in the business enterprise sector, $25.1 million (table 3-5).

In 2005/2006, the provincial government of Alberta dedicated 674 full-time equivalents to its R&D activities in the natural sciences and engineering of which 104 worked on administering extramural programs for R&D. Québec's provincial government followed with 540 full-time equivalents working on R&D activities in the natural sciences and engineering with 155 performing tasks related to administering extramural R&D programs (tables 12-3 and 12-4).

In 2005/2006 Québec showed an increase of 2% over the previous year to reach $423.9 million in R&D expenditures for the province (table 3-1).

Québec had more full-time equivalent scientists and professionals engaged in research and development than any other Canadian province with 441. Ontario followed with 289 followed by Alberta with 253 (table 13).

This report also presents the results of the S&T activities of Provincial Research Organizations (PRO).

In 2005/2006 total expenditures of provincial research organizations (PRO) on scientific activities reached over $72 million, an increase of 1.7% over the previous year (table 14).

More than 80% of Canada's $72.0 million in S&T expenditures by provincial research organizations occurred in the provinces of Manitoba and Saskatchewan. The PRO in Manitoba accounted for $32.1 million and for $26.2 million in Saskatchewan (table 14).

Canadian industrial contracts provided 43% of all funding for the scientific activities of the provincial research organizations, while provincial government contract, subsidies, grants and contributions provided 44 % of PRO funding.

Related products

Selected publications from Statistics Canada

88-202-X	Industrial Research and Development...intentions
88-204-X	Federal Scientific Activities
88-522-X	Science and Technology Activities and Impacts: A Framework for a Statistical Information
88F0006X	Science, Innovation and Electronic Information Division Working Papers
88F0006X2001005	Provincial Distribution of Federal Expenditures and Personnel on Science and Technology 1990-91 to 1998-99
88F0006X2002008	Provincial Distribution of Federal Expenditures and Personnel on Science and Technology, 1991-92 to 1999-2000
88F0006X2003008	Provincial Distribution of Federal Expenditures and Personnel on Science and Technology, 1994-95 to 2000-2001
88F0006X2004005	Provincial Distribution of Federal Expenditures and Personnel on Science and Technology 1995-1996 to 2001-2002
88F0006X2005002	Provincial Distribution of Federal Expenditures and Personnel on Science and Technology, 1996-1997 to 2002-2003
88F0006X2005019	Estimation of Research and Development Expenditures in the Higher Education Sector, 2003-2004
88F0017M	Science, Innovation and Electronic Information Division Research Papers

Selected technical and analytical products from Statistics Canada

88F0017M1999006	Diffusion of Biotechnologies in Canada: Results from the Survey of Biotechnology Use in Canadian Industries
88F0017M2000008	Explaining Rapid Growth in Canadian Biotechnology Firms
88F0017M2001009	Internationally Comparable Indicators on Biotechnology: A Stocktaking, a Proposal for Work and Supporting Material
88F0017M2001010	Analysis of the Survey on Innovation, Advanced Technologies and Practices in the Construction and Related Industries, 1999

88F0017M2001011	Capacity to Innovate, Innovation and Impact: The Canadian Engineering Services Industry
88F0017M2001012	Patterns of Advanced Manufacturing Technology (AMT) Use in Canadian Manufacturing: 1998 AMT Survey Results

Selected CANSIM tables from Statistics Canada

358-0001	Gross domestic expenditures on research and development, by science type and by funder and performer sector, annual
358-0024	Business enterprise research and development (BERD) characteristics, by industry group based on the North American Industry Classification System (NAICS), annual
358-0026	Intellectual property management, by federal departments and agencies indicators, annual

Selected surveys from Statistics Canada

4201	Research and Development in Canadian Industry
4204	Research and Development of Canadian Private Non-Profit Organizations
4208	Provincial Research Organizations (PRO)
4209	Provincial Government Activities in the Natural Sciences
4212	Federal Science Expenditures and Personnel, Activities in the Social Sciences and Natural Sciences

Selected summary tables from Statistics Canada

- *Research and development performed by the business enterprise sector*
- *Domestic spending on research and development (GERD), funding sector, by province*
- *Domestic spending on research and development (GERD), performing sector, by province*
- *Domestic spending on research and development (GERD)*

Statistical tables

Table 1
Provincial indicators, 2004

	Population	Provincial Gross Domestic Product	Gross Domestic [1] Expenditures on Research and Development	Gross Domestic [1] Expenditures on Research and Development over Provincial Gross Domestic Product	Gross Domestic Expenditures on Research and Development over Capita
	thousands	millions of dollars		ratio	dollars
Canada [2]	**31,989**	**1,290,788**	**26,003**	**2.0**	**813**
Newfoundland and Labrador	517	19,473	169	0.9	327
Prince Edward Island	138	4,027	40	1.0	290
Nova Scotia	938	29,859	446	1.5	475
New Brunswick	752	23,487	222	0.9	295
Quebec [3]	7,549	262,988	7,161	2.7	949
Ontario [3]	12,417	517,608	11,720	2.3	944
Manitoba	1,170	39,825	519	1.3	444
Saskatchewan	995	40,021	422	1.1	426
Alberta	3,207	188,865	2,053	1.1	640
British Columbia	4,203	157,540	2,282	1.4	543

1. Total spending on research and development in Canada, 1991 to 2006[p] and provinces, 1991 to 2004, 88-001-XIE Vol. 30 No. 7 or in CANSIM, table 358-0001.
2. Includes the Yukon Territory, Northwest Territories and Nunavut, and the National Capital Region (see note below).
3. Quebec and Ontario Gross Domestic Expenditures on Research and Development figures exclude federal government expenditures of $960 million performed in the National Capital Region.

Source(s): CANSIM, table 051-0005 and table 384-0002.

Table 2
Provincial distribution of gross expenditures on research and development by performing and funding sectors, 2004/2005

	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec [1]	Ontario [1]	Manitoba	Saskatchewan	Alberta	British Columbia	Subtotal [2] Canada	National Capital Region	Total [2] Canada
	millions of dollars												
Performing Sector	**169**	**40**	**446**	**222**	**7,161**	**11,720**	**519**	**422**	**2,053**	**2,282**	**25,043**	**960**	**26,003**
Federal government	23	10	81	26	320	329	73	54	110	91	1,123	960	**2,083**
Provincial governments	5	0	6	2	68	86	4	4	113	13	301	0	**301**
Provincial Research Organizations	0	0	0	2	14	0	0	9	0	0	25	0	**25**
Business enterprise	26	6	89	75	4,308	7,457	165	111	892	1,039	14,441	0	**14,441**
Higher Education [3]	115	24	270	117	2,451	3,848	277	244	938	869	9,153	0	**9,153**
Funding Sector	**169**	**40**	**446**	**222**	**7,161**	**11,720**	**519**	**422**	**2,053**	**2,282**	**25,043**	**960**	**26,003**
Federal government	60	19	157	58	1,057	1,327	148	124	339	427	3,721	945	**4,666**
Provincial governments	7	1	15	7	436	489	28	36	325	62	1,406	1	**1,407**
Provincial Research Organizations	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Business enterprise	33	5	78	79	3,889	6,515	167	120	903	936	12,729	14	**12,743**
Higher Education [3]	63	15	166	76	1,280	2,078	161	134	410	472	4,855	0	**4,855**
Foreign	6	0	30	2	499	1,311	15	8	76	385	2,332	0	**2,332**

1. Quebec and Ontario figures exclude federal government expenditures performed in the National Capital Region.
2. Includes the Yukon Territory, Northwest Territories and Nunavut.
3. Includes private non-profit institutions.

Table 3-1
Total expenditures of provincial governments on scientific activities — By activity

	2001/2002 r	2002/2003 r	2003/2004 r	2004/2005 r	2005/2006
	thousands of dollars				
Science and technology					
Ontario	653,657	643,792	721,773	768,852	776,302 p
Manitoba	54,185	66,166	79,869	78,721	85,635
Alberta	317,744	333,421	313,546	326,633	381,769
British Columbia	240,602	297,707	260,153	230,163	323,101
Research and development					
Quebec 1	426,353	412,961	559,537	415,774	423,949
Ontario	412,788	406,327	473,871	444,830	426,784 p
Manitoba	20,545	19,639	23,495	26,133	27,372
Alberta	245,295	248,785	241,407	263,370	274,501
British Columbia	93,555	175,814	163,386	130,198	222,561
Related scientific activities					
Ontario	240,869	237,465	247,902	324,022	349,518 p
Manitoba	33,640	46,527	56,374	52,588	58,263
Alberta	72,449	84,636	72,139	99,263	107,268
British Columbia	147,047	121,893	96,767	99,965	100,540

1. Since 1994/1995, the Quebec provincial government collects only research and development activities.

Table 3-2
Total expenditures of provincial governments on scientific activities — By activity, and by sector of performance, 2005/2006

	Intramural	Business enterprise	Higher education	Hospitals and health organizations	Provincial research organizations	Other	Total
	thousands of dollars						
Science and technology							
Ontario p	230,956	14,709	364,766	101,995	0	63,876	**776,302**
Manitoba	59,423	1,185	16,169	4,360	902	3,596	**85,635**
Alberta	197,006	30,447	134,251	1,854	0	18,211	**381,769**
British Columbia	92,112	9,471	62,136	24,222	0	135,160	**323,101**
Research and development							
Quebec 1	74,667	25,579	244,567	34,803	406	43,927	**423,949**
Ontario p	42,148	9,447	270,284	77,592	0	27,313	**426,784**
Manitoba	4,482	486	16,030	4,360	625	1,389	**27,372**
Alberta	122,006	13,354	129,725	54	0	9,362	**274,501**
British Columbia	17,350	3,231	56,773	19,678	0	125,529	**222,561**
Related scientific activities							
Ontario p	188,808	5,262	94,482	24,403	0	36,563	**349,518**
Manitoba	54,941	699	139	0	277	2,207	**58,263**
Alberta	75,000	17,093	4,526	1,800	0	8,849	**107,268**
British Columbia	74,762	6,240	5,363	4,544	0	9,631	**100,540**

1. Since 1994/1995, the Quebec provincial government collects only research and development activities.

Table 3-3
Total expenditures of provincial governments on scientific activities — In the natural sciences and engineering, by activity

	2001/2002 r	2002/2003 r	2003/2004 r	2004/2005 r	2005/2006
	thousands of dollars				
Science and technology					
Ontario	493,505	484,833	569,547	616,994	625,090 p
Manitoba	34,053	45,144	50,813	53,814	57,197
Alberta	292,842	311,509	291,865	330,023	356,834
British Columbia	202,445	214,022	199,528	155,933	195,170
Research and development					
Quebec [1]	339,779	301,518	436,550	323,202	306,544
Ontario	371,581	357,327	412,136	394,068	373,389 p
Manitoba	17,380	16,394	19,804	22,278	22,951
Alberta	240,482	242,518	235,564	251,888	266,386
British Columbia	87,718	115,614	117,570	73,069	133,780
Related scientific activities					
Ontario	121,924	127,506	157,411	222,926	251,701 p
Manitoba	16,673	28,750	31,009	31,536	34,246
Alberta	52,360	68,991	56,301	78,135	90,448
British Columbia	114,727	98,408	81,958	82,864	61,390

1. Since 1994/1995, the Quebec provincial government collects only research and development activities.

Table 3-4
Total expenditures of provincial governments on scientific activities — In the natural sciences and engineering, by activity, 2005/2006

	Quebec [1]	Ontario p	Manitoba	Alberta	British Columbia
	thousands of dollars				
Total science and technology	**..**	**625,090**	**57,197**	**356,834**	**195,170**
Total research and development	**306,544**	**373,389**	**22,951**	**266,386**	**133,780**
Current expenditures					
In-house	31,159	28,502	3,025	46,765	13,112
Contracts	501	42,379	221	35,452	4,255
Grants	252,609	291,061	18,530	140,416	115,091
Research fellowships	0	4,061	717	2,335	460
Administration of extramural research and development programs	17,274	4,794	458	13,502	692
Sub-total	301,543	370,797	22,951	238,470	133,610
Capital expenditures	5,001	2,592	0	27,916	170
Total related scientific activities	**..**	**251,701**	**34,246**	**90,448**	**61,390**
Current expenditures					
Education support	..	76,657	35	80	2,311
Technical surveys	..	67,709	12,970	37,588	26,124
Information services	..	20,142	4,144	17,376	29,577
Special services and studies	..	22,010	6,365	28,209	1,494
Museum services	..	42,489	621	2,200	485
Administration of extramural related scientific activities programs	..	1,135	44	668	1,399
Sub-total	..	230,142	24,179	86,121	61,390
Capital expenditures	..	21,559	10,067	4,327	0

1. Since 1994/1995, the Quebec provincial government collects only research and development activities.

Table 3-5
Total expenditures of provincial governments on scientific activities — In natural sciences and engineering, by activity and sector of performance, 2005/2006

	Intramural	Business enterprise	Higher education	Hospitals and health organizations	Provincial research organizations	Other	Total
	thousands of dollars						
Science and technology							
Ontario [p]	187,195	8,762	332,077	67,558	…	29,498	**625,090**
Manitoba	36,425	619	13,535	3,678	643	2,297	**57,197**
Alberta	190,588	26,014	128,275	0	…	11,957	**356,834**
British Columbia	70,833	4,397	52,259	19,050	…	48,631	**195,170**
Research and development							
Quebec [1]	53,935	25,146	183,294	10,205	5	33,959	**306,544**
Ontario [p]	36,293	6,734	246,322	61,597	…	22,443	**373,389**
Manitoba	3,511	486	13,494	3,678	625	1,157	**22,951**
Alberta	121,827	11,354	126,611	0	…	6,594	**266,386**
British Columbia	15,274	2,887	50,460	19,050	…	46,109	**133,780**
Related scientific activities							
Ontario [p]	150,902	2,028	85,755	5,961	…	7,055	**251,701**
Manitoba	32,914	133	41	0	18	1,140	**34,246**
Alberta	68,761	14,660	1,664	0	…	5,363	**90,448**
British Columbia	55,559	1,510	1,799	0	…	2,522	**61,390**

1. Since 1994/1995, the Quebec provincial government collects only research and development activities.

Table 3-6
Total expenditures of provincial governments on scientific activities — In natural sciences and engineering, by objective, 2005/2006

	Ontario [p]	Manitoba	Alberta	British Columbia
	thousands of dollars			
Total	**625,090**	**57,197**	**356,834**	**195,170**
Exploration and exploitation of the earth	16,493	6,931	11,080	7,827
Infrastructure and general planning of land use	8,975	18,619	38,477	39,907
Control and care of the environment	80,757	4,589	37,136	10,838
Protection and improvement of human health	78,899	11,927	76,474	50
Production, distribution and rational utilization of energy	1,296	438	41,525	570
Agriculture production and technology	49,808	3,898	41,493	2,001
Fishing	6,522	1,045	4,501	832
Forestry	15,336	3,383	14,063	14,183
Industrial production and technology	36,791	1,489	22,638	4,367
Social development	52,201	977	2,200	0
Exploration and exploitation of space	2,271	0	0	0
Basic research	274,184	3,901	67,247	114,595
Other civil research	1,557	0	0	0

Table 3-7
Total expenditures of provincial governments on scientific activities — In the social sciences and humanities, by activity

	2001/2002	2002/2003	2003/2004 r	2004/2005 r	2005/2006
	thousands of dollars				
Science and technology					
Ontario	160,152	158,959	152,226	151,858	151,212 p
Manitoba	20,132	21,022	29,056	24,907	28,438
Alberta	24,902	21,912	21,681	32,610	24,935
British Columbia	38,157	83,685	60,625	74,230	127,931
Research and development					
Quebec [1]	86,574	111,443	122,986	92,572	117,405
Ontario	41,207	49,000	61,735	50,762	53,395 p
Manitoba	3,165	3,245	3,691	3,855	4,421
Alberta	4,813	6,267	5,843	11,482	8,115
British Columbia	5,837	60,200	45,816	57,129	88,781
Related scientific activities					
Ontario	118,945	109,959	90,491	101,096	97,817 p
Manitoba	16,967	17,777	25,365	21,052	24,017
Alberta	20,089	15,645	15,838	21,128	16,820
British Columbia	32,320	23,485	14,809	17,101	39,150

1. Since 1994/1995, the Quebec provincial government collects only research and development activities.

Table 3-8
Total expenditures of provincial governments on scientific activities — In the social sciences and humanities, by activity, 2005/2006

	Quebec [1]	Ontario p	Manitoba	Alberta	British Columbia
	thousands of dollars				
Total science and technology	**..**	**151,212**	**28,438**	**24,935**	**127,931**
Total research and development	**117,405**	**53,395**	**4,421**	**8,115**	**88,781**
Current expenditures					
In-house	14,351	5,071	396	0	1,744
Contracts	980	26,856	543	120	82,137
Grants	96,674	20,759	3,132	7,816	4,568
Research fellowships	4	0	318	0	0
Administration of extramural research and development programs	5,104	691	32	179	312
Sub-total	117,113	53,377	4,421	8,115	88,761
Capital expenditures	292	18	0	0	20
Total related scientific activities	**..**	**97,817**	**24,017**	**16,820**	**39,150**
Current expenditures	..	96,273	23,944	14,819	38,458
Administration of extramural related scientific activities programs	..	1,404	42	1,981	136
Sub-total	..	97,677	23,986	16,800	38,594
Capital expenditures	..	140	31	20	556

1. Since 1994/1995, the Quebec provincial government collects only research and development activities.

Table 3-9
Total expenditures of provincial governments on scientific activities — In the social sciences and humanities, by activity and by sector of performance, 2005/2006

	Intramural	Business enterprise	Higher education	Hospitals and health organizations	Provincial research organizations	Other	Total
	thousands of dollars						
Science and technology							
Ontario [p]	43,761	5,947	32,689	34,437	...	34,378	**151,212**
Manitoba	22,998	566	2,634	682	259	1,299	**28,438**
Alberta	6,418	4,433	5,976	1,854	...	6,254	**24,935**
British Columbia	21,279	5,074	9,877	5,172	...	86,529	**127,931**
Research and development							
Quebec [1]	20,732	433	61,273	24,598	401	9,968	**117,405**
Ontario [p]	5,855	2,713	23,962	15,995	...	4,870	**53,395**
Manitoba	971	0	2,536	682	0	232	**4,421**
Alberta	179	2,000	3,114	54	...	2,768	**8,115**
British Columbia	2,076	344	6,313	628	...	79,420	**88,781**
Related scientific activities							
Ontario [p]	37,906	3,234	8,727	18,442	...	29,508	**97,817**
Manitoba	22,027	566	98	0	259	1,067	**24,017**
Alberta	6,239	2,433	2,862	1,800	...	3,486	**16,820**
British Columbia	19,203	4,730	3,564	4,544	...	7,109	**39,150**

1. Since 1994/1995, the Quebec provincial government collects only research and development activities.

Table 3-10
Total expenditures of provincial governments on scientific activities — In the social sciences and humanities, by objective, 2005/2006

	Ontario [p]	Manitoba	Alberta	British Columbia
	thousands of dollars			
Total	**151,212**	**28,438**	**24,935**	**127,931**
Exploration and exploitation of the earth	0	0	0	0
Infrastructure and general planning of land use	4,705	0	0	0
Control and care of the environment	20	40	0	0
Protection and improvement of human health	63,066	3,160	11,546	110,710
Production, distribution and rational utilization of energy	240	100	100	0
Agriculture production and technology	2,340	360	0	0
Fishing	50	0	0	0
Forestry	50	0	0	0
Industrial production and technology	0	1,179	1,590	1,363
Social development	50,735	22,834	10,325	9,462
Exploration and exploitation of space	0	0	0	3,434
Basic research	21,528	713	595	2,262
Other civil research	8,478	52	779	700

Table 4-1

Total expenditures of provincial governments on research and development — In the natural sciences and engineering, by objective, 2005/2006

	Ontario [p]	Manitoba	Alberta	British Columbia
	thousands of dollars			
Total	**373,389**	**22,951**	**266,386**	**133,780**
Exploration and exploitation of the earth	2,366	202	0	3,100
Infrastructure and general planning of land use	4,953	824	24,773	0
Control and care of the environment	6,838	624	11,029	1,905
Protection and improvement of human health	68,202	11,802	70,172	50
Production, distribution and rational utilization of energy	281	438	34,976	0
Agriculture production and technology	38,068	2,679	24,866	236
Fishing	4,691	0	0	832
Forestry	10,262	1,000	12,144	13,029
Industrial production and technology	26,790	1,481	22,638	732
Social development	537	0	0	0
Exploration and exploitation of space	1,465	0	0	0
Basic research	207,379	3,901	65,788	113,896
Other civil research	1,557	0	0	0

Table 4-2

Total expenditures of provincial governments on research and development — In the social sciences and humanities, by objective, 2005/2006

	Ontario [p]	Manitoba	Alberta	British Columbia
	thousands of dollars			
Total	**53,395**	**4,421**	**8,115**	**88,781**
Exploration and exploitation of the earth	0	0	0	0
Infrastructure and general planning of land use	1,278	0	0	0
Control and care of the environment	0	0	0	0
Protection and improvement of human health	31,815	2,912	4,340	82,188
Production, distribution and rational utilization of energy	240	63	0	0
Agriculture production and technology	2,340	123	0	0
Fishing	0	0	0	0
Forestry	0	0	0	0
Industrial production and technology	0	0	0	0
Social development	8,776	610	3,770	4,812
Exploration and exploitation of space	0	0	0	0
Basic research	8,946	713	5	1,524
Other civil research	0	0	0	257

Table 5
Total expenditures on scientific activities by objective, and by province, 2005/2006

	Ontario [p]	Manitoba	Alberta	British Columbia
	thousands of dollars			
Total	**776,302**	**85,635**	**381,769**	**323,101**
Exploration and exploitation of the earth	16,493	6,931	11,080	7,827
Infrastructure and general planning of land use	13,680	18,619	38,477	39,907
Control and care of the environment	80,777	4,629	37,136	10,838
Protection and improvement of human health	141,965	15,087	88,020	110,760
Production, distribution and rational utilization of energy	1,536	538	41,625	570
Agriculture production and technology	52,148	4,258	41,493	2,001
Fishing	6,572	1,045	4,501	832
Forestry	15,386	3,383	14,063	14,183
Industrial production and technology	36,791	2,668	24,228	5,730
Social development	102,936	23,811	12,525	9,462
Exploration and exploitation of space	2,271	0	0	3,434
Basic research	295,712	4,614	67,842	116,857
Other civil research	10,035	52	779	700

Table 6
Total expenditures on research and development, by objective and by province, 2005/2006

	Ontario [p]	Manitoba	Alberta	British Columbia
	thousands of dollars			
Total	**426,784**	**27,372**	**274,501**	**222,561**
Exploration and exploitation of the earth	2,366	202	0	3,100
Infrastructure and general planning of land use	6,231	824	24,773	0
Control and care of the environment	6,838	624	11,029	1,905
Protection and improvement of human health	100,017	14,714	74,512	82,238
Production, distribution and rational utilization of energy	521	501	34,976	0
Agriculture production and technology	40,408	2,802	24,866	236
Fishing	4,691	0	0	832
Forestry	10,262	1,000	12,144	13,029
Industrial production and technology	26,790	1,481	22,638	732
Social development	9,313	610	3,770	4,812
Exploration and exploitation of space	1,465	0	0	0
Basic research	216,325	4,614	65,793	115,420
Other civil research	1,557	0	0	257

Table 7-1
Intramural expenditures of provincial governments on scientific activities — In the social sciences and humanities

	2001/2002	2002/2003	2003/2004 [r]	2004/2005 [r]	2005/2006
	thousands of dollars				
Ontario	73,221	56,713	35,573	44,800	43,761 [p]
Manitoba	16,949	17,768	24,717	20,103	22,998
Alberta	1,811	3,989	5,241	6,914	6,418
British Columbia	25,763	17,612	12,942	14,848	21,279

Table 7-2
Intramural expenditures of provincial governments on scientific activities — In the natural sciences and engineering

	2001/2002 r	2002/2003 r	2003/2004 r	2004/2005 r	2005/2006
	thousands of dollars				
Ontario	122,213	118,636	152,539	188,728	187,195 p
Manitoba	15,177	28,800	31,994	33,595	36,425
Alberta	150,807	141,406	142,742	173,523	190,588
British Columbia	128,311	111,893	92,873	81,840	70,833

Table 8
Intramural expenditures of provincial governments on research and development, in the natural sciences and engineering

	2001/2002	2002/2003 r	2003/2004 r	2004/2005 r	2005/2006
	thousands of dollars				
Quebec	40,750	48,775	50,489	50,403	53,935
Ontario	40,227	40,710	44,216	41,889	36,293 p
Manitoba	1,772	2,083	2,761	3,054	3,511
Alberta	113,273	107,920	101,140	113,700	121,827
British Columbia	21,857	19,715	14,134	14,766	15,274

Table 9-1
Payments to business enterprises by provincial governments — On scientific activities in the natural sciences and engineering

	2001/2002	2002/2003	2003/2004 r	2004/2005 r	2005/2006
	thousands of dollars				
Ontario	27,786	12,896	7,016	23,023	8,762 p
Manitoba	1,629	250	391	654	619
Alberta	21,516	25,954	17,768	21,330	26,014
British Columbia	38,574	26,925	29,548	15,218	4,397

Table 9-2
Payments to business enterprises by provincial governments — On research and development in the natural sciences and engineering

	2001/2002	2002/2003	2003/2004 r	2004/2005 r	2005/2006
	thousands of dollars				
Quebec	23,295	25,948	65,606	28,264	25,146
Ontario	25,960	11,053	2,431	20,058	6,734 p
Manitoba	587	196	391	521	486
Alberta	9,673	13,892	8,328	7,469	11,354
British Columbia	32,390	25,165	28,109	7,630	2,887

Table 10-1
Payments to the higher education sector, by provincial governments — On scientific activities in the natural sciences and engineering

	2001/2002 r	2002/2003	2003/2004 r	2004/2005 r	2005/2006
	thousands of dollars				
Ontario p	269,488	296,378	310,955	287,186	332,077 p
Manitoba	9,314	10,329	11,483	13,180	13,535
Alberta	100,025	106,710	116,525	125,836	128,275
British Columbia	27,431	64,553	55,396	38,821	52,259

Table 10-2
Payments to the higher education sector, by provincial governments — On research and development in the natural sciences and engineering

	2001/2002	2002/2003	2003/2004 r	2004/2005 r	2005/2006
	thousands of dollars				
Quebec	227,400	176,433	267,307	187,423	183,294
Ontario p	258,457	269,122	280,805	244,334	246,322 p
Manitoba	9,142	10,105	11,476	13,139	13,494
Alberta	99,972	104,389	116,256	125,040	126,611
British Columbia	25,756	61,190	54,741	36,206	50,460

Table 11-1
Payments to other performers[1], by provincial governments — On scientific activities in the natural sciences and engineering

	2001/2002	2002/2003	2003/2004 r	2004/2005 r	2005/2006
	thousands of dollars				
Ontario p	22,770	24,133	39,749	42,302	29,498 p
Manitoba	3,111	2,999	2,545	1,884	2,297
Alberta	12,339	29,639	13,034	8,769	11,957
British Columbia	4,042	2,439	7,543	13,307	48,631

1. Other performers include the federal government, municipal governments, individuals, institutions not identified with any other sector and foreign performers.

Table 11-2
Payments to other performers[1], by provincial governments — On research and development in the natural sciences and engineering

	2001/2002	2002/2003	2003/2004 r	2004/2005 r	2005/2006
	thousands of dollars				
Quebec [2]	16,255	33,605	35,464	44,856	33,959
Ontario	7,792	9,273	30,691	30,871	22,443 p
Manitoba	1,057	1,244	786	1,073	1,157
Alberta	9,792	8,517	8,044	5,114	6,594
British Columbia	3,963	1,371	6,418	7,720	46,109

1. Other performers include the federal government, municipal governments, individuals, institutions not included with any other sector, and foreign performers.
2. Since 1994/1995, the Quebec provincial government collects only research and development activities.

Table 12-1
Personnel of provincial governments engaged in scientific activities — By activity and by province

	2001/2002 r	2002/2003 r	2003/2004 r	2004/2005 r	2005/2006
	number				
Science and technology					
Ontario	1,939	2,161	1,872	1,890	1,867 p
Manitoba	440	501	604	578	575
Alberta	1,347	1,205	1,198	1,258	1,329
British Columbia	1,739	1,365	933	836	736
Research and development					
Quebec 1	598	724	721	729	781
Ontario	440	562	460	429	445 p
Manitoba	36	51	57	62	55
Alberta	842	740	656	665	675
British Columbia	282	214	166	157	196
Related scientific activities					
Ontario	1,499	1,599	1,412	1,461	1,422 p
Manitoba	404	450	547	516	519
Alberta	505	465	542	593	654
British Columbia	1,457	1,151	767	679	540

1. Since 1994/1995, the Quebec provincial government collects only research and development activities.
Note(s): Personnel counts are reported as full-time equivalents. Due to rounding, components may not add to the totals.

Table 12-2
Personnel of provincial governments engaged in scientific activities — By activity and category, 2005/2006

	Quebec 1	Ontario p	Manitoba	Alberta	British Columbia
	number				
Total scientific activities	**..**	**1,867**	**575**	**1,329**	**736**
Scientific and professional	..	1,092	357	668	397
Technical	..	471	143	441	231
Other	..	304	74	220	108
Research and development	**577**	**379**	**50**	**569**	**168**
Scientific and professional	338	246	35	202	112
Technical	193	87	11	211	41
Other	46	46	4	156	15
Administration of extramural programs for research and development	**204**	**68**	**5**	**106**	**27**
Scientific and professional	103	43	3	51	9
Technical	67	3	0	12	0
Other	34	22	2	43	18
Related scientific activities	**..**	**1,388**	**516**	**609**	**523**
Scientific and professional	..	778	316	380	266
Technical	..	379	132	212	190
Other	..	231	68	17	67
Administration of extramural programs for related scientific activities	**..**	**32**	**3**	**45**	**18**
Scientific and professional	..	25	3	35	9
Technical	..	2	0	6	0
Other	..	5	0	4	8

1. Since 1994/1995, the Quebec provincial government collects only research and development activities.
Note(s): Personnel counts are reported as full-time equivalents. Due to rounding, components may not add to the totals.

Table 12-3
Personnel of provincial governments engaged in scientific activities — By activity, in the natural sciences and engineering

	2001/2002 r	2002/2003 r	2003/2004 r	2004/2005 r	2005/2006
	number				
Science and technology					
Ontario	1,212	1,490	1,469	1,491	1,483 p
Manitoba	218	288	289	287	287
Alberta	1,302	1,113	1,120	1,186	1,256
British Columbia	1,471	1,199	767	654	562
Research and development					
Quebec [1]	438	524	510	501	540
Ontario	399	516	394	372	385 p
Manitoba	26	41	39	44	43
Alberta	835	738	642	665	674
British Columbia	276	209	157	145	152
Related scientific activities					
Ontario	813	974	1,075	1,119	1,098 p
Manitoba	192	247	250	243	244
Alberta	467	375	478	521	582
British Columbia	1,195	990	610	509	410

1. Since 1994/1995, the Quebec provincial government collects only research and development activities.
Note(s): Personnel counts are reported as full-time equivalents. Due to rounding, components may not add to the totals.

Table 12-4
Personnel of provincial governments engaged in scientific activities — In the natural sciences and engineering, by activity and category, 2005/2006

	Quebec [1]	Ontario p	Manitoba	Alberta	British Columbia
	number				
Total scientific activities	**..**	**1,483**	**287**	**1,256**	**562**
Scientific and professional	..	838	128	601	264
Technical	..	381	129	440	213
Other	..	264	30	215	85
Research and development	**386**	**327**	**38**	**569**	**147**
Scientific and professional	184	204	24	202	91
Technical	174	81	11	211	41
Other	28	42	3	156	15
Administration of extramural programs for research and development	**155**	**58**	**5**	104	**5**
Scientific and professional	78	37	3	49	5
Technical	51	1	0	12	0
Other	26	20	2	43	0
Related scientific activities	**..**	**1,084**	**243**	**571**	**395**
Scientific and professional	..	586	101	344	161
Technical	..	297	118	211	172
Other	..	201	24	16	62
Administration of extramural programs for related scientific activities	**..**	**14**	**1**	**12**	**16**
Scientific and professional	..	11	1	6	8
Technical	..	2	0	5	0
Other	..	1	0	1	8

1. Since 1994/1995, the Quebec provincial government collects only research and development activities.
Note(s): Personnel counts are reported as full-time equivalents. Due to rounding, components may not add to the totals.

Table 12-5
Personnel of provincial governments engaged in scientific activities — In the social sciences and humanities

	2001/2002	2002/2003	2003/2004 r	2004/2005 r	2005/2006
	number				
Ontario	727	672	403	400	384 p
Manitoba	222	213	316	316	288
Alberta	45	92	78	72	73
British Columbia	268	166	166	183	174

Note(s): Personnel counts are reported as full-time equivalents. Due to rounding, components may not add to the totals.

Table 12-6
Personnel of provincial governments engaged in scientific activities — In the social sciences and humanities, by activity and category, 2005/2006

	Quebec 1	Ontario p	Manitoba	Alberta	British Columbia
	number				
Total scientific activities	**..**	**384**	**288**	**73**	**174**
Scientific and professional	..	253	229	67	133
Technical	..	90	14	1	18
Other	..	41	45	5	23
Research and development	**191**	**52**	**12**	**0**	**22**
Scientific and professional	154	42	11	0	22
Technical	19	6	0	0	0
Other	18	4	1	0	0
Administration of extramural programs for research and development	**50**	**9**	**0**	**1**	**22**
Scientific and professional	26	6	0	1	4
Technical	16	1	0	0	0
Other	8	2	0	0	18
Related scientific activities	**..**	**304**	**273**	**38**	**128**
Scientific and professional	..	191	216	36	105
Technical	..	82	14	1	18
Other	..	31	44	1	5
Administration of extramural programs for related scientific activities	**..**	**19**	**2**	**33**	**2**
Scientific and professional	..	14	2	30	2
Technical	..	1	0	0	0
Other	..	4	0	3	0

1. Since 1994/1995, the Quebec provincial government collects only research and development activities.

Note(s): Personnel counts are reported as full-time equivalents. Due to rounding, components may not add to the totals.

Table 13
Provincial governments scientists and professionals engaged in scientific activities, by activity and by province

	2001/2002 r	2002/2003 r	2003/2004 r	2004/2005 r	2005/2006
	number				
Science and technology					
Ontario	1,079	1,275	1,098	1,088	1,091 p
Manitoba	280	290	379	359	357
Alberta	599	523	553	616	668
British Columbia	665	557	474	456	397
Research and development					
Quebec [1]	328	379	385	401	441
Ontario	269	355	272	276	289 p
Manitoba	28	31	38	41	38
Alberta	322	240	241	230	253
British Columbia	148	128	102	102	122
Related scientific activities					
Ontario	810	920	826	812	802 p
Manitoba	252	259	341	317	319
Alberta	277	283	312	386	415
British Columbia	517	429	372	355	275

1. Since 1994/1995, the Quebec provincial government collects only research and development activities.
Note(s): Personnel counts are reported as full-time equivalents. Due to rounding, components may not add to the totals.

Table 14
Total expenditures of provincial research organizations on scientific activities, by activity and by institute

	2001	2002 r	2003 r	2004 r	2005
	thousands of dollars				
Total science and technology	**69,600**	**73,870**	**71,571**	**70,810**	**72,025**
New Brunswick Research and Productivity Council	8,183	8,606	8,393	8,258	8,649
Centre de recherche industrielle du Québec	35,658	39,071	37,243	34,651	32,093
Industrial Technology Centre (Manitoba)	3,244	2,367	1,993	2,155	2,607
Saskatchewan Research Council	20,843	21,472	21,472	23,313	26,166
Alberta Research Council	...	...	...	...	...
Yukon Research Institute	542	867	850	785	984
Nunavut Research Institute	..	..	..	..	..
Aurora Research Institute (Northwest Territories)	1,130	1,487	1,620	1,648	1,526
Total research and development	**22,798**	**25,794**	**24,724**	**25,062**	**23,026**
New Brunswick Research and Productivity Council	1,554	1,808	1,813	1,734	1,989
Centre de recherche industrielle du Québec	14,275	16,243	13,743	13,838	10,360
Industrial Technology Centre (Manitoba)	..	..	..	..	..
Saskatchewan Research Council	6,670	7,301	8,847	9,325	10,467
Alberta Research Council	...	...	...	...	..
Yukon Research Institute	299	442	321	165	210
Nunavut Research Institute	..	..	..	..	..
Aurora Research Institute (Northwest Territories)	..	..	..	..	..
Total related scientific activities	**46,802**	**48,076**	**46,847**	**45,748**	**48,999**
New Brunswick Research and Productivity Council	6,629	6,798	6,580	6,524	6,660
Centre de recherche industrielle du Québec	21,383	22,828	23,500	20,813	21,733
Industrial Technology Centre (Manitoba)	3,244	2,367	1,993	2,155	2,607
Saskatchewan Research Council	14,173	14,171	12,625	13,988	15,699
Alberta Research Council	...	...	...	...	...
Yukon Research Institute	243	425	529	620	774
Nunavut Research Institute	...	...	...	...	...
Aurora Research Institute (Northwest Territories)	1,130	1,487	1,620	1,648	1,526

Table 15
Source of funds for scientific activities of the provincial research organizations

	2001	2002	2003	2004	2005
	percent				
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Provincial governments					
Subsidies, grants and contributions	33.3	39.1	39.7	28.8	26.0
Contracts	7.6	7.8	7.3	18.4	18.0
Federal government					
Subsidies, grants, contributions and contracts	6.3	6.1	5.0	3.9	5.5
Canadian industry contracts	39.3	36.3	40.1	41.2	42.7
Other Canadian sources	11.0	8.4	6.4	6.3	5.4
Foreign	2.5	2.3	1.5	1.4	2.4

Table 16-1
Distribution of provincial research organization personnel — By institute, 2005

	Research and development			Science and technology		
	Scientific and professional	Technical	Other	Scientific and professional	Technical	Other
	number					
New Brunswick Research and Productivity Council	42	34	18	42	34	18
Centre de recherche industrielle du Québec	62	47	42	102	60	88
Industrial Technology Centre (Manitoba)	0	0	0	7	11	3
Saskatchewan Research Council	67	121	15	69	150	42
Yukon Research Institute	6	0	1	6	0	1
NUNAVUT Research Institute	..	..	..	..	..	..
Aurora Research Institute (Northwest Territories)	4	6	1	4	6	152

Note(s): Personnel counts are reported as full-time equivalents. Due to rounding, components may not add to the totals.

Table 16-2
Distribution of provincial research organization personnel — By institute, 2004

	Research and development			Science and technology		
	Scientific and professional	Technical	Other	Scientific and professional	Technical	Other
	number					
New Brunswick Research and Productivity Council	41	33	18	41	33	18
Centre de recherche industrielle du Québec	74	45	49	108	61	100
Industrial Technology Centre (Manitoba)	0	0	0	7	11	4
Saskatchewan Research Council	65	121	15	74	121	43
Yukon Research Institute	6	1	0	6	1	0
NUNAVUT Research Institute	..	..	..	..	..	..
Aurora Research Institute (Northwest Territories)	4	6	1	4	6	149

Note(s): Personnel counts are reported as full-time equivalents. Due to rounding, components may not add to the totals.

Methodology

The information in this document is intended primarily to be used by scientific and technological (S&T) policy makers, both federal and provincial, largely as a basis for interprovincial and intersectoral comparisons. The surveys which generate these statistics also provide input for the development of a national aggregate Research and Development (R&D) series. These national R&D estimates are used to complete international questionnaires for the Organization for Economic Co-operation and Development (OECD) and the United Nations Education, Scientific and Cultural Organization (UNESCO).

The statistics are aggregates of the provincial government science surveys conducted by Statistics Canada under contract with the provinces, and cover the period 2001/2002 to 2005/2006. The provincial government sector consists of all provincial government departments, ministries, agencies and provincial research organizations (PRO). The PRO are surveyed separately and included in this paper.

In the past, surveys have been conducted in as many as nine provinces, the exception being Prince Edward Island. Currently, surveys are being done in Newfoundland and Labrador, Ontario, Manitoba, Alberta and British Columbia. The following ministries or departments sponsor the scientific surveys: Newfoundland and Labrador Statistics Agency, Department of Finance; Ontario Ministry of Research & Innovation; Manitoba Department of Science, Technology, Energy & Mines; Alberta Advanced Education and Technology; and British Columbia Ministry of Advanced Education. The Institut de la Statistique du Québec conducts a similar survey collecting only research and development (R&D) data instead of total S&T activities for the province of Quebec.

Science surveys, like other surveys, depend on respondents' interpretation of definitions and methods of calculation. Accounting records are rarely available which use a science-based classification. Recognizing the fact that the data are estimates, they are still a good representation of science expenditures for the provinces. As in any ongoing statistical exercise, revisions will be necessary as definitions and procedures become clarified. It is also important to note that the same standards have been applied to the data of each province as are applied to data of the federal government.

For the national R&D statistics (GERD), estimates are made for provinces for which there is no survey. Total spending on R&D in Canada and the provinces has been published in Catalogue no. 88-001, volume 30, no. 7.

We want to thank those who replied to each of the provincial and PRO surveys. Without their invaluable help and cooperation, the production of this report would not have been possible.

History of provincial government science and technology surveys

Prior to 1974, estimates were made for provincial government S&T expenditures using provincial estimates and public accounts.

In 1974, Ontario, Alberta and Nova Scotia sought the assistance of Statistics Canada in conducting surveys of S&T spending by their respective governments. In 1975, Saskatchewan joined this group, followed by British Columbia in 1977, Manitoba and New Brunswick in 1984, Newfoundland and Labrador in 1986 and Quebec in 1989.

In 1993/1994, three provinces, Newfoundland and Labrador, New Brunswick and Nova Scotia, did not contract with Statistics Canada for a survey due to budget constraints. In 1994/1995, the province of Quebec collected only R&D expenditures instead of total S&T. In 2001/2002 Saskatchewan did not contract with Statistics Canada for a survey. In 2004/2005, British Columbia did not contract Statistics Canada to conduct a survey however in 2005/2006 they agreed to come back. In 2006/2007, the province of Newfoundland and Labrador agreed to participate in the survey and their results will be reflected in the next release.

Provincial research organizations

All of these organizations have been established by their respective provincial and territorial governments, with a variety of enabling legislation and powers, to provide technical support to primary and secondary industries, to assist in the exploitation of provincial and territorial natural resources and to enhance the economy of their provinces and territories. Small and medium-sized companies with limited in-house technical capability use the services of the provincial research organizations.

In the historical tables you will see other organizations listed that are no longer included in our survey for the following reasons:

In 2000, the transition of the incorporation of the Alberta Research Council (ARC) as a not-for-profit business under the Business Corporation Act was completed. As a result, activities of ARC are now reported on the Alberta Provincial Government Scientific Activities survey.

Federal / provincial workshops on S&T statistics

In the fall of 1977, the first federal-provincial meeting was held in Ottawa. Representatives from British Columbia, Alberta, Saskatchewan, Ontario and Nova Scotia attended; as well as Statistics Canada and members of the Ministry of State for Science and Technology (MOSST).

The next meeting was held in 1984 with representatives from British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec and New Brunswick attending. Statistics Canada sponsored the meeting and invited representatives from MOSST, Energy, Mines and Resources (EMR) and the Science Council. The objectives of the conference were to:

- Provide provincial science policy and statistical users with an overview of products and services of the Science and Technology Statistics Division (STSD);
- Provide a forum to allow discussion between STSD and provincial representatives to exchange views on science statistics; and
- Achieve consensus on how to proceed with future provincial surveys.

In 1999, Ontario proposed that Statistics Canada renew federal/provincial conferences and make them an annual event. Statistics Canada agreed and co-hosted the 1999 conference in Toronto. The agenda included topics such as innovation surveys, biotechnology surveys, intellectual properties in higher education, e-commerce and provincial needs and proposals.

Quebec and Statistics Canada co-hosted the 2000 conference held in Quebec City. Discussions included economic indicators, an innovation study for Ontario, and biotechnology measurement.

In the fall of 2001, British Columbia and Statistics Canada co-hosted the conference in Victoria. Provincial representatives discussed high technology indicators, innovation index, and user needs and challenges. Statistics Canada presented an overview of current program developments and future plans.

Alberta and Statistics Canada co-hosted the 2002 conference held in Edmonton. Discussions included provincial indicators and an overview of current program developments and future plans.

In the fall of 2003, Statistics Canada was supposed to host the 5th annual conference in Ottawa. Due to budget constraints of many provincial governments, the conference was postponed and has not yet been re-instated.

Definitions

This report covers those scientific and technological activities which involve the generation, dissemination and application of new scientific and technological knowledge. The central activity is research and experimental development (R&D). In addition, there are a number of activities closely related to R&D; these are termed related scientific activities (RSA).

R&D is creative work undertaken on a systematic basis in order to increase the stock of scientific and technical knowledge, including knowledge of culture and society and the use of this stock of knowledge to devise new applications.

It requires the acquisition of knowledge and not just information. New knowledge involves the integration of newly acquired information into existing hypotheses or the re-evaluation of existing observations.

The major **related scientific activities** are education support, technical surveys, statistical surveys, information services, special services and studies, and museum services. Education support and museum services are largely self-explanatory.

Technical surveys are activities directed towards exploration and systematic description of the earth and its natural resources. The activities include gathering, processing, collating and analyzing of data on natural phenomena except when part of a research project or a museum service. The preparation of maps and survey reports, their printing and cataloguing, are also included.

Statistical surveys are activities directed toward the collecting, processing and disseminating of statistics on humankind, their economic and social activities. Included are the development of technical methodology, statistical analysis and vital statistics.

Information services are all work directed to recording, classifying, translating, and disseminating information resulting from R&D in the social sciences or required in support of such R&D. Included are the operations of specialized libraries and archives, the publication of scholarly journals and bibliographies, and the organizing of scientific conferences. Grants for the publication of scholarly works are also included.

Special services and studies in the natural sciences are activities directed towards the establishment of national and provincial standards for materials, devices, products and processes; the calibration of secondary standards; non-routine quality testing; feasibility studies and demonstration projects.

In the social sciences, special services and studies are systematic investigations carried out in order to provide information needed for planning or policy formulation, including feasibility studies and demonstration projects.

Scientific and technological activities take place in both natural sciences and social sciences and humanities. The **natural sciences** consist of disciplines concerned with understanding, exploring, developing or utilizing the natural world. The **social sciences and humanities** embrace all disciplines involving the study of human actions and conditions and the social, economic and institutional mechanisms affecting humans.

Six performing sectors are identified.

Intramural refers to the provincial ministry, department or agency performing a scientific activity.

Business enterprise denotes largely private corporations but also includes crown corporations with a commercial function (e.g., power utilities) and industrial research institutes not controlled by another institution.

The higher education sector covers post secondary educational institutions and affiliated teaching and research facilities.

Hospitals and health organizations – Canadian universities and health organizations which are not part of university medical schools, as well as private non-profit organizations.

Provincial research organizations include:

1. New Brunswick Research and Productivity Council,
2. Centre de recherche industriel du Québec,
3. Industrial Technology Centre (Manitoba),
4. Saskatchewan Research Council,
5. Yukon Research Council,
6. Nunavut Research Institute,
7. Aurora Research Institute (Aurora College N.W.T.)

Other includes the federal government, municipal governments, individuals, institutions not identified with any other sector, and foreign performers.

Departmental personnel are classified into three major categories. **Scientific and professional** includes persons in a job requiring at least one academic degree or nationally recognized professional qualification. The **Technical category** includes people in jobs requiring specialized vocational or technical training beyond the secondary level. **Other** includes clerical, secretarial, administrative, operational and other support personnel. Personnel data are reported in full-time equivalent which is simply the portion of a person's time spent on S&T activities.

The objectives listed in this survey do not represent the total range of possible objectives; however, they are intended to cover the major areas of current technological interest. Respondents are asked to report expenditures under the objective which is primary to that expenditure.