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Scientific and technological (S&T) activities of provincial governments, 1994-95 to 2002-03

The provincial government sector consists of all provincial government departments, ministries and agencies and provincial research organizations (PRO). The PRO are surveyed separately and are not reported here. The PRO values are reported in volume 28, no. 5 of this series.

The provincial government sector is part of the national research and development (R&D) system. For most policy analyses, the R&D system is sub-divided into five performing sectors:

- federal government,
- provincial governments,
- business enterprises,
- higher education,
- private non-profit organizations.

It is also sub-divided into six funding sectors: the five above plus all foreign sources.

The statistics are aggregates of the "provincial government science surveys" conducted by Statistics Canada under contract with the provinces, and cover the period 1994-95 to 2002-03 preliminary. 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 Ontario, Manitoba, Saskatchewan, Alberta and British Columbia. Quebec conducts their own survey and collects only R&D data instead of total S&T activities.

For the national intramural R&D statistics, 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 volume 28 no. 2 of this series.

The information in this document is intended primarily to be used by S&T policy makers, both federal and provincial, largely as a basis for inter-provincial and inter-sectoral comparisons. The surveys that generate these statistics also provide input for the development of a national aggregated R&D series. These national R&D estimates are used by businesses, governments and international organizations such as the Organization for Economic Co-operation and Development (OECD) and the United Nations Education, Scientific and Cultural Organization (UNESCO).

June 2004

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Science surveys, like many other surveys, depend on respondents' interpretations of definitions and methods of calculation. Accounting records are rarely available which use a science-based classification. The data represent the best estimate available for science expenditures by the provinces. It is 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.

The first two tables in this bulletin present scientific activities data commonly used as provincial indicators.

The subsequent tables present data relating only to various provincial government scientific expenditures and person-years.

Abbreviations:

PGDP Provincial gross domestic product
GERD Gross Domestic Expenditures on Research and Development
S&T Science and Technology
R&D Research and Development
RSA Related Scientific Activities
S&T = R&D plus RSA

Table 1. Provincial indicators, 2001

Province	Population[1]	PGDP[2]	GERD[3]	GERD/ PGDP[3]	GERD/ Capita
	(000)	($000,000)	($000,000)	ratio	dollars
Newfoundland and Labrador	522	14,196	142	1.0	272
Prince Edward Island	137	3,474	35	1.0	255
Nova Scotia	933	26,070	365	1.4	391
New Brunswick	750	20,772	154	0.7	205
Quebec*	7,397	232,592	6,159	2.6	833
Ontario*	11,898	452,923	10,297	2.3	865
Manitoba	1,151	35,294	453	1.3	394
Saskatchewan	1,000	33,580	391	1.2	391
Alberta	3,057	151,173	1,511	1.0	494
British Columbia	4,078	132,050	1,679	1.3	412
Canada[4]	**31,021**	**1,107,459**	**22,116**	**2.0**	**713**

1. *CANSIM, 051-0001.*
2. *Canadian Economic Observer, Catalogue No. 11-010-XPB, monthly January 2004, table 41, or In CANSIM, table 384-0002.*
3. *Estimates of Canadian Research and Development Expenditures (GERD), Canada 1992 to 2003 and by province 1992 to 2001, no. 88F0006XIE no.003, January 2004 or In CANSIM, table 358-0001*
4. *Includes Nunavut, the Northwest Territories and the Yukon, plus the National Capital Region. (see note below)*

* *Quebec and Ontario GERD figures exclude federal government expenditures of $926 million performed in the National Capital Region.*

Table 2. Total budget and scientific expenditures of the federal government and the provincial governments, 2001-02

Province	Total budget[1]	S&T expenditures	R&D expenditures	S&T as % of total budget	R&D as % of total budget
		millions of dollars		%	
Federal government:					
Canada	**156,157**	**6,707**	**4,150**	**4.3**	**2.7**
Provincial government:					
Quebec[2]	50,309	..	426	..	0.9
Ontario	65,973	684	444	1.0	0.7
Manitoba	6,817	54	19	0.8	0.3
Saskatchewan	5,662	94	72	1.7	1.3
Alberta	19,329	318	246	1.6	1.3
British Columbia	25,102	241	94	1.0	0.4

1. Taken from budgetary Estimates of the federal and provincial government.
2. Since 1994-95, the province of Quebec collects only R&D activities.

Table 3. Total expenditures of provincial governments on scientific activities, 1994-95 to 2002-03

Province	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01[r]	2001-02[r]	2002-03[p]
					thousands of dollars				
Quebec[1]	..	..	..	..	..	..	..	..	..
Ontario	425,161	419,980	336,718	314,809	344,778	455,445	619,779	684,382	727,411
Manitoba	47,114	45,825	41,926	39,833	49,082	43,286	52,098	54,185	55,251
Saskatchewan	49,940	49,146	41,832	70,164	75,146	64,040	96,030	93,780	..
Alberta	172,000	168,424	168,846	178,388	214,417	234,592	263,794	317,744	330,222
British Columbia	215,187	232,159	247,787	260,839	249,245	235,686	338,512	240,602	243,269

1. Since 1994-95, the province of Quebec collects only R&D activities.

Table 4. Total expenditures of provincial governments on R&D, 1994-95 to 2002-03

Province	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00[r]	2000-01[r]	2001-02[r]	2002-03[p]
					thousands of dollars				
Quebec	230,543	218,307	216,246	206,676	213,342	454,994	429,399	426,353	412,961
Ontario	250,440	250,863	210,577	210,196	213,553	280,836	421,015	443,513	488,676
Manitoba	11,764	10,608	10,183	7,130	15,087	14,708	17,980	18,695	19,428
Saskatchewan	32,702	31,555	27,908	55,444	56,700	45,941	76,253	71,785	..
Alberta	102,693	101,892	110,484	126,470	157,385	173,218	198,117	245,643	268,013
British Columbia	72,622	77,985	89,274	88,684	72,829	72,674	199,949	93,555	106,103

Table 5. Total expenditures of provincial governments on scientific activities, by sector of performance, 2002-03

Province	Intramural	Business enterprise	Higher education	Hospitals and health organizations	Provincial research organizations	Other	**Total**
				thousands of dollars			
Quebec	..	..	..	..	..	..	**..**
Ontario	221,241	20,264	315,422	94,111	…	76,373	**727,411**
Manitoba	34,148	771	10,552	5,767	750	3,263	**55,251**
Saskatchewan	..	..	..	..	..	..	**..**
Alberta	157,531	27,558	118,791	7,492	…	18,850	**330,222**
British Columbia	141,539	23,069	65,220	8,006	…	5,435	**243,269**

Table 6. Total expenditures of provincial governments on R&D, by sector of performance, 2002-03

Province	Intramural	Business enterprise	Higher education	Hospitals and health organizations	Provincial research organizations	Other	**Total**
				thousands of dollars			
Quebec	65,213	26,386	236,520	48,354	260	36,227	**412,960**
Ontario	78,356	13,303	290,092	84,615	…	22,310	**488,676**
Manitoba	2,518	516	10,345	3,900	750	1,399	**19,428**
Saskatchewan	..	..	..	..	..	..	**..**
Alberta	120,207	10,153	116,976	5,402	…	15,275	**268,013**
British Columbia	18,443	13,682	61,788	7,571	…	4,619	**106,103**

Table 7. Total expenditures of provincial governments on scientific activities in the natural sciences and engineering, 1994-95 to 2002-03

Province	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01[r]	2001-02[r]	2002-03[p]
					thousands of dollars				
Quebec[1]	..	..	..	..	..	..	..	..	..
Ontario	308,661	309,494	243,370	241,142	259,321	342,756	462,904	524,230	547,804
Manitoba	28,468	28,396	27,265	22,657	31,268	27,394	31,010	34,053	33,865
Saskatchewan	37,865	36,483	31,747	58,912	60,649	48,945	80,629	77,779	..
Alberta	153,343	156,114	157,212	164,917	202,152	219,770	249,333	292,842	312,080
British Columbia	158,774	180,046	196,079	199,575	190,577	166,366	280,761	202,445	204,925

1. Since 1994-95, the province of Quebec collects only R&D activities.

Table 8. Total expenditures of provincial governments on R&D in the natural sciences and engineering, 1994-95 to 2002-03

Province	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00[r]	2000-01[r]	2001-02[r]	2002-03[p]
	thousands of dollars								
Quebec[1]	184,223	171,187	167,934	156,645	149,787	372,682	323,267	339,779	301,518
Ontario	210,148	212,252	176,840	181,163	186,070	235,049	350,567	402,306	434,084
Manitoba	9,709	9,422	9,571	6,374	14,424	14,192	16,934	17,380	17,769
Saskatchewan	30,046	28,808	25,449	52,400	52,900	41,902	72,750	68,304	..
Alberta	101,826	101,419	110,086	125,870	156,815	172,598	193,558	240,482	264,517
British Columbia	69,568	74,612	86,477	85,377	69,152	69,663	189,863	87,718	102,646

Table 9. Intramural expenditures of provincial governments on R&D in the natural sciences and engineering, 1994-95 to 2002-03

Province	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00[r]	2000-01[r]	2001-02[r]	2002-03[p]
	thousands of dollars								
Newfoundland and Labrador	4,000	4,000	4,000	4,000	4,000	5,000	5,000	5,000	5,000
Nova Scotia	5,000	5,000	5,000	5,000	5,000	6,000	6,000	6,000	6,000
New Brunswick	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Quebec	42,822	39,602	39,287	37,436	35,546	32,041	34,242	40,750	48,775
Ontario	65,308	66,732	49,119	41,299	43,183	58,839	65,014	70,952	74,625
Manitoba	716	529	436	1,078	1,212	1,560	1,890	1,772	1,842
Saskatchewan	3,416	3,835	3,002	3,233	2,885	2,771	2,980	3,263	..
Alberta	25,028	25,301	18,439	18,529	21,513	26,077	28,894	113,273	119,860
British Columbia	28,127	21,054	25,294	27,239	23,729	25,814	25,155	21,857	18,228

Note: The source is from Estimates of Canadian Research and Development Expenditures (GERD), Canada 1992 to 2003, and by province 1992 to 2001 no. 88F0006XIE no. 003, January 2004, or in CANSIM, table 358-0001.

Table 10. Total expenditures of provincial governments on scientific activities in the social sciences and humanities, 1994-95 to 2002-03

Province	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02[r]	2002-03[p]
	thousands of dollars								
Quebec[1]	..	..	..	..	..	..	..	..	..
Ontario	116,500	110,486	93,348	73,667	85,457	112,689	156,875	160,152	179,607
Manitoba	18,646	17,429	14,661	17,176	17,814	15,892	21,088	20,132	21,386
Saskatchewan	12,075	12,663	10,085	11,252	14,497	15,095	15,401	16,001	..
Alberta	18,657	12,310	11,634	13,471	12,265	14,822	14,461	24,902	18,142
British Columbia	56,413	52,113	51,708	61,264	58,668	69,320	57,752	38,157	38,344

1. Since 1994-95, the province of Quebec collects only R&D activities.

Table 11. Total expenditures of provincial governments on R&D in the social sciences and humanities, 1994-95 to 2002-03

Province	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00[r]	2000-01[r]	2001-02[r]	2002-03[p]
	thousands of dollars								
Quebec	46,320	47,120	48,312	50,031	63,555	82,312	106,132	86,574	111,443
Ontario	40,292	38,611	33,737	29,033	27,483	45,787	70,448	41,207	54,592
Manitoba	2,055	1,186	612	756	663	516	1,046	1,315	1,659
Saskatchewan	2,656	2,747	2,459	3,044	3,800	4,039	3,503	3,481	..
Alberta	867	473	398	600	570	620	4,559	5,161	3,496
British Columbia	3,054	3,373	2,797	3,307	3,677	3,011	10,086	5,837	3,457

Table 12. Personnel of provincial governments engaged in scientific activities, by province, 1994-95 to 2002-03

Province	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01[r]	2001-02[r]	2002-03[p]
	full-time equivalent								
Quebec[1]	..	..	..	..	..	..	..	..	..
Ontario	2,842	2,768	2,003	1,863	1,957	2,101	2,366	2,390	2,444
Manitoba	358	364	391	407	416	403	427	440	439
Saskatchewan	281	291	203	213	246	250	253	275	..
Alberta	1,174	1,048	713	768	812	818	815	1,349	1,244
British Columbia	1,719	1,618	1,555	1,513	1,441	1,378	1,216	1,739	1,592

1. *Since 1994-95, the province of Quebec collects only R&D activities*.

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

0^s 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

Note

This publication was prepared by **Michèle Lanoue** under the direction of **Janet Thompson**, Subject Matter Manager, Science and Innovation surveys section, Science, Innovation and Electronic Information Division.

http://www.statcan.ca/english/IPS/Data/88-001XIE.htm

Current publications of the Science and Innovation surveys section include:

Industrial research and development, 2003 intentions, (with 2002 preliminary estimates and 2001 actual expenditures), catalogue no. 88-202-XIE, annual. It presents statistics on research and development (R&D) activities performed and funded by Canadian business enterprises. The report covers current and capital expenditures on R&D, R&D as a percent of performing company revenues, R&D expenditures by province, the company's country of control, personnel engaged in R&D and payments for technological services.

http://www.statcan.ca/english/IPS/Data/88-202XIE.htm

Federal science activities, 2002-03, catalogue no. 88-204-XIE, annual. It presents statistics on the federal government's activities in science and technology (S&T). It covers expenditures and person-years by type of science, performing sectors, provinces, federal departments and agencies.

http://www.statcan.ca/english/IPS/Data/88-204XIE.htm

Note of Appreciation

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