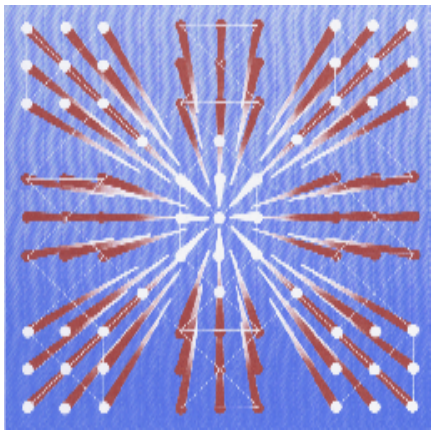
Catalogue no. 88-204-XIE

Federal scientific activities

2003-2004



Statistics Canada Statistique Canada

Canada

How to obtain more information

For information on the wide range of data available from Statistics Canada, you can contact us by calling one of our toll-free numbers. You can also contact us by e-mail or by visiting our Web site.

National enquiries line	1 800 263-1136
National telecommunications device for the hearing impaired	1 800 363-7629
Depository Services Program Inquiries	1 800 700-1033
Fax line for Depository Services Program	1 800 889-9734
E-mail Inquiries	infostats@statcan.ca
Web site	www.statcan.ca

Ordering and subscription information

This product, Catalogue no. 88-204-XIE, is published (annually) in electronic format on the Statistics Canada Internet site at a price of CDN $37.00. To obtain single issues, visit our Web site at: **www.statcan.ca**, and select Products and Services.

This product is also available in print through a print-on-demand service, at a price of CDN $61.00. The following additional shipping charges apply for delivery outside Canada:

Single issue

United States CDN $ 6.00

Other countries CDN $ 10.00

All prices exclude sales taxes.

The printed version can be ordered by:

- Phone (Canada and United States) **1 800 267-6677**
- Fax (Canada and United States) **1 877 287-4369**
- E-mail **infostats@statcan.ca**
- Mail Statistics Canada
  Dissemination Division
  Circulation Management
  120 Parkdale Avenue
  Ottawa, Ontario K1A 0T6
- And, in person at the Statistics Canada Regional Centre nearest you.

When notifying us of a change in your address, please provide both old and new addresses.

Statistics Canada
Science, Innovation and Electronic Information Division

Federal Scientific Activities

2003-2004

Published by the authority of the Minister responsible for Statistics Canada

July 2004

Catalogue no. 88-204-XIE

Frequency: Annual

ISSN 1480-8684

Ottawa

Note of appreciation
Canada owes the success of its statistical system to a long-standing partnership between Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued cooperation and goodwill.

Standard of service to the public
Statistics Canada is committed to serving its clients in a prompt, reliable and courteous manner and in the official language of their choice. To this end, the agency has developed standards of service which its employees observe in serving its clients. To obtain a copy of these service standards, please contact Statistics Canada toll free at 1 800 263-1136.

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

Due to rounding, components may not add to totals

Foreword

The Federal Government is a principal funder of science and technology in Canada. In 2003-04 S&T spending intentions are $8.6 billion dollars. This report presents information on the disposition of monies and human resources for science and technology (S&T) by federal departments and agencies. The information has been assembled to serve as a reference document for program managers, government officials, the media and the general public. It records the allocation of S&T resources for the last ten years.

The statistics are collected through the survey of S&T activities of federal departments and agencies, which records past, current and proposed expenditures for activities in the natural and social sciences. The data are consistent with expenditures of departments and agencies as reported in the "Main Estimates 2003-04",but do not reflect changes to 2003-04 spending plans resulting from supplementary estimates or other departmental planning decisions.

Over 65 different Federal Government departments and agencies either perform S&T activities or have a budgetary allocation to fund S&T. Costs that are not part of the budgets of scientific programs (indirect costs such as services provided by other departments without charge or the portion of administration costs attributable to scientific activities) are included in departmental totals. However, these costs have not been included in expenditures classified by socio-economic objective.

According to international convention, science and technology activities are divided into two fields; natural sciences and engineering (NSE) and social sciences and humanities (SSH). These fields of science are further divided into research and development (R&D) and related scientific activities (RSA). The Federal Government may choose to perform S&T in its own laboratories (intramural expenditures) or may pay another organization to perform S&T (extramural expenditures). Data are presented in this report on S&T activities funded by the Federal Government for R&D and RSA and distinguished by performer (that is, intramurally by the Government itself or extramurally, by business enterprises (industry), universities, provincial and municipal governments, private non-profit organizations, other Canadian performers and foreign performers). Definitions of these terms are provided in the Technical Notes section. Those Crown Corporations, such as Petro Canada, which have an industrial function, are not included. They are treated as commercial enterprises and the crown corporation expenditures in aggregate are included in the Statistics Canada report, Industrial Research and Development, Catalogue No. 88-202-XIE.

Considerable effort has been expended to maintain the continuity and compatibility of the data series to permit analysis and study of the impact of scientific activities. Efforts of the departments and agencies in ensuring accurate and complete information are gratefully acknowledged.

This publication was prepared by **Michèle Lanoue,** Statistical Officer, with the assistance of the staff of Science and Innovation Surveys Section, Science, Innovation and Electronic Information Division and under the direction of **Lloyd Lizotte**, Subject Matter Manager. Ginette McConnell and Claire Racine-Lebel provided key assistance in the production of this document.

Table of contents

List of tables

Table of contents - continued Page

List of tables - continued

Table of contents – continued Page

List of tables – continued

Table of contents – continued Page

List of tables – continued

List of charts

Table of contents – concluded Page

List of charts - concluded

Highlights

- The federal government's budgetary Science & Technology (S&T) spending intentions for 2003-04 are $8.6 billion, an increase of 7% over that forecasted for 2002-03. The preliminary expenditures for 2002-03 were $8.0 billion.

- The federal government's spending on S&T including research and development (R&D) remained a stable 3.6% of the total federal budget through most of the 1990's, then climbed to 4% in 1998-99 and is estimated at 4.9% for 2003-04.

- The total $8.6 billion in federal S&T expenditures do not include federal R&D tax credits

- The central activity of S&T is scientific research and experimental development (R&D). In 2003-04, the federal government was expected to spend $5.5 billion on R&D, an increase of 9% from 2002-03. This includes both intramural performance (activities carried out primarily by the federal government) and extramural funding (activities managed and performed by non-federal organizations) of R&D.

- The federal government departments with the largest estimated expenditures on S&T activities in 2003-04 are the Natural Sciences and Engineering Research Council, the National Research Council, the Canadian Institutes of Health Research and Environment Canada, which together account for 32% of the government's total expenditures.

- In 2003-04, 53% of the total S&T expenditures will be spent on activities performed by the federal government itself. Of total planned R&D spending, the federal government will perform $2.2 billion or 40%.

- In 2003-04, 33,807 person-years were involved in federal S&T activities, a 1.9% increase from 2002-03. Fifty-nine percent, or 19,831 person-years, were engaged in RSA activities.

- The government also funds science activities performed in other sectors: business enterprise, higher education, provincial governments, private non-profit organizations, and other Canadian and foreign organizations. Of these extramural sectors, the business enterprise sector received 13% and the higher education sectors received 27% of total federal S&T expenditures in 2003-04.

- R&D planned payments in 2003-04 to business enterprises amounted to $831 million.

- Higher education received funding of $2,038 million for R&D and $276 million for RSA in 2003-04. The three granting councils, the Canadian Institutes of Health Research, the Natural Sciences and Engineering Research Council, and the Social Sciences and Humanities Research Council, as well as the Canada Foundation for Innovation are the major Federal Government funders of R&D performed in Canadian universities.

1. Expenditure overview

1. Expenditure overview

The Overview section provides an aggregate of government expenditures by field of science (NSE and SSH) and by activity (R&D and RSA). The performers of S&T are also identified for the period 1994-95 to 2003-04.

The federal government planned to spend $8.6 billion on scientific and technological (S&T) activities for the estimate year 2003-04, an increase of 6.8% over forecasted expenditures on S&T for 2002-03.

The central activity of S&T is scientific research and experimental development (R&D). In 2003-04, the federal government is expected to spend $5.5 billion on R&D. This includes both intramural performance and extramural funding of R&D.

Activities in the natural sciences and engineering (NSE) will receive the bulk of federal government funding (76% in 2003-04), most of which (76%) is for research and development (R&D).

Most of the monies (74%) for the social sciences and humanities (SSH) will be spent on related scientific activities (RSA) such as data collection, information services and special services and studies. Statistics Canada alone accounted for 36% of these expenditures.

In 2003-04, most of the federal S&T expenditures (53%) were for activities to be performed within its own scientific establishments as has been the case in the preceding years. In 2003-04, the federal government will perform 40% of its own R&D and 77% of its own RSA.

The departments and agencies with the largest estimated expenditures on natural science activities in 2003-04 are the Natural Sciences and Engineering Research Council ($773 million) the National Research Council ($722 million), the Canadian Institutes of Health Research ($648 million) an Environment Canada ($611 million). In 2003-04 they accounted for 32% of the government's total S&T expenditures.

Statistics Canada is the government’s major spender of social science funds, $561 million in 2003-04.

2. Federal S&T activities questionnaire

The questionnaire on scientific activities is designed to correspond as much as possible to the system of budgetary estimates used by the federal government. This is done to ease the response burden, assist in editing and, most importantly, to produce comparable data for policy planning and program evaluation. Thus, the questionnaire covers the same time span as the Estimates including: proposed estimates for the fiscal year, e.g. 2003-04; forecast expenditures for the current fiscal year, e.g. 2002-03, and actual expenditures for the past fiscal year, e.g. 2001-02 (as also reported in the Public Accounts).

In addition to the expenditures attributable to program budgets, there are additional costs attributable to scientific activities which must be included if a full picture of the resources devoted to science activities is to be obtained. These include other sources of funds and other S&T costs which are defined below:

Budgetary sources - as expressed in the Main Estimates:

- Own Departmental budget.

- Other Federal Agencies - transfers into the program from other federal government departments and agencies, net of transfers out.

External sources:

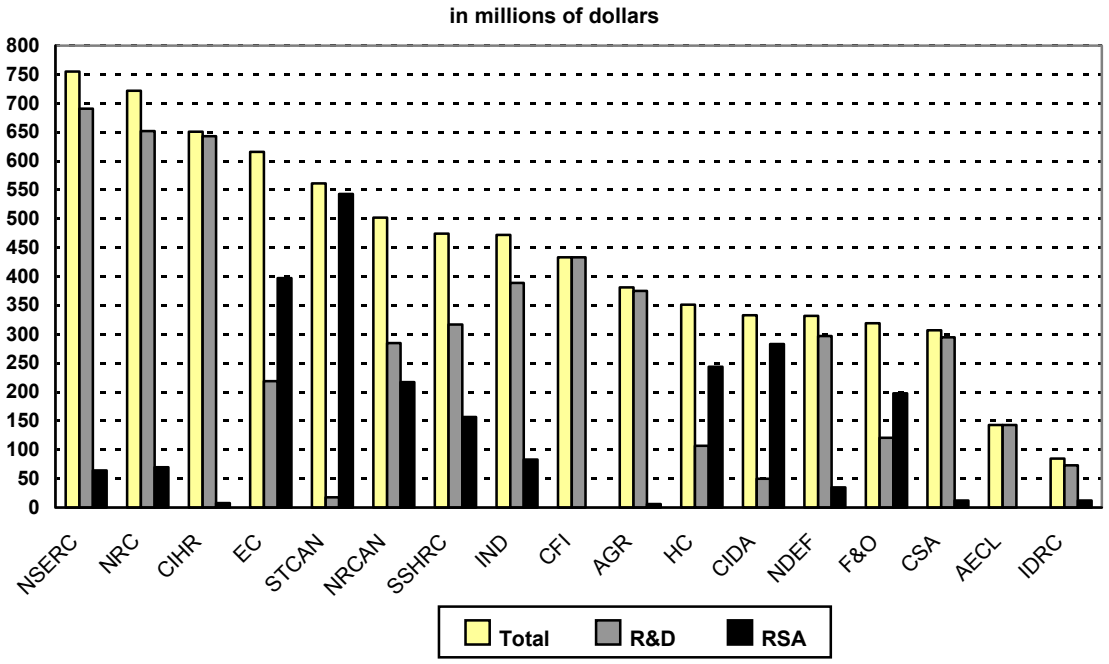
Income from other sources such as industry and provincial governments.

Other S&T costs:

Non-Program Costs (indirect costs) are costs that are not part of the budgets of scientific programs and include services provided by other departments, such as:

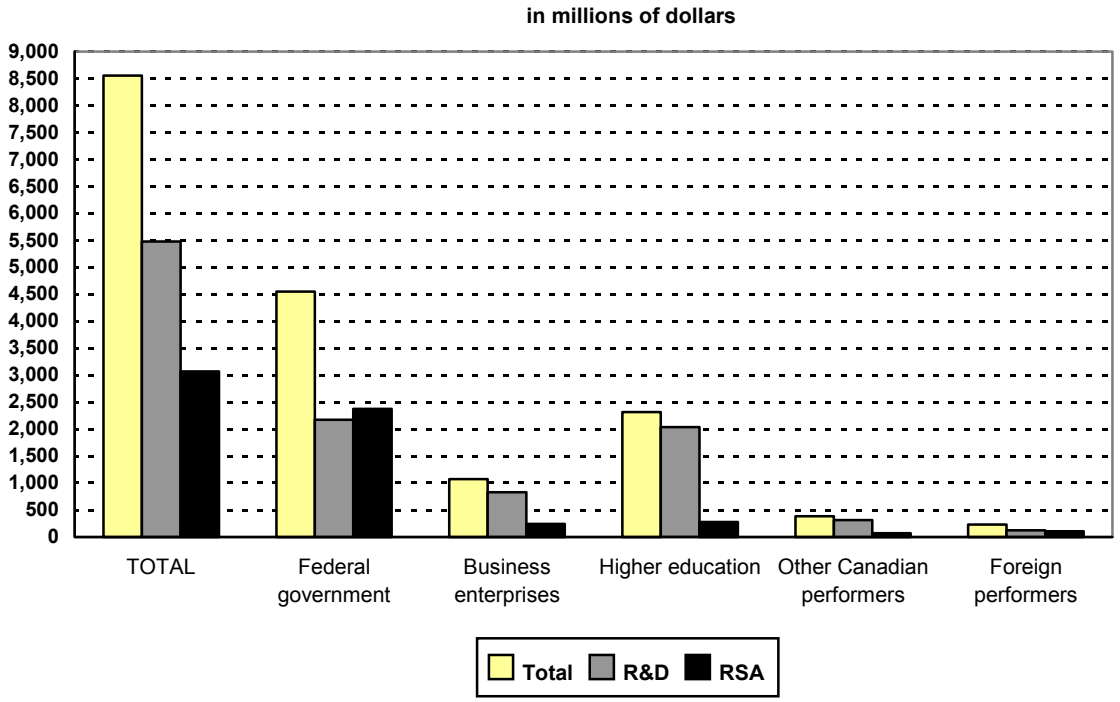
- accommodation by Public Works and Government Services Canada and own department;
- employer's share of health and employment insurance premiums paid by Treasury Board;
- employee compensation under Workers Compensation Acts paid by Human Resources Development Canada;
- cost of legal services provided by the Department of Justice;
- cheques issue cost by Public Works and Government Services Canada;
- overhead - portion of a central administration program costs attributable to scientific activities.

Chart 1.1 Federal expenditures on science and technology, by major department or agency, 2003-04



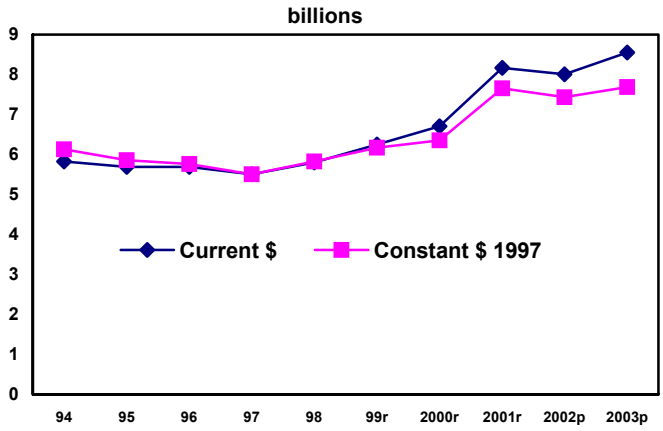
***Source**: chapter 3*

Chart 1.2 Distribution of federal expenditures on science and technology, by sector, 2003-04



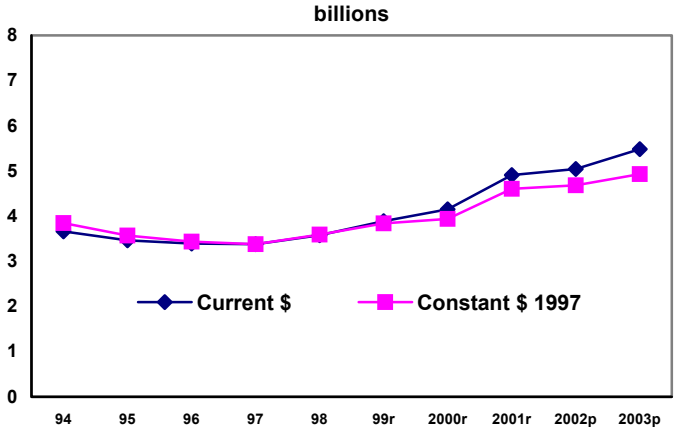
***Source**: table 1.19*

Chart 1.3 Federal expenditures on science and technology, 1994 to 2003



Source: *table 1.8*

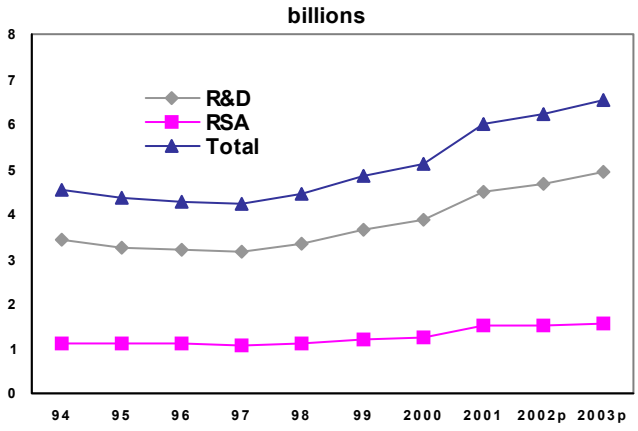
Chart 1.4 Federal expenditures on research and development, 1994 to 2003



Source: *table 1.9*

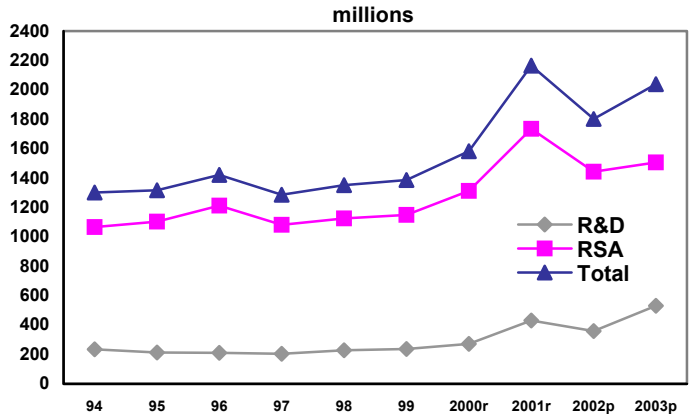
Science and technology expenditures by field of science, 1994 to 2003

Chart 1.5 Natural sciences and engineering



Source: *tables 1.14, 1.15 and 1.16*

Chart 1.6 Social sciences and humanities



Source: *tables 1.14, 1.15 and 1.16*

Table 1.1 Federal budgetary main estimates and expenditures on R&D and S&T in current dollars and in constant 1997 dollars, 1994 to 2003

Year	Current dollars					GDP implicit price index[2]	Constant 1997 dollars		
	Budgetary main estimates[1]	S&T	%	R&D	%		Budgetary main estimates[1]	S&T	R&D
	in millions of dollars						in millions of dollars		
1994	160,738	5,827	3.6	3,657	2.3	95.1	169,020	6,127	3,845
1995	164,191	5,693	3.5	3,465	2.1	97.2	168,921	5,857	3,565
1996	156,985	5,694	3.6	3,391	2.2	98.8	158,892	5,763	3,432
1997	149,555	5,509	3.7	3,379	2.3	100.0	149,555	5,509	3,379
1998	145,457	5,802	4.0	3,578	2.5	99.6	146,041	5,825	3,592
1999	151,559	6,252	4.1	3,890	2.6	101.3	149,614	6,172	3,840
2000	156,157	6,707	4.3	4,150	2.7	105.5	140,016	6,357	3,934
2001[r]	165,234	8,169	4.9	4,909	3.0	106.7	154,858	7,656	4,601
2002[p]	170,367	8,012	4.7	5,043	3.0	107.8	158,040	7,432	4,678
2003[p]	175,937	8,553	4.9	5,481	3.1	111.2	158,217	7,692	4,929

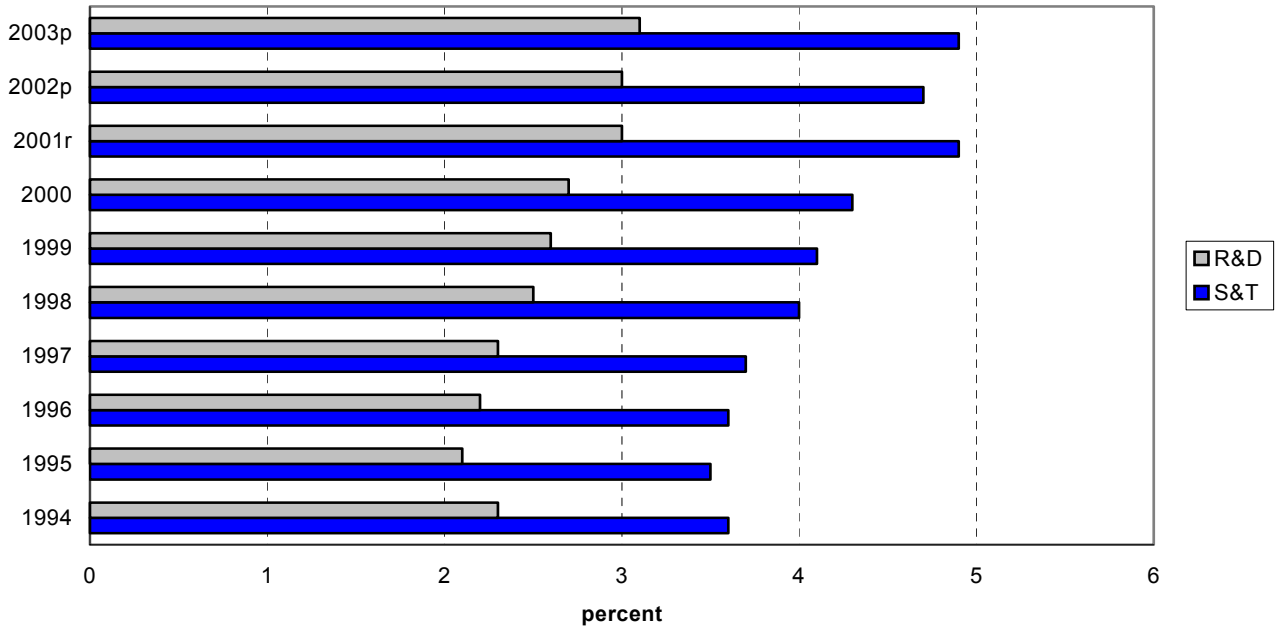
Source 1: Part 1, Government Expenditures Plan, Estimates.
Source 2: CANSIM, table 380-0056, May 2004

The standard measure or indicator of a country's R&D effort is the summary statistic, "Gross Domestic Expenditures on R&D or GERD". Frequently this is expressed as a percent of Gross Domestic Product (GDP). The Federal Government values that are part of GERD are its R&D activities performed intramurally and can be found in table 1.15. For further discussion and explanation of GERD, please refer to volume 28 no. 2 of Statistics Canada Catalogue no. 88-001-XIE.

Table 1.2 Gross domestic expenditures on R&D (GERD) by performing and funding sector, 2003

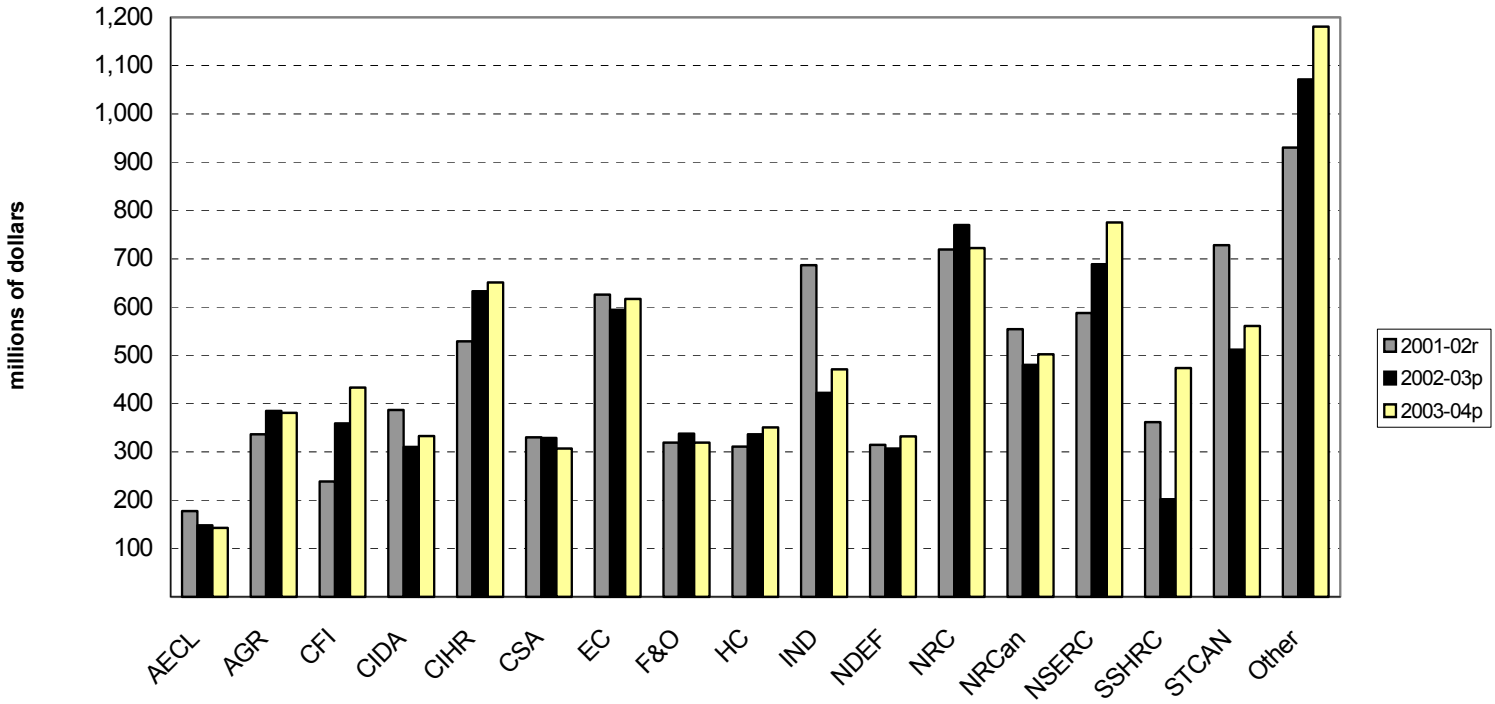
Funding sector	Performing sector						
	Federal government	Provincial government	Provincial research organizations	Business enterprises	Higher education	Private non-profit	Total
	in millions of dollars						
Federal government	2,114	0	1	330	1,919	4	4,368
Provincial government	6	305	14	53	816	17	1,211
Provincial research organizations	0	0	0	0	0	0	0
Business enterprises	54	0	10	9,150	730	8	9,952
Higher education	0	0	0	0	3,603	0	3,603
Private non-profit	0	0	0	0	616	25	641
Foreign	0	0	1	2,527	102	0	2,630
Total	**2,174**	**305**	**26**	**12,060**	**7,786**	**54**	**22,450**

Chart 1.7 Federal expenditures on R&D and S&T as a percentage of federal budgetary main estimates, 1994 to 2003



Source: *table 1.1*

Chart 1.8 Federal expenditures on science and technology, by major department or agency, 2001-02, 2002-03 and 2003-04



Source: *table 1.5*

Chart 1.9 Trends in GERD by performing sector, in current dollars, (1994 and 2003)

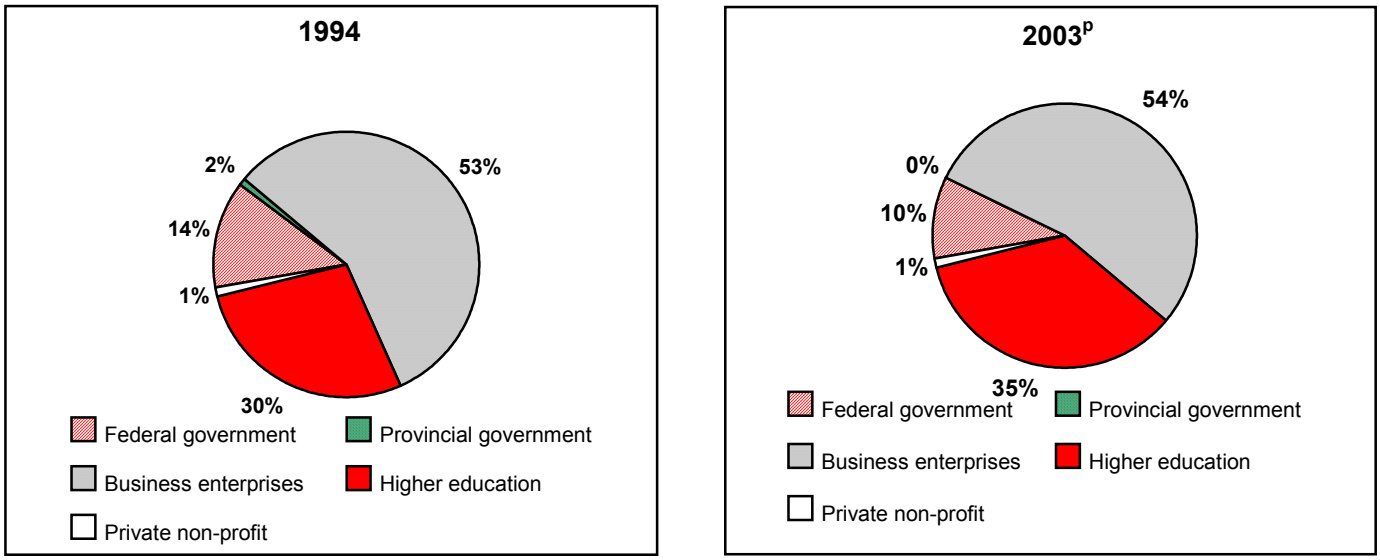


Chart 1.10 Trends in GERD by funding sector, in current dollars, (1994 and 2003)

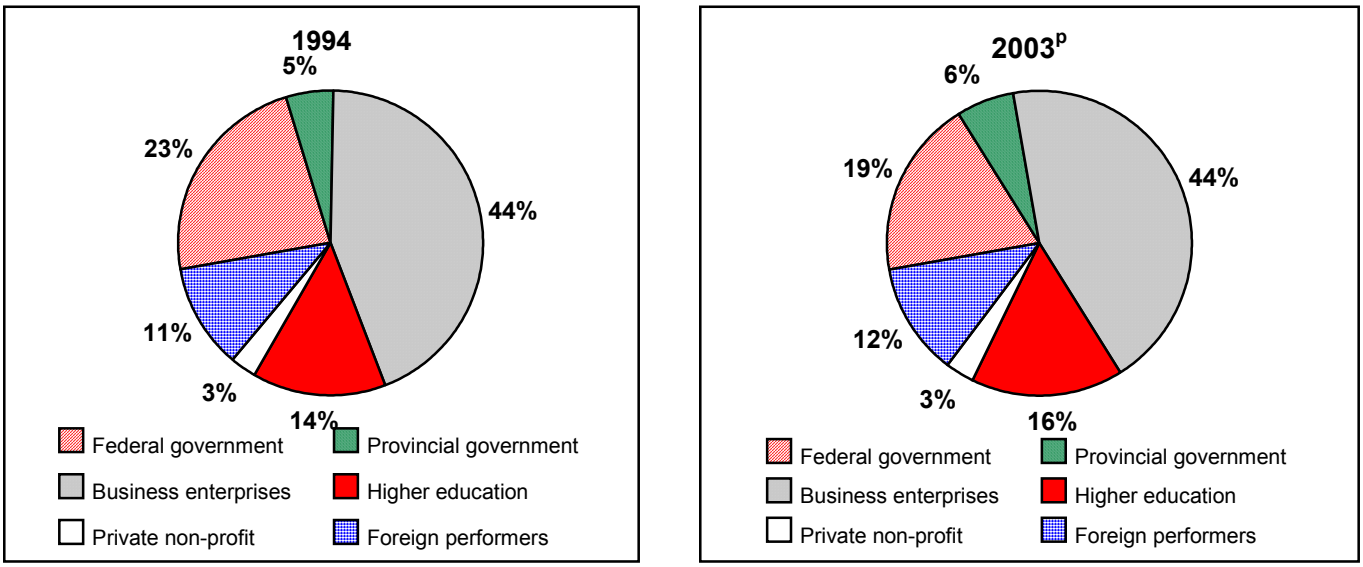


Table 1.3 Percentage of GERD performed by the government sector for selected OECD countries

Countries	1993	1994	1995	1996	1997[r]	1998[r]	1999[r]	2000[r]	2001[r]	2002[p]
Australia	..	26.5	..	23.6	..	23.2	..	23.1	..	..
Austria	8.9	..	..	..	..	6.4	..	..	..	..
Belgium	6.2	3.5	3.4	3.3	3.3	3.4	3.3	..	..	..
Canada	**17.3**	**15.0**	**14.2**	**14.6**	**13.2**	**12.2**	**12.0**	**11.9**	**11.9**	**12.0**
Denmark	17.8	..	17.0	16.3	15.4	14.3	14.5	..	..	..
Finland	20.5	18.9	16.6	15.8	13.6	12.6	11.4	10.6	10.2	..
France	21.1	20.6	21.0	20.3	18.7	18.6	18.1	17.3	17.7	..
Germany	15.0	15.1	15.4	15.2	14.6	14.7	13.8	13.6	13.4	13.5
Italy	21.4	21.3	21.1	20.0	19.4	20.2	19.2	18.9	..	..
Japan	9.3	9.0	9.6	9.4	8.8	9.2	9.9	9.9	9.5	..
Netherlands	18.1	18.6	18.1	17.7	17.1	17.7	16.5	13.0	..	..
Sweden	4.1	..	3.7	..	3.5	..	3.4	..	2.8	..
United Kingdom	14.2	14.6	14.4	14.3	13.8	13.4	12.2	12.2	9.7	..
United States	10.2	10.0	9.6	8.6	8.2	7.9	7.5	6.8	7.0	7.6

Source: Main Science and Technology Indicators, OECD, 2002.

Table 1.4 Percentage of GERD financed by the government sector for selected OECD countries

Countries	1993	1994	1995	1996	1997[r]	1998[r]	1999[r]	2000[r]	2000[r]	2002[p]
Australia	..	47.4	..	45.8	..	47.1	..	46.1	..	..
Austria	48.0	49.4	47.3	43.7	41.0	37.8	39.7	39.9	41.3	42.1
Belgium	32.5	26.4	26.3	23.0	22.2	23.5	23.2	..	..	..
Canada *	**40.7**	**38.1**	**35.9**	**33.7**	**32.0**	**30.4**	**31.5**	**30.8**	**31.3**	**33.2**
Denmark	37.7	..	39.6	35.7	36.1	..	31.2	..	..	..
Finland	39.8	..	35.1	..	30.9	30.0	29.2	26.2	25.5	..
France	43.5	41.6	41.9	41.5	38.8	37.3	36.9	38.7	..	..
Germany	36.5	36.5	36.8	36.9	35.9	34.9	32.5	31.6	31.5	..
Italy	51.3	50.2	53.0	50.8	..	..	..	..	..	..
Japan	21.6	21.5	22.8	18.7	18.2	19.3	19.6	19.6	18.5	..
Netherlands	48.5	43.8	42.2	41.5	39.1	37.9	35.7	35.9	..	..
Sweden	33.0	..	28.8	..	25.8	..	24.5	..	21.0	..
United Kingdom	32.5	33.2	33.2	31.5	30.7	30.6	29.2	28.9	30.2	..
United States	37.7	37.2	35.6	33.2	31.5	30.3	28.5	26.0	26.9	28.7

Source: Main Science and Technology Indicators, OECD, 2002.

** The OECD has included general university funds.*

Chart 1.11 Percentage of GERD performed by the government sector for selected OECD countries, 2001

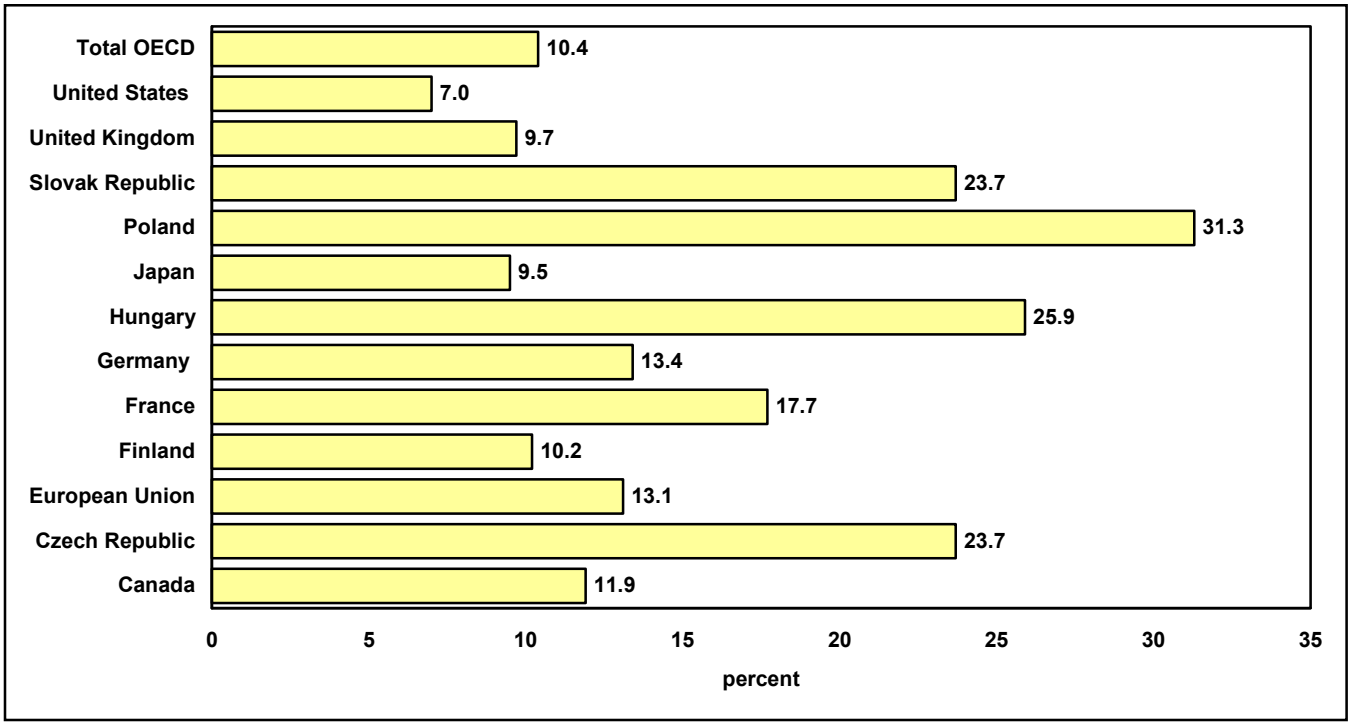


Chart 1.12 Percentage of GERD finance0d by the government sector for selected OECD countries, 2001

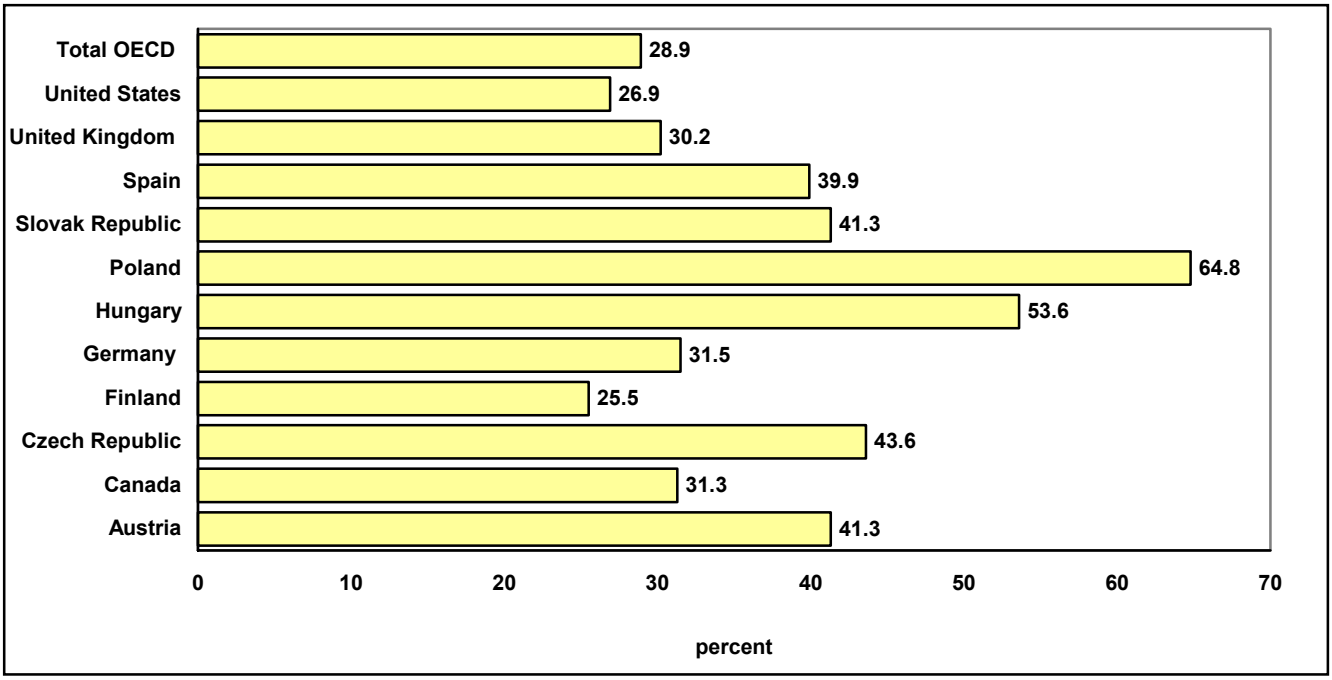


Table 1.5 Major federal S&T performers, 1994-95 to 2003-04

Department or agency	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02 r	2002-03 p	2003-04 p
					in millions of dollars					
Major S&T performers	**5,494**	**5,401**	**5,397**	**5,231**	**5,492**	**5,928**	**6,379**	**7,817**	**7,586**	**8,083**
AECL	169	168	240	174	135	132	136	178	148	143
AGR	356	358	368	359	351	387	363	337	385	381
BC	36	35	39	41	45	41	42	48	69	80
CFI	…	…	…	2	31	118	188	239	359	433
CH[1]	84	82	82	78	1	1	1	11	2	1
CIDA	308	334	339	303	314	335	358	387	310	333
CIHR	…	…	…	…	…	317	392	529	633	651
CMC	56	53	56	55	54	55	58	64	93	95
CSA	320	299	253	230	343	305	310	330	329	307
EC[1]	549	529	456	453	427	538	479	626	594	617
FA&IT	60	58	59	58	49	54	45	48	47	46
F&O	237	244	246	204	281	287	367	319	338	319
GC	…	…	…	…	…	…	…	34	50	84
HC	180	201	214	210	204	236	229	311	337	351
HRDC	66	60	60	65	74	60	69	64	71	70
IDRC	102	88	88	78	85	82	84	76	84	85
IND[2]	388	324	291	407	343	301	336	687	422	471
MRC	265	252	242	238	277	…	…	…	…	…
NA	62	65	46	36	35	35	41	59	62	45
NDEF	252	233	253	311	304	335	315	315	307	332
NL	49	49	43	42	40	42	48	53	60	56
NRC	505	481	479	524	554	597	655	719	770	722
NRCan	464	475	430	396	386	421	437	554	480	502
NSERC	494	471	453	436	499	549	568	588	689	775
PCA	…	…	…	…	82	68	90	95	95	96
SSHRC	103	101	93	96	104	127	145	362	202	474
STCAN	353	406	535	400	437	461	576	727	593	561
TB	36	35	32	35	37	44	47	57	57	53
Minor S&T performers*	**333**	**292**	**297**	**278**	**310**	**324**	**328**	**352**	**426**	**470**
Total	**5,827**	**5,693**	**5,694**	**5,509**	**5,802**	**6,252**	**6,707**	**8,169**	**8,012**	**8,553**

** See table 1.20*
See notes at end of section.

Table 1.6 Federal expenditures on R&D, by major department or agency, 1994-95 to 2003-04

Department or agency	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02[r]	2002-03[p]	2003-04[p]
					in millions of dollars					
AECL	163	163	240	174	135	132	136	178	148	143
AGR	323	328	350	340	335	370	354	329	374	375
CED (Qué)	35	24	28	22	23	12	10	17	27	21
CFI	...	...	...	2	31	118	188	239	359	433
CIDA	62	51	52	48	49	50	57	56	37	51
CIHR	...	...	...	...	...	304	384	522	625	643
CSA	314	291	245	224	337	300	298	317	315	295
EC[1]	174	163	135	127	116	196	144	222	215	219
F&O	114	99	95	78	109	110	130	123	128	121
HC	58	63	74	65	54	55	65	102	102	107
IDRC	89	78	76	64	67	71	76	65	71	73
IND[2]	322	268	230	345	274	239	288	503	353	389
MRC	257	244	234	229	266	…	…	…	…	…
NDEF	248	229	223	264	263	293	274	281	272	297
NRC	449	419	429	470	499	530	591	644	695	652
NRCan	374	403	372	350	345	376	388	335	272	285
NSERC	440	425	410	393	443	481	500	517	610	691
SSHRC	69	70	64	65	68	92	105	245	157	317
STCAN	10	10	9	11	12	13	13	16	17	18
Other	156	137	125	108	152	148	149	200	267	351
Total	**3,657**	**3,465**	**3,391**	**3,379**	**3,578**	**3,890**	**4,150**	**4,909**	**5,043**	**5,481**

See notes at end of section.

Table 1.7 Federal science expenditures by activity, by major department or agency in constant 1997 dollars, 1994-95 to 2003-04

Department or agency	1994-95	1995-96	1996-97[r]	1997-98	1998-99	1999-00[r]	2000-01[r]	2001-02[r]	2002-03[p]	2003-04[p]
Science and technology					in millions of dollars					
GDP Implicit Price Index	95.1	97.2	98.8	100.0	99.6	101.3	105.5	106.7	107.8	111.2
AECL	178	173	243	174	136	130	129	167	137	129
AGR	374	368	372	359	352	382	344	316	357	343
CFI	…	…	…	2	31	116	178	224	333	389
CIDA	324	344	343	303	315	331	339	363	288	299
CIHR	…	…	…	…	…	313	372	496	587	585
CSA	336	308	256	230	344	301	294	309	305	276
EC[1]	577	544	462	453	429	531	454	587	551	555
F&O	249	251	249	204	282	283	348	299	314	287
HC	189	207	217	210	205	233	217	291	313	316
IND[2]	408	333	294	407	344	297	318	644	391	424
IDRC	107	91	89	78	85	81	80	71	78	76
MRC	279	259	245	238	278	…	…	…	…	...
NDEF	265	240	256	311	305	331	299	295	285	299
NRC	531	495	485	524	556	589	621	674	714	649
NRCan	488	489	435	396	388	416	414	519	445	451
NSERC	519	485	459	436	501	542	538	551	639	697
SSHRC	108	104	94	96	104	125	137	339	187	426
STCAN	371	418	542	400	439	455	546	681	550	505
Other	822	750	722	688	730	716	729	830	958	986
Total	**6,127**	**5,857**	**5,763**	**5,509**	**5,825**	**6,172**	**6,357**	**7,656**	**7,432**	**7,692**
Research and development										
GDP Implicit Price Index	95.1	97.2	98.8	100.0	99.6	101.3	105.5	106.7	107.8	111.2
AECL	171	168	243	174	136	130	129	167	137	129
AGR	340	337	354	340	336	365	336	308	347	337
CFI	…	…	…	2	31	118	178	224	333	389
CIHR	…	…	…	…	…	300	364	489	580	578
CIDA	65	52	53	48	49	49	54	52	34	46
CSA	330	299	248	224	338	296	282	297	292	265
EC[1]	183	168	137	127	116	193	136	208	199	197
F&O	120	102	96	78	109	109	123	115	119	109
HC	61	65	75	65	54	54	62	96	95	96
IND[2]	339	276	233	345	275	236	273	471	327	350
IDRC	94	80	77	64	67	70	72	61	66	66
MRC	270	251	237	229	267	…	…	…	…	…
NDEF	261	236	226	264	264	289	260	263	252	267
NRC	472	431	434	470	501	523	560	604	645	586
NRCan	393	415	376	350	346	371	368	314	252	256
NSERC	463	437	415	393	445	475	474	485	566	621
SSHRC	73	72	65	65	68	91	100	230	146	285
Other	211	176	163	141	188	171	163	217	288	352
Total	**3,845**	**3,565**	**3,432**	**3,379**	**3,592**	**3,840**	**3,934**	**4,601**	**4,678**	**4,929**

See notes at end of section.

Table 1.8 Federal expenditures on S&T in current dollars, constant 1997 dollars, and by performing sector[3], 1994-95 to 2003-04

Sector of performance	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00[r]	2000-01[r]	2001-02[r]	2002-03[p]	2003-04[p]
					in millions of dollars					
Current dollars										
Intramural	3,399	3,427	3,575	3,351	3,455	3,658	4,043	4,555	4,603	4,548
Business enterprises	930	885	801	927	952	926	847	1,108	1,022	1,072
Higher education	983	933	894	860	989	1,173	1,320	1,739	1,870	2,314
Non-profit institutions	127	103	112	110	122	181	154	401	183	268
Other Canadian performers[4]	91	86	65	39	51	85	93	84	125	118
Foreign performers	297	259	247	222	233	229	250	282	209	233
Total	**5,827**	**5,693**	**5,694**	**5,509**	**5,802**	**6,252**	**6,707**	**8,169**	**8,012**	**8,553**
Constant 1997 dollars GDP Implicit Price Index	**95.1**	**97.2**	**98.8**	**100.0**	**99.6**	**101.3**	**105.5**	**106.7**	**107.8**	**111.2**
Intramural	3,574	3,526	3,618	3,351	3,469	3,611	3,832	4,270	4,270	4,090
Business enterprises	978	910	811	927	956	914	803	1,038	948	964
Higher education	1,034	960	905	860	993	1,158	1,251	1,630	1,735	2,081
Non-profit institutions	134	106	113	110	122	179	146	376	171	241
Other Canadian performers[4]	96	88	66	39	50	84	88	79	116	106
Foreign performers	312	266	250	222	234	226	237	263	193	210
Total	**6,127**	**5,857**	**5,763**	**5,509**	**5,825**	**6,172**	**6,357**	**7,656**	**7,432**	**7,692**
Percent – Constant 1997 dollars					percent					
Intramural	58	60	63	61	60	58	60	56	57	53
Business enterprises	16	16	14	17	16	15	13	14	13	13
Higher education	17	16	16	15	17	19	20	21	23	27
Non-profit institutions	2	2	2	2	2	3	2	5	2	3
Other Canadian performers[4]	2	1	1	1	1	1	1	1	2	1
Foreign performers	5	5	4	4	4	4	4	3	3	3
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

See notes at end of section.

Chart 1.13 Federal expenditures on S&T, 1994 to 2003, in current dollars

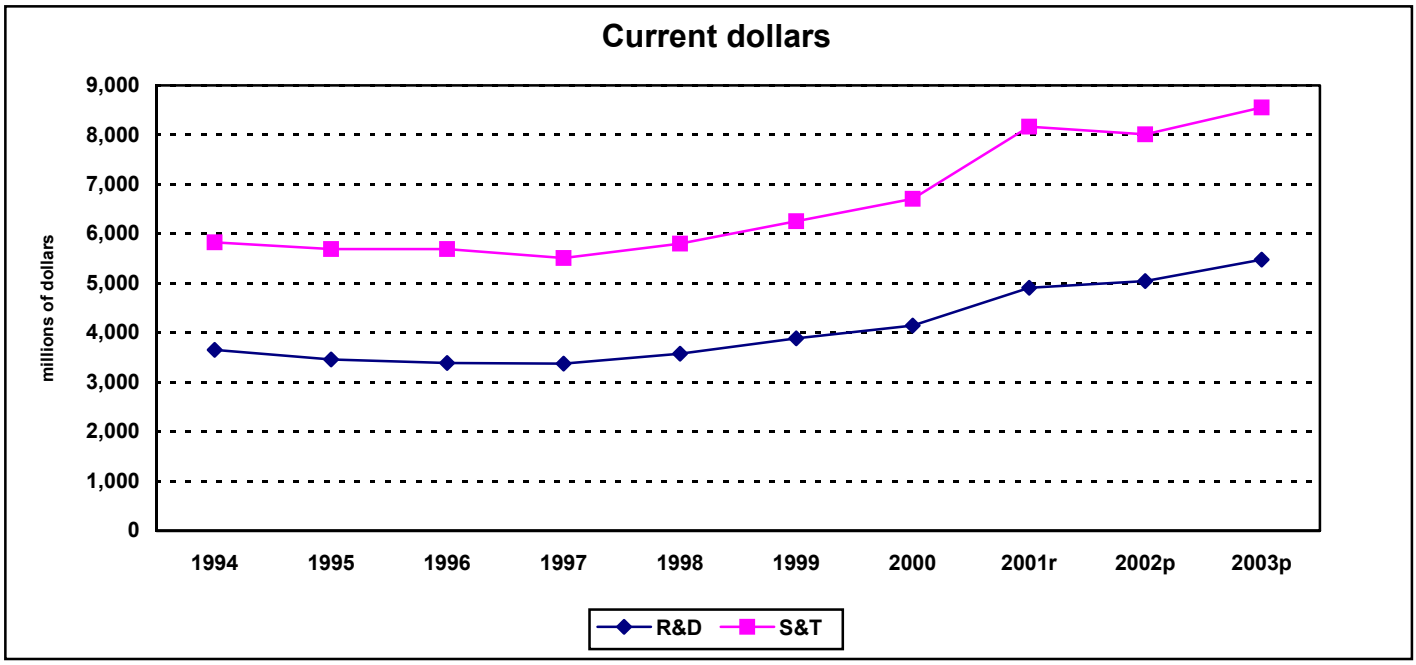
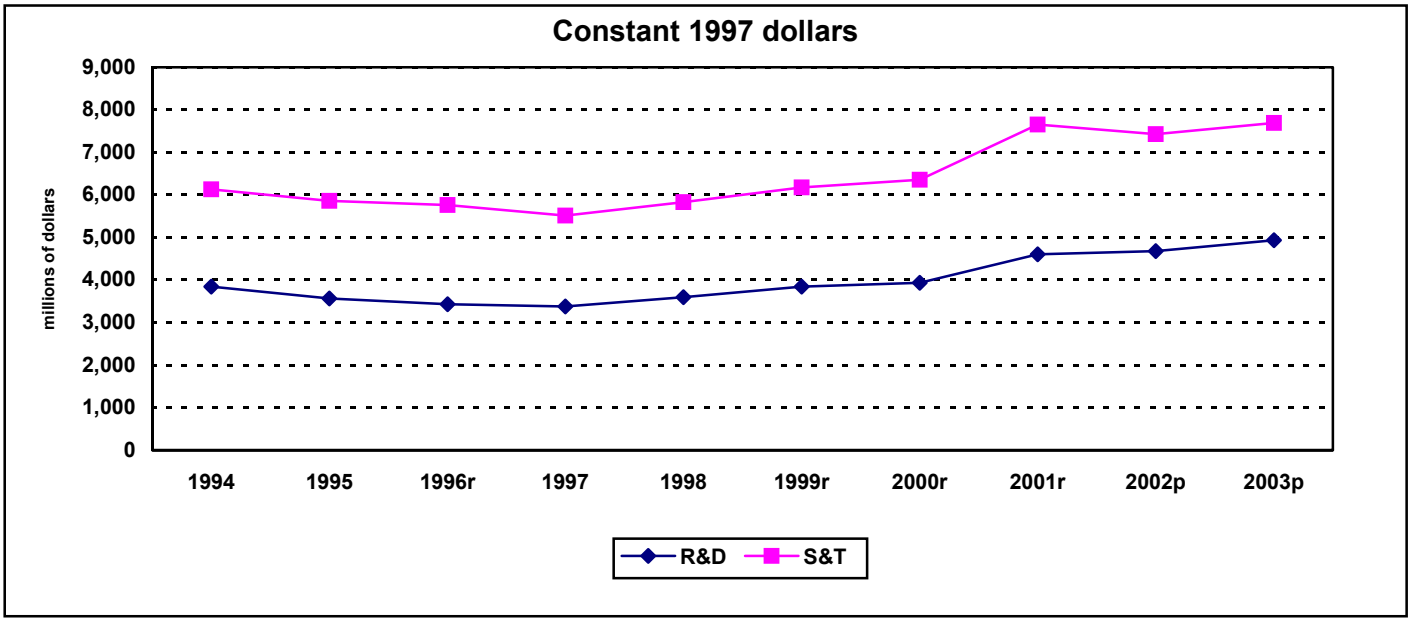


Chart 1.14 Federal expenditures on S&T, 1994 to 2003, in constant 1997 dollars



***Source**: tables 1.8 and 1.9*

Table 1.9 Federal expenditures on R&D in current dollars, constant 1997 dollars, and by performing sector[3], 1994-95 to 2003-04

Sector of performance	1994-95	1995-96	1996-97[r]	1997-98	1998-99	1999-00[r]	2000-01[r]	2001-02[r]	2002-03[p]	2003-04[p]
					in millions of dollars					
Current dollars										
Intramural	1,754	1,727	1,792	1,720	1,743	1,859	2,080	2,103	2,223	2,174
Business enterprises	756	665	573	721	749	713	624	862	774	832
Higher education	835	797	761	725	842	1,010	1,170	1,515	1,709	2,038
Non-profit institutions	74	59	75	71	82	130	76	233	138	229
Other Canadian performers[4]	62	65	50	22	38	59	69	61	82	83
Foreign performers	177	151	141	120	124	118	131	137	116	125
Total	**3,657**	**3,465**	**3,391**	**3,379**	**3,578**	**3,890**	**4,150**	**4,911**	**5,042**	**5,481**
Constant 1997 dollars										
GDP Implicit Price Index	**95.1**	**97.2**	**98.8**	**100.0**	**99.6**	**101.3**	**105.5**	**106.7**	**107.8**	**111.2**
Intramural	1,844	1,777	1,814	1,720	1,750	1,835	1,972	1,971	2,062	1,955
Business enterprises	795	684	580	721	752	704	591	807	718	748
Higher education	878	820	770	725	845	997	1,109	1,420	1,586	1,833
Non-profit institutions	78	61	76	71	82	128	72	218	128	206
Other Canadian performers[4]	65	67	51	22	38	58	65	56	76	75
Foreign performers	186	155	143	120	124	116	124	128	108	112
Total	**3,845**	**3,565**	**3,432**	**3,379**	**3,592**	**3,840**	**3,934**	**4,601**	**4,678**	**4,929**
Percent – Constant 1997 dollars					percent					
Intramural	48	50	53	51	49	48	50	43	44	40
Business enterprises	20	19	17	21	21	18	15	17	15	15
Higher education	23	23	22	21	24	26	28	31	34	37
Non-profit institutions	2	2	2	2	2	3	2	5	3	4
Other Canadian performers[4]	2	2	2	1	1	2	2	1	2	2
Foreign performers	5	4	4	4	3	3	3	3	2	2
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

See notes at end of section.

Table 1.10 Federal expenditures on RSA in current dollars, constant 1997 dollars, and by performing sector[3], 1994-95 to 2003-04

Sector of performance	1994-95	1995-96	1996-97[r]	1997-98	1998-99	1999-00[r]	2000-01[r]	2001-02[r]	2002-03[p]	2003-04[p]
					in millions of dollars					
Current dollars										
Intramural	1,646	1,699	1,783	1,631	1,712	1,799	1,963	2,452	2,379	2,374
Business enterprises	174	221	228	206	203	212	223	247	248	241
Higher education	147	135	133	135	147	164	150	224	161	276
Non-profit institutions	53	45	37	40	40	51	77	168	45	38
Other Canadian performers[4]	28	21	17	17	14	25	24	23	43	35
Foreign performers	121	107	105	101	109	111	119	145	93	107
Total	**2,170**	**2,228**	**2,303**	**2,130**	**2,224**	**2,362**	**2,557**	**3,259**	**2,969**	**3,071**
Constant 1997 dollars GDP Implicit Price Index	**95.1**	**97.2**	**98.8**	**100.0**	**99.6**	**101.3**	**105.5**	**106.7**	**107.8**	**111.2**
Intramural	1,731	1,748	1,805	1,631	1,719	1,776	1,861	2,298	2,207	2,135
Business enterprises	183	227	231	206	204	209	211	231	230	217
Higher education	155	139	135	135	148	162	142	210	149	248
Non-profit institutions	56	46	37	40	40	50	73	157	42	34
Other Canadian performers[4]	29	22	17	17	14	25	23	22	40	31
Foreign performers	127	110	106	101	109	110	113	136	86	96
Total	**2,282**	**2,292**	**2,331**	**2,130**	**2,233**	**2,332**	**2,423**	**3,054**	**2,754**	**3,762**
Percent – Constant 1997 dollars					percent					
Intramural	76	76	77	76	77	76	77	75	80	77
Business enterprises	8	10	10	10	9	9	9	8	8	8
Higher education	7	6	6	6	6	7	6	7	5	9
Non-profit institutions	2	2	2	2	2	2	3	5	2	1
Other Canadian performers[4]	1	1	1	1	1	1	1	1	2	1
Foreign performers	6	5	4	5	5	5	4	4	3	4
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	100	**100**	**100**

See notes at end of section.

Table 1.11 Federal expenditures on S&T, by major department or agency and source of funds, 2003-04

Department or agency	Total estimated expenditures on science	Sources of Funds				
		External sources	Other S&T costs		Budgetary sources	
			Indirect non-program costs	Administrative costs of department	Other federal agencies*	Own department
		in millions of dollars				
AGR	**381**	0	14	0	0	367
CSA	**307**	0	4	0	-16	319
EC	**617**	62	34	39	31	451
F&O	**319**	10	20	0	14	275
HC	**351**	9	24	60	-7	265
IND	**471**	54	13	0	-30	434
NDEF	**331**	6	9	0	-9	325
NRC	**722**	16	15	0	45	646
NRCan	**502**	0	27	0	0	475
STCAN	**561**	43	48	0	87	383

* *Negative amounts denote net transfer from budget for S&T.*

Table 1.12 Federal S&T expenditures, by department or agency and performing sector[3], 2003-04

Department or agency	Sector of performance					Total
	Intramural	Business enterprises	Higher education	Other Canadian performers	Foreign performers	
	in millions of dollars					
AECL	132	7	0	1	3	143
AGR	362	0	0	18	1	381
BC	80	0	0	0	0	80
CFI	11	0	422	0	0	433
CIDA	21	154	55	15	88	333
CIHR	37	0	589	15	10	651
CSA	150	124	9	4	20	307
EC	503	37	8	64	5	617
F&O	303	4	3	9	0	319
FA&IT	7	0	14	0	26	47
HC	294	16	5	36	0	351
HRDC	35	5	1	29	0	70
IDRC	43	0	3	3	36	85
IND	129	331	0	4	7	471
NDEF	142	175	4	2	9	332
NL	56	0	0	0	0	56
NRC	589	83	40	3	7	722
NRCan	452	27	5	16	2	502
NSERC	40	15	700	8	12	775
PCA	93	1	1	1	0	96
SSHRC	20	1	431	18	4	474
STCAN	560	0	0	1	0	561
Other	489	92	24	139	3	747
Total	**4,548**	**1,072**	**2,314**	**386**	**233**	**8,553**

See notes at end of section.

Table 1.13 Federal expenditures by activity, 1994-95 to 2003-04

Scientific activity	1994-95	1995-96	1996-97[r]	1997-98[r]	1998-99[r]	1999-00[r]	2000-01[r]	2001-02[r]	2002-03[p]	2003-04[p]
					in millions of dollars					
R&D										
Current expenditures	3,287	3,140	3,086	3,062	3,241	3,559	3,770	4,491	4,596	5,067
Administration of extramural programs	164	162	164	163	200	186	182	213	227	232
Capital expenditures	205	163	141	154	137	144	198	205	220	182
Sub-total R&D	**3,657**	**3,465**	**3,391**	**3,379**	**3,578**	**3,890**	**4,150**	**4,909**	**5,043**	**5,481**
RSA										
Data collection	882	923	1,007	964	1,022	1,105	1,231	1,611	1,461	1,412
Information services	543	539	523	465	469	486	484	698	655	768
Special services and studies	369	447	463	436	452	485	531	513	529	516
Education support	170	139	139	142	157	168	163	286	161	189
Administration of extramural programs	36	34	33	32	35	40	46	50	52	52
Capital expenditures	171	147	139	91	89	77	102	103	111	135
Sub-total RSA	**2,170**	**2,228**	**2,303**	**2,130**	**2,224**	**2,362**	**2,557**	**3,259**	**2,969**	**3,071**
Total	**5,827**	**5,693**	**5,694**	**5,509**	**5,802**	**6,252**	**6,707**	**8,169**	**8,012**	**8,553**

Table 1.14 Federal expenditures, by type of science and by performer[3], 1994-95 to 2003-04

Sector of performance	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02[r]	2002-03[p]	2003-04[p]
					in millions of dollars					
Total science:										
Intramural	3,399	3,427	3,575	3,351	3,455	3,658	4,043	4,555	4,603	4,548
Business enterprises	930	885	801	927	952	926	847	1,108	1,022	1,072
Higher education	983	933	894	860	989	1,173	1,320	1,739	1,870	2,314
Non-profit institutions	127	103	112	110	122	181	154	401	183	268
Other Canadian performers[4]	91	86	65	39	51	85	93	84	125	118
Foreign performers	297	259	247	222	233	229	250	282	209	233
Total	**5,827**	**5,693**	**5,694**	**5,509**	**5,802**	**6,252**	**6,707**	**8,169**	**8,012**	**8,553**
Natural sciences and engineering:										
Intramural	2,519	2,486	2,507	2,417	2,459	2,648	2,872	3,166	3,274	3,250
Business enterprises	885	846	767	892	924	896	816	1,071	983	1,036
Higher education	818	773	737	702	836	1,002	1,139	1,341	1,645	1,822
Non-profit institutions	67	59	66	57	56	128	98	226	124	210
Other Canadian performers[4]	71	69	56	28	42	57	55	43	64	63
Foreign performers	166	144	140	126	134	134	144	157	119	134
Total	**4,526**	**4,377**	**4,273**	**4,222**	**4,450**	**4,866**	**5,124**	**6,005**	**6,209**	**6,515**
Social sciences and humanities:										
Intramural	880	941	1,068	934	996	1,010	1,171	1,389	1,329	1,298
Business enterprises	45	40	34	35	29	30	32	38	38	36
Higher education	165	159	157	158	153	171	181	398	225	492
Non-profit institutions	59	44	46	53	65	52	56	174	59	58
Other Canadian performers[4]	20	17	9	11	9	28	38	40	61	55
Foreign performers	132	115	107	96	99	95	105	125	90	99
Total	**1,301**	**1,316**	**1,421**	**1,287**	**1,352**	**1,386**	**1,582**	**2,164**	**1,802**	**2,038**

See notes at end of section.

Table 1.15 Federal expenditures on R&D, by type of science and by performer[3], 1994-95 to 2003-04

Sector of performance	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02[r]	2002-03[p]	2003-04[p]
					in millions of dollars					
Total sciences:										
Intramural	1,754	1,727	1,792	1,720	1,743	1,859	2,080	2,103	2,223	2,174
Business enterprises	756	665	573	721	749	713	624	861	774	831
Higher education	835	797	761	725	842	1,010	1,170	1,515	1,709	2,038
Non-profit institutions	74	59	75	71	82	130	76	233	138	230
Provincial and municipal governments	33	38	27	6	9	13	34	26	40	42
Other Canadian performers	29	27	23	16	29	46	35	34	42	41
Foreign performers	177	151	141	120	124	118	131	137	116	125
Total	**3,657**	**3,465**	**3,391**	**3,379**	**3,578**	**3,890**	**4,150**	**4,909**	**5,043**	**5,481**
Natural sciences and engineering:										
Intramural	1,694	1,669	1,724	1,651	1,667	1,774	1,995	2,011	2,112	2,051
Business enterprises	750	662	570	720	747	711	622	857	769	826
Higher education	749	713	680	644	762	913	1,063	1,265	1,560	1,730
Non-profit institutions	43	34	52	47	43	109	48	202	99	190
Provincial and municipal governments	30	37	25	4	8	13	19	9	23	25
Other Canadian performers	25	23	21	15	27	37	27	25	31	28
Foreign performers	131	114	110	94	97	95	104	111	90	100
Total	**3,422**	**3,252**	**3,181**	**3,174**	**3,350**	**3,653**	**3,879**	**4,480**	**4,684**	**4,950**
Social sciences and humanities:										
Intramural	60	58	68	69	76	85	85	93	112	123
Business enterprises	5	3	3	2	3	2	2	5	5	5
Higher education	86	85	81	80	80	97	107	250	150	308
Non-profit institutions	30	24	24	24	39	21	28	31	39	40
Provincial and municipal governments	3	1	2	2	1	1	15	17	17	17
Other Canadian performers	4	4	2	1	2	9	8	9	12	13
Foreign performers	46	38	31	27	27	23	27	24	25	26
Total	**235**	**213**	**210**	**205**	**228**	**237**	**271**	**430**	**359**	**532**

See notes at end of section.

Table 1.16 Federal expenditures on RSA, by type of science and by performer[3], 1994-95 to 2003-04

Sector of performance	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02 r	2002-03 p	2003-04 p
					in millions of dollars					
Total sciences:										
Intramural	1,646	1,699	1,783	1,631	1,712	1,799	1,963	2,452	2,379	2,374
Business enterprises	174	221	228	206	203	212	223	247	248	241
Higher education	147	135	133	135	147	164	150	224	161	276
Non-profit institutions	53	45	37	40	40	51	77	168	45	38
Provincial and municipal governments	11	9	6	6	5	5	3	5	8	8
Other Canadian performers	17	12	11	11	9	20	21	18	35	27
Foreign performers	121	107	105	101	109	111	119	145	93	107
Total	**2,170**	**2,228**	**2,303**	**2,130**	**2,224**	**2,362**	**2,557**	**3,260**	**2,969**	**3,072**
Natural sciences and engineering:										
Intramural	825	816	783	766	792	874	877	1,155	1,162	1,200
Business enterprises	135	184	197	172	177	185	193	214	214	210
Higher education	69	60	58	58	74	89	76	76	85	91
Non-profit institutions	24	25	14	11	14	19	50	25	25	21
Provincial and municipal governments	10	6	5	4	3	3	2	5	4	4
Other Canadian performers	6	4	5	4	4	4	6	5	7	6
Foreign performers	35	30	30	33	37	39	41	45	28	34
Total	**1,104**	**1,125**	**1,091**	**1,048**	**1,100**	**1,213**	**1,245**	**1,525**	**1,525**	**1,566**
Social sciences and humanities:										
Intramural	820	883	1,000	866	920	925	1,086	1,297	1,217	1,175
Business enterprises	40	37	31	33	26	28	30	33	34	31
Higher education	78	75	76	77	73	75	74	148	75	185
Non-profit institutions	29	20	23	29	26	31	28	143	20	17
Provincial and municipal governments	1	3	1	2	2	2	1	0	4	4
Other Canadian performers	12	8	5	7	5	16	15	13	28	21
Foreign performers	86	77	75	69	72	72	78	100	65	73
Total	**1,066**	**1,103**	**1,211**	**1,082**	**1,124**	**1,149**	**1,312**	**1,734**	**1,443**	**1,506**

See notes at end of section.

Table 1.17 Federal expenditures, by activity and performer, 2001-02

Activity	Intramural	Performer						
		Business enterprises	Higher education	Non-profit institutions	Provincial and municipal gvts	Foreign performers	Other Canadian performers	Total
		in millions of dollars						
R&D								
In-house R&D	1,564	…	…	…	…	…	…	1,564
R&D contracts	25	270	27	6	3	23	12	366
Supporting contracts	85	…	…	…	…	…	…	85
R&D grants and contributions	…	587	1,447	227	23	98	14	2,396
Research fellowships	10	5	41	0	0	15	9	80
Administration of extramural programs	213	…	…	…	…	…	…	213
Capital expenditures	206	…	…	…	…	…	…	206
Sub-total R&D	**2,103**	**862**	**1,515**	**233**	**26**	**136**	**35**	**4,910**
RSA								
Data collection	1,518	52	5	15	3	13	4	1,610
Information services[5]	522	20	90	12	1	50	2	697
Special services and studies[6]	252	171	2	11	0	71	5	512
Education support	8	3	127	130	0	11	7	286
Administration of extramural programs	50	…	…	…	…	…	…	50
Capital expenditures	103	…	…	…	…	…	…	103
Sub-total RSA	**2,453**	**246**	**224**	**168**	**4**	**145**	**18**	**3,258**
Total	**4,556**	**1,108**	**1,739**	**401**	**30**	**281**	**53**	**8,168**

See notes at end of section.

Table 1.18 Federal expenditures, by activity and performer, 2002-03

Activity	Intramural	Performer						
		Business enterprises	Higher education	Non-profit institutions	Provincial and municipal gvts	Foreign performers	Other Canadian performers	Total
		in millions of dollars						
R&D								
In-house R&D	1,656	…	…	…	…	…	…	1,656
R&D contracts	26	280	29	7	4	16	14	376
Supporting contracts	83	…	…	…	…	…	…	83
R&D grants and contributions	…	489	1,631	131	36	83	20	2,390
Research fellowships	12	5	49	0	0	17	9	92
Administration of extramural programs	227	…	…	…	…	…	…	227
Capital expenditures	220	…	…	…	…	…	…	220
Sub-total R&D	**2,224**	**774**	**1,709**	**138**	**40**	**116**	**43**	**5,044**
RSA								
Data collection	1,375	55	4	11	4	8	4	1,461
Information services[5]	567	20	29	12	1	23	3	655
Special services and studies[6]	267	169	4	17	3	52	17	529
Education support	8	4	124	5	0	10	10	161
Administration of extramural programs	52	…	…	…	…	…	…	52
Capital expenditures	111	…	…	…	…	…	…	111
Sub-total RSA	**2,380**	**248**	**161**	**45**	**8**	**93**	**34**	**2,969**
Total	**4,604**	**1,022**	**1,870**	**183**	**48**	**209**	**77**	**8,013**

See notes at end of section.

Table 1.19 Federal expenditures, by activity and performer, 2003-04

Activity	Intramural	Performer						
		Business enterprises	Higher education	Non-profit institutions	Provincial and municipal gvts	Foreign performers	Other Canadian performers	Total
		in millions of dollars						
R&D								
In-house R&D	1,649	…	…	…	…	…	…	1,649
R&D contracts	24	292	29	6	4	16	13	384
Supporting contracts	74	…	…	…	…	…	…	74
R&D grants and contributions	…	535	1,968	224	38	92	12	2,869
Research fellowships	12	5	41	0	0	17	16	91
Administration of extramural programs	232	…	…	…	…	…	…	232
Capital expenditures	183	…	…	…	…	…	…	183
Sub-total R&D	**2,174**	**832**	**2,038**	**230**	**42**	**125**	**41**	**5,482**
RSA								
Data collection	1,324	55	4	12	4	10	4	1,413
Information services[5]	588	20	120	10	1	26	3	768
Special services and studies[6]	267	162	4	12	3	60	7	515
Education support	9	4	148	5	0	11	13	190
Administration of extramural programs	52	…	…	…	…	…	…	52
Capital expenditures	134	…	…	…	…	…	…	134
Sub-total RSA	**2,374**	**241**	**276**	**39**	**8**	**107**	**27**	**3,072**
Total	**4,548**	**1,073**	**2,314**	**269**	**50**	**232**	**68**	**8,554**

See notes at end of section.

Table 1.20 Performers of federal expenditures on S&T, 1994-95 to 2003-04

Department or agency	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02[r]	2002-03[p]	2003-04[p]
					in millions of dollars					
ACOA	41	34	21	7	29	27	27	14	41	82
AECB	7	7	4	3	3	…	…	…	…	…
C&I	2	1	2	2	2	3	2	4	4	3
CBC	8	7	7	6	…	…	…	…	…	…
CCMD	2	2	2	1	2	1	1	1	2	1
CFIA	..	..	28	30	30	32	37	38	46	45
CHRC	1	1	0	1	1	1	…	…	…	…
CMHC	24	21	19	20	25	30	35	24	33	36
CMN	26	29	35	26	23	23	26	28	29	38
CNSC	…	…	…	…	…	3	4	3	3	3
COL	4	3	4	1	1	1	1	1	1	2
CSTM	24	24	25	24	23	24	26	29	33	39
EPC	1	1	0	0	…	…	…	…	…	…
FIN	22	20	19	20	22	26	25	28	27	27
FORD - / CED(Qué)	35	25	29	22	23	13	10	17	27	21
IAND	13	8	5	4	2	4	4	4	5	5
JUS	7	6	6	6	9	14	14	16	17	18
NEB	5	4	3	2	1	1	1	1	1	1
NFB	1	1	1	1	1	1	1	2	1	1
NGC	34	37	33	46	49	42	43	45	50	49
NREV / CCRA	8	7	6	7	9	9	8	9	8	8
NTA	1	...	...	...	…	…	…	…	…	…
PCO	4	2	0	0	0	5	5	6	15	5
PSCC	1	1	2	7	6	7	7	7	7	7
PW&GS	6	6	6	5	6	6	7	9	9	9
RCMP	1	0	1	1	1	1	1	1	1	1
SGEN	6	6	6	5	5	5	5	6	6	6
SWC	0	1	1	2	4	3	3	5	4	4
TC	30	21	17	20	20	17	18	23	26	29
WEDC	18	16	14	9	13	24	17	31	30	30
Minor S&T performers	**333**	**292**	**297**	**278**	**310**	**324**	**328**	**352**	**426**	**470**
Major S&T performers*	**5,494**	**5,401**	**5,397**	**5,231**	**5,492**	**5,928**	**6,379**	**7,817**	**7,586**	**8,083**
Total	**5,827**	**5,693**	**5,694**	**5,509**	**5,802**	**6,252**	**6,707**	**8,169**	**8,012**	**8,553**

* *See table 1.5*

Table 1.21 Federal expenditures on intramural R&D, by department or agency, 1994-95 to 2003-04

Department or agency	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02[r]	2002-03[p]	2003-04[p]
					in millions of dollars					
AGR	306	317	346	338	333	351	339	318	355	356
AECL	140	143	219	154	114	123	128	168	138	132
CFIA	...	...	12	13	11	10	13	12	16	17
CSA	54	63	57	49	81	51	166	152	150	141
EC	146	131	113	106	93	115	125	147	188	148
F & O	111	89	92	75	105	108	128	119	124	117
HC	29	33	41	40	39	43	41	72	64	69
IDRC	21	20	28	27	28	38	36	31	34	34
IND[2]	85	82	43	38	39	39	42	48	49	50
NDEF	146	127	136	140	142	173	154	139	133	139
NRCan	305	342	320	309	303	307	334	243	232	242
NRC	321	294	300	340	349	389	442	496	547	520
NSERC	17	17	17	17	20	22	25	31	35	36
Other	73	69	68	74	86	90	107	127	158	173
Total	**1,754**	**1,727**	**1,792**	**1,720**	**1,743**	**1,859**	**2,080**	**2,103**	**2,223**	**2,174**

Note

1. *The large increase in transfer payment expenditures in 2001-02 is due to one-time grant payment made to the Foundation for Sustainable Development Technology in Canada ($50M).*
2. *Figures for Industry Canada, 1993-94 reflect the reorganization of Industry, Science and Technology Canada and program components of Communications, Consumer and Corporate Affairs and Investment Canada.*
3. *As reported by the funder, the federal government, not by the performers.*
4. *Other Canadian performers include provincial and municipal governments.*
5. *Includes information services and museum services.*
6. *Includes testing and standardization, economic and feasibility studies and operations and policy studies.*

2. Federal personnel

2. Federal personnel

In this section intramural expenditure data are complemented by data on the person-years devoted to scientific activities.

Person-year is a measure of the time actually devoted to the conduct of scientific activities. An employee who is engaged in scientific activities for half a year has a person-year full-time equivalence (FTE) of 0.5.

Personnel statistics for 2003-04 were based on the plans of departments and agencies at the beginning of the fiscal year.

In 2003-04, 32,335 federal government person-years were devoted to S&T activities, of which 53% were engaged in RSA activities.

The international comparison of total government R&D personnel is shown in table 2.1.

Table 2.1 Government sector total R&D personnel (FTE) for selected OECD countries

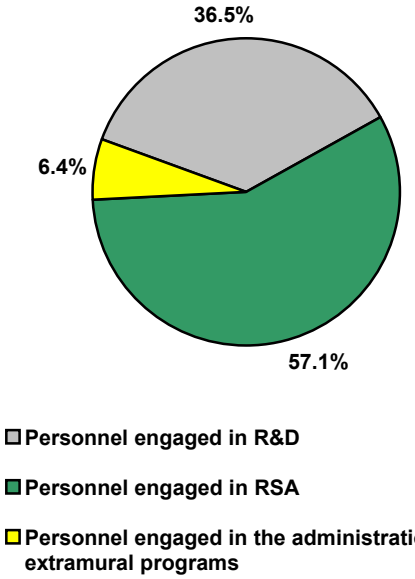
Countries	1995	1996	1997[r]	1998[r]	1999[r]	2000[r]	2001[p]	2002[p]
				Person-years				
Australia	..	19,388	..	18,710	..	18,407	..	..
Austria	..	..	..	2,104	..	..	..	..
Belgium	2,019	2,072	2,144	2,886	3,132	3,493	3,678	..
Canada*	**17,743**	**16,613**	**16,840**	**16,530**	**..**	**16,548**	**..**	**..**
Denmark	5,439	5,506	5,675	..	6,236	5,715	5,576	..
Finland	6,430	..	6,826	7,498	7,454	7,314	7,288	..
France	68,539	69,184	52,693	52,082	53,452	53,388	49,380	..
Germany	75,148	74,725	73,495	73,369	71,435	71,454	71,906	72,263
Italy	33,039	32,225	31,292	31,999	30,835	31,231	..	..
Japan	55,990	56,176	56,554	58,762	59,025	59,254	62,768	..
Netherlands	16,020	16,030	16,160	16,451	16,565	13,400	13,609	..
Spain	17,153	17,866	19,189	20,170	22,283	22,400	23,467	..
Sweden	3,518	..	3,334	..	3,195	..	2,817	..
United Kingdom	28,919	27,486	25,897	29,197	29,752	29,686	23,421	..
United States	..	..	..	..	..	..	..	..

** Including Provincial Government personnel.*

Source: OECD. Main Science and Technology Indicators 2003.

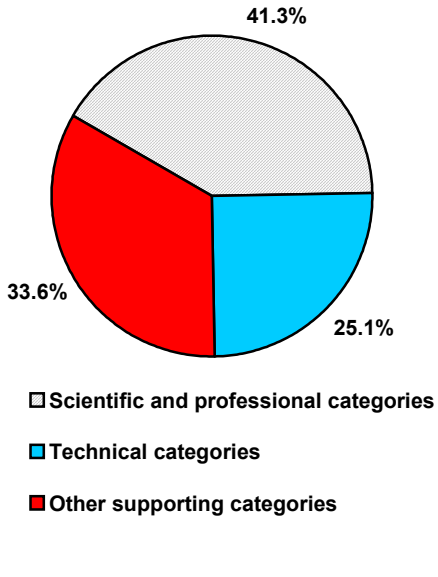
Chart 2.1 Federal personnel engaged in S&T activities, 2003-04

By activity



***Source**: table 2.2.*

By category



***Source**: table 2.5.*

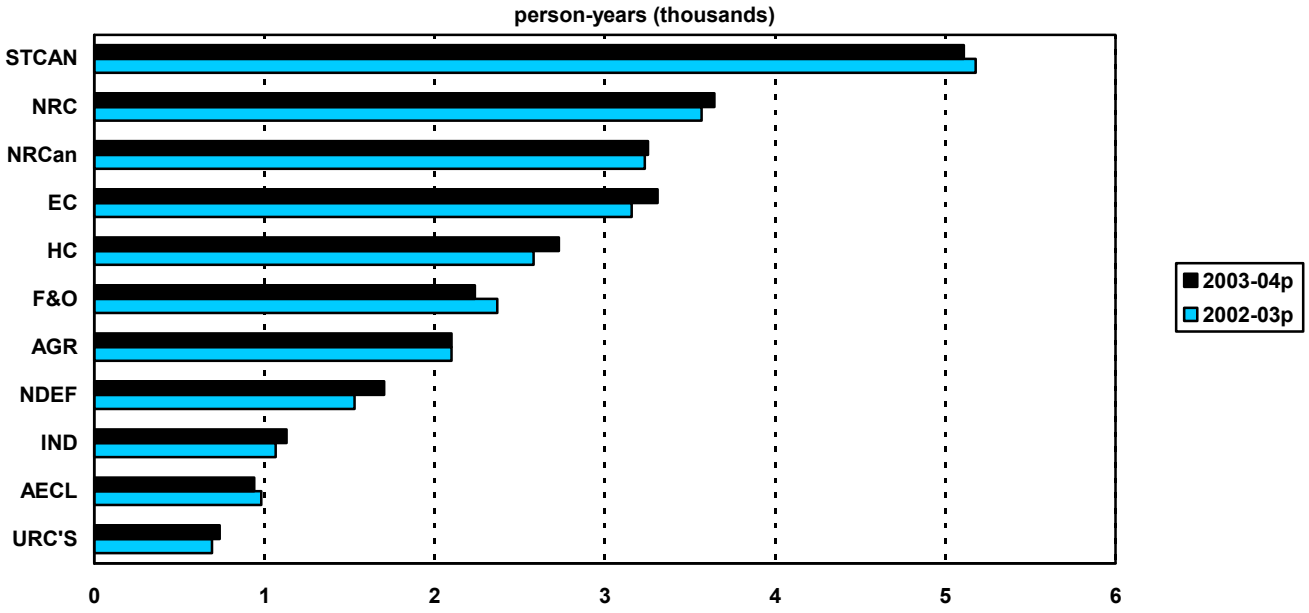
The estimated total of person-years decreased by 4,660 or 13.7% from 1994-95 to 1999-00 or an average of 2.7% per year. A decrease is estimated for 2003-04 of 1.1% or 366 person-years.

For 2003-04, 68% of the estimated total personnel were in Natural Sciences and Engineering, of which 67% were engaged in Research and Development (R&D). In contrast, personnel in Social Sciences and Humanities will account for 32%, of which only 5% will be engaged in R&D.

For the Social Sciences and Humanities, Statistics Canada remains the largest employer of personnel for S&T. Note that the increases for Statistics Canada in 2001-02 and 2002-03 are due to the 2001 Census.

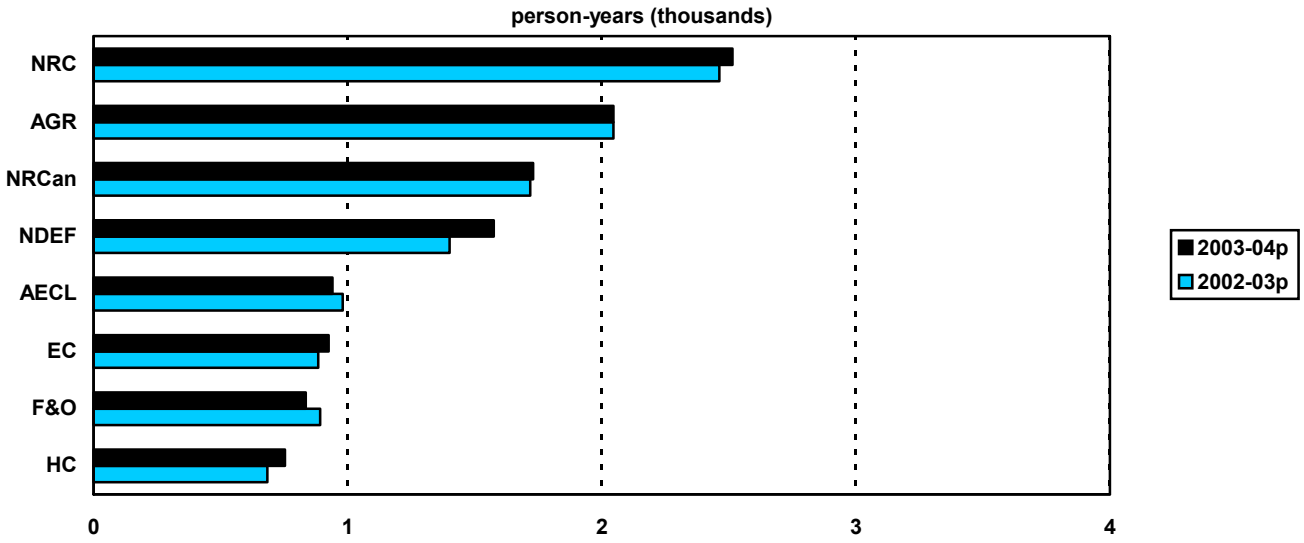
Sixty-four percent of total S&T personnel are in two categories: Scientific and professional (40%) and technical (24%).

Chart 2.2 Federal personnel engaged in S&T activities, by department or agency, 2002-03 and 2003-04



Source: *table 2.3*

Chart 2.3 Federal personnel engaged in R&D activities, by department or agency, 2002-03 and 2003-04



Source*: table 2.4*

Table 2.2 Federal personnel engaged in S&T activities, 1994-95 to 2003-04

Activity	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01[r]	2001-02[r]	2002-03[p]	2003-04[p]
						person-years				
Total S&T										
Research and development	15,369	14,312	13,645	12,798	12,533	12,765	13,439	12,323	11,992	12,338
Related scientific activities	16,189	16,021	15,329	15,437	15,372	16,189	16,955	19,805	19,128	19,319
Administration of extramural R&D programs	1,363	1,243	1,191	1,155	1,196	1,315	1,263	1,417	1,560	1,638
Administration of extramural RSA programs	429	430	429	398	384	441	482	491	492	512
Total	**33,349**	**32,005**	**30,594**	**29,787**	**29,485**	**30,711**	**32,139**	**34,035**	**33,172**	**33,807**
Natural sciences and engineering:										
Research and development	14,966	13,926	13,235	12,429	12,179	12,353	13,034	11,829	11,508	11,806
Related scientific activities	7,155	7,129	6,487	6,656	6,457	7,035	6,957	8,935	9,260	9,459
Administration of extramural R&D programs	1,148	1,045	1,025	998	1,039	1,144	1,086	1,211	1,334	1,399
Administration of extramural RSA programs	247	255	259	230	217	241	273	267	256	271
Total	**23,516**	**22,355**	**21,006**	**20,313**	**19,891**	**20,773**	**21,349**	**22,241**	**22,359**	**22,935**
Social sciences and humanities:										
Research and development	403	385	410	369	355	412	405	494	484	533
Related scientific activities	9,034	8,892	8,842	8,781	8,915	9,154	9,998	10,871	9,868	9,860
Administration of extramural R&D programs	215	198	166	157	157	171	177	205	226	238
Administration of extramural RSA programs	181	175	170	168	167	200	209	224	236	241
Total	**9,833**	**9,650**	**9,588**	**9,475**	**9,594**	**9,938**	**10,790**	**11,794**	**10,813**	**10,872**

Table 2.3 Federal personnel engaged in S&T activities, by major department or agency, 1994-95 to 2003-04

Department or agency	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02[r]	2002-03[p]	2003-04[p]
					person-years					
AECL	2,568	2,560	1,700	1,460	1,195	1,170	886	950	981	940
AGR	3,635	3,365	2,981	2,593	2,569	2,546	2,869	2,720	2,099	2,099
CH	708	628	565	537	…	…	…	…	…	…
EC[1]	3,523	3,417	2,967	2,901	2,844	3,001	2,992	3,013	3,158	3,309
F&O	2,101	2,318	2,319	2,124	2,059	2,257	2,400	2,373	2,368	2,237
HC	1,412	1,334	1,622	1,872	1,807	1,911	1,842	2,471	2,582	2,729
IND	878	880	901	931	1,001	987	1,072	950	1,065	1,129
NDEF	1,664	1,248	1,428	1,424	1,567	1,560	1,617	1,428	1,529	1,703
NRC	3,307	3,099	3,097	3,202	3,266	3,310	3,426	3,612	3,568	3,643
NRCan	3,562	3,265	3,052	2,848	2,698	2,807	2,870	3,161	3,234	3,254
STCAN	4,607	4,894	5,004	4,959	5,042	5,096	5,811	6,320	5,179	5,109
Other	5,384	4,997	4,958	4,936	5,437	6,066	6,354	7,037	7,409	7,655
Total	**33,349**	**32,005**	**30,594**	**29,787**	**29,485**	**30,711**	**32,139**	**34,035**	**33,172**	**33,807**

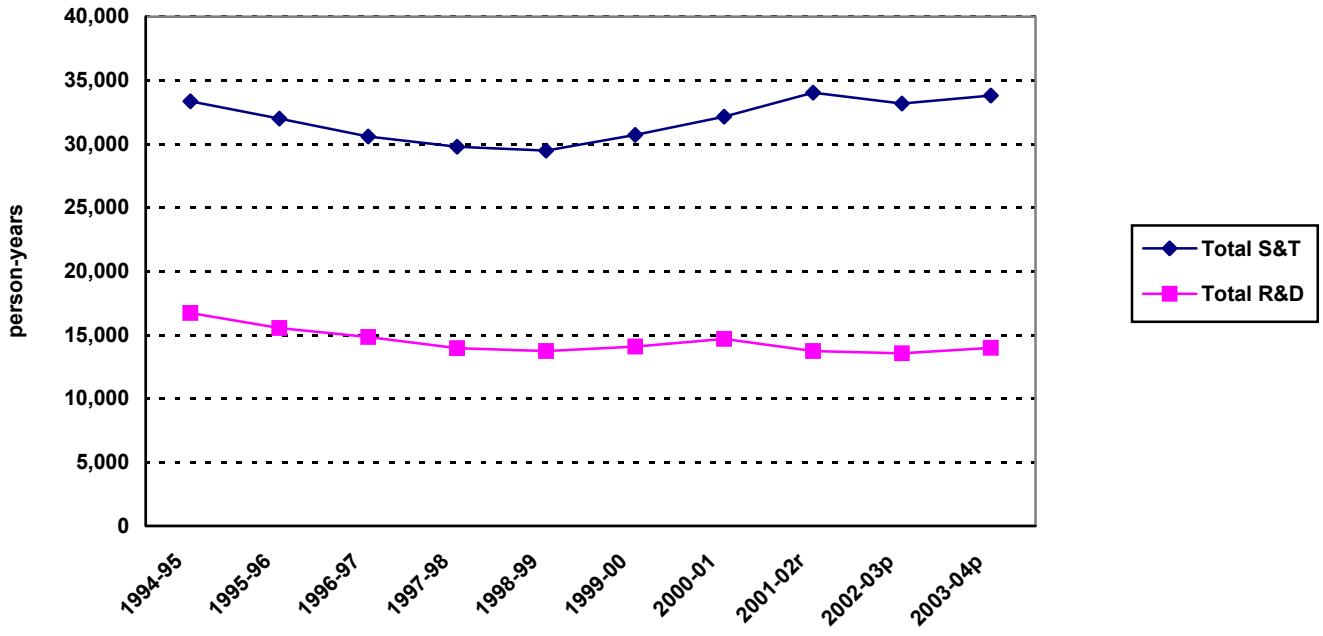
1. The Government reorganization transferred the Canadian Parks Services to the Department of Canadian Heritage for 1994-95.

Table 2.4 Federal personnel engaged in R&D, by major department or agency, 1994-95 to 2003-04

Department or agency	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01[r]	2001-02[r]	2002-03[p]	2003-04[p]
	person-years									
AECL	2,024	2,015	1,700	1,460	1,195	1,170	886	950	981	940
AGR	3,244	3,011	2,820	2,427	2,426	2,410	2,800	2,664	2,046	2,046
EC	815	976	832	771	736	830	840	844	884	926
F&0	1,004	902	877	798	772	853	902	895	891	835
HC	327	353	477	539	517	515	524	665	684	753
IND[1]	428	411	360	350	395	401	449	422	481	484
NDEF	1,602	1,179	1,236	1,169	1,298	1,291	1,348	1,298	1,401	1,575
NRC	2,897	2,692	2,651	2,729	2,777	2,808	2,934	2,507	2,463	2,514
NRCan	2,976	2,646	2,536	2,371	2,284	2,306	2,435	1,689	1,719	1,730
STCAN	118	127	125	144	141	158	167	194	153	153
Other	1,297	1,243	1,222	1,195	1,188	1,338	1,417	1,611	1,849	2,020
Total	**16,732**	**15,555**	**14,836**	**13,953**	**13,729**	**14,080**	**14,702**	**13,739**	**13,552**	**13,976**

1. *Figures for Industry Canada, 1994-95 reflect the reorganization of Industry, Science and Technology Canada and program components of Communications, Consumer and Corporate Affairs and Investment Canada*

Chart 2.4 Federal personnel engaged in R&D and S&T activities, 1994-95 to 2003-04



Source: tables 2.3 and 2.4

Table 2.5 Federal personnel engaged in S&T activities, by category and activity, 1994-95 to 2003-04

Category	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01[r]	2001-02[r]	2002-03[p]	2003-04[p]
					person-years					
S&T personnel										
Executive	682	653	...	...	...	...	...	...	…	…
Scientific and professional[1]	11,917	11,327	11,770	11,544	11,732	12,142	12,540	13,098	13,540	13,974
Administrative and foreign service	4,458	4,590	...	...	...	...	…	…	…	…
Technical[1]	8,196	7,846	7,773	7,653	7,426	7,775	7,854	8,635	8,411	8,471
Administrative support[1]	5,001	4,786	11,051	10,590	10,327	10,794	11,745	12,302	11,221	11,362
Operational	2,906	2,726	...	...	...	...	…	…	…	…
Military personnel	188	76	...	...	...	...	…	…	…	…
Total S&T personnel[2]	**33,349**	**32,005**	**30,594**	**29,787**	**29,485**	**30,711**	**32,139**	**34,035**	**33,172**	**33,807**
R&D Personnel										
Executive	232	229	...	...	...	...	…	…	…	…
Scientific and professional[1]	6,341	5,999	6,312	5,848	5,852	6,018	6,125	5,606	5,846	6,094
Administrative and foreign service	1,550	1,560	...	...	...	...	…	…	…	…
Technical[1]	4,689	4,296	4,098	3,906	3,824	3,870	3,815	3,782	3,682	3,740
Administrative support[1]	1,863	1,727	4,426	4,198	4,053	4,192	4,762	4,351	4,025	4,142
Operational	1,883	1,677	...	...	...	...	…	…	…	…
Military personnel	173	67	...	...	...	...	…	…	…	…
Total R&D personnel[2]	**16,732**	**15,555**	**14,836**	**13,953**	**13,729**	**14,080**	**14,702**	**13,739**	**13,552**	**13,976**

1. *Questions on Personnel resources have been compressed from seven to three principal categories; Scientific & Professional (including Executive), Technical and Administrative Support (which includes Administrative and Foreign Service, Operational and Military).*
2. *Including Administration of Extramural Programs Personnel.*

Table 2.6 Federal personnel engaged in S&T, by category and by major department or agency, 2003-04

Department or agency	R&D personnel[1]				S&T personnel[1]			
	Scientific and professional[2]	Technical	Other[3]	Total	Scientific and professional[2]	Technical	Other[3]	Total
	person-years							
AECL	520	300	120	940	520	300	120	940
AGR	676	775	595	2,046	712	782	605	2,099
EC	563	235	128	926	1,616	990	703	3,309
F&O	319	324	192	835	877	833	527	2,237
HC	419	258	76	753	1,739	597	393	2,729
IND	194	55	235	484	555	61	513	1,129
NDEF	657	363	555	1,575	711	431	562	1,704
NRC	983	692	839	2,514	1,420	983	1,240	3,643
NRCan	921	557	252	1,730	1,716	990	548	3,254
STCAN	98	13	42	153	1,203	1,320	2,586	5,109
Other	744	168	1,108	2,020	2,905	1,184	3,565	7,654
Total	**6,094**	**3,740**	**4,142**	**13,976**	**13,974**	**8,471**	**11,362**	**33,807**

1. Including Administration of Extramural Programs Personnel.
2. Including executives.
3. Including administration and foreign service, administrative support, operations and military personnel.

Table 2.7 Federal personnel engaged in S&T activities in the natural sciences and engineering, by category and activity, 1994-95 to 2003-04

Category	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02[r]	2002-03[p]	2003-04[p]
					person-years					
S&T personnel										
Executive	342	329	...	...	...	...	...	…	…	…
Scientific and professional[1]	9,158	8,709	8,937	8,655	8,681	9,005	9,158	9,594	10,050	10,406
Administrative and foreign service	2,217	2,231	...	...	...	...	…	…	…	…
Technical[1]	6,474	6,131	6,020	5,816	5,553	5,833	5,742	6,343	6,256	6,329
Administrative support[1]	2,707	2,591	6,049	5,842	5,657	5,935	6,449	6,304	6,053	6,200
Operational	2,453	2,308	...	...	...	...	…	…	…	…
Military personnel	166	54	...	...	...	...	…	…	…	…
Total S&T personnel[2]	**23,516**	**22,355**	**21,006**	**20,313**	**19,891**	**20,773**	**21,349**	**22,241**	**22,359**	**22,935**
R&D personnel										
Executive	208	204	...	...	...	...	...	…	…	…
Scientific and professional[1]	6,107	5,783	6,032	5,609	5,617	5,749	5,838	5,250	5,474	5,668
Administrative and foreign service	1,448	1,461	...	...	...	...	…	…	…	…
Technical[1]	4,620	4,231	4,039	3,837	3,761	3,795	3,750	3,701	3,601	3,657
Administrative support[1]	1,697	1,570	4,188	3,981	3,839	3,953	4,532	4,088	3,768	3,880
Operational	1,874	1,668	...	...	...	...	…	…	…	…
Military personnel	160	54	...	...	...	...	…	…	…	…
Total R&D personnel[2]	**16,114**	**14,971**	**14,260**	**13,427**	**13,217**	**13,497**	**14,120**	**13,040**	**12,842**	**13,205**

1. Questions on personnel resources have been compressed from seven to three principal categories: Scientific & Professional (including Executive), Technical and Administrative Support (which includes Administrative and Foreign Service, Operational and Military).

2. Including Administration of Extramural Programs Personnel.

Table 2.8 Federal personnel engaged in S&T activities in the social sciences and humanities, by category and activity, 1994-95 to 2003-04

Category	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01[r]	2001-02[r]	2002-03[p]	2002-03[p]
					person-years					
S&T personnel										
Executive	341	324	...	...	...	...	…	…	…	…
Scientific and professional[1]	2,759	2,618	2,833	2,889	3,051	3,137	3,382	3,504	3,491	3,568
Administrative and foreign service	2,242	2,359	...	...	...	...	…	…	…	…
Technical[1]	1,723	1,715	1,752	1,837	1,873	1,942	2,112	2,292	2,155	2,143
Administrative support[1]	2,295	2,195	5,003	4,748	4,670	4,859	5,296	5,998	5,168	5,162
Operational	453	417	...	...	...	...	…	…	…	…
Military personnel	22	22	...	...	...	...	…	…	…	…
Total S&T personnel[2]	**9,833**	**9,650**	**9,588**	**9,475**	**9,594**	**9,938**	**10,790**	**11,794**	**10,814**	**10,873**
R&D personnel										
Executive	24	25	...	...	...	...	…	…	…	…
Scientific and professional[1]	234	217	279	240	236	269	287	356	372	426
Administrative and foreign service	103	98	...	...	...	...	…	…	…	…
Technical [1]	69	65	58	69	63	75	65	81	80	83
Administrative support[1]	166	157	238	217	213	239	230	263	257	262
Operational	9	9	...	...	...	...	…	…	…	…
Military personnel	13	13	…	...	...	...	…	…	…	…
Total R&D personnel[2]	**618**	**584**	**576**	**526**	**512**	**583**	**582**	**699**	**710**	**771**

1. Questions on personnel resources have been compressed from seven to three principal categories: Scientific & Professional (including Executive), Technical and Administrative Support (which includes Administrative and Foreign Service, Operational and Military).

2. Including Administration of Extramural Programs Personnel.

3. Departmental or agency highlights

3. Departmental or agency expenditures and personnel for science and technology

This section provides information on the scientific programs and activities carried out by departments in support of their mandates. Departments and agencies that are major performers or funders are reviewed separately. For comparison purposes the three university research councils are grouped together in table 3.17.

The departments with the largest estimated expenditures on science activities in 2003-04 were Environment Canada, the National Research Council, the Natural Sciences and Engineering Research Council, the Canadian Institutes of Health Research and Statistics Canada. In 2003-04 they accounted for 39% of the government's total expenditures. The three research councils, the Canadian Institutes of Health Research, the Natural Sciences and Engineering Research Council, the Social Sciences and Humanities Research Council, as well as the Canada Foundation for Innovation funded 92% of federal government expenditures in the university sector.

The National Research Council, the departments of Agriculture and Agri-Food Canada, Environment Canada, Fisheries and Oceans Canada, Statistics Canada and Natural Resources Canada were the major performers of S&T in the federal government. Together they accounted for 61% of the total intramural activity.

Chart 3.1 Federal S&T expenditures by department or agency, 2003-04 (percent change from previous year)

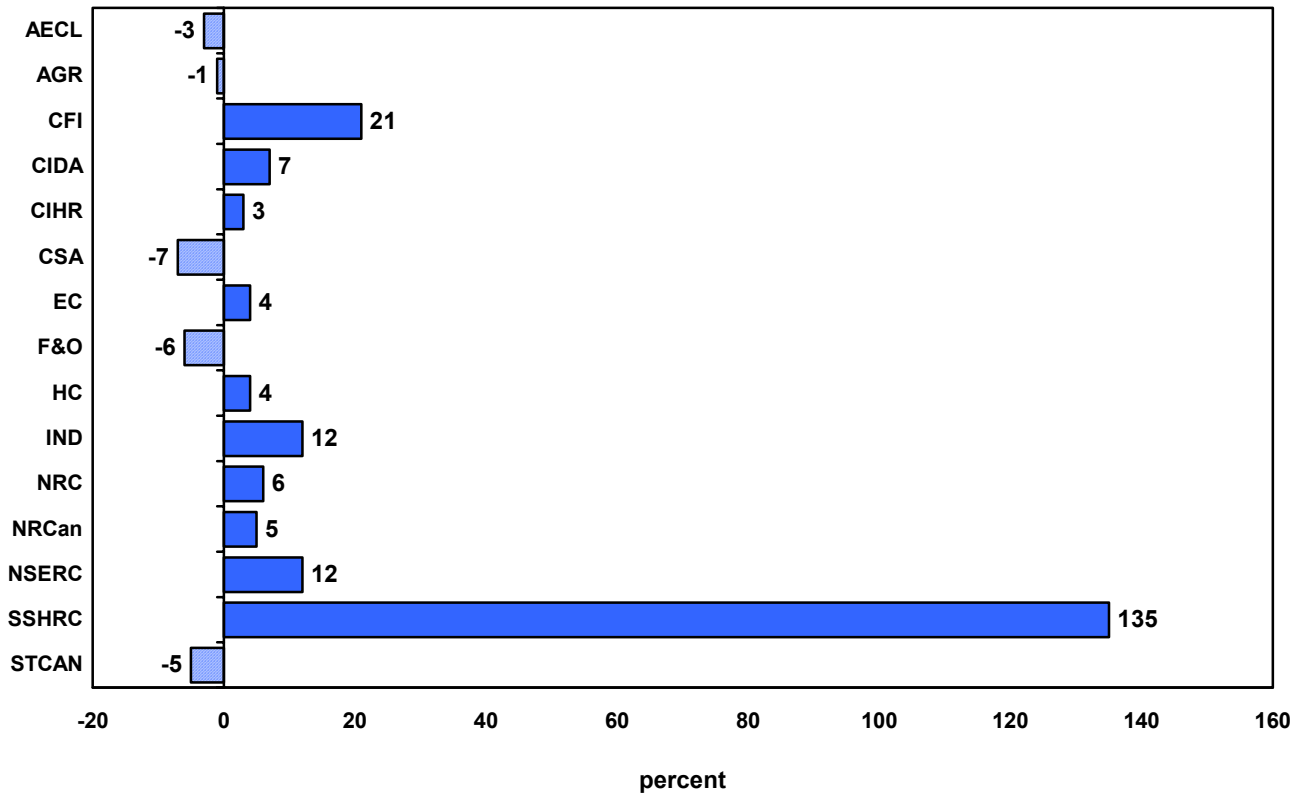


Table 3.1 Federal expenditures on S&T and R&D as a percentage of federal budgetary main estimates by major departments, 2003-04

Department or agency	Budgetary main estimates[1]	S&T		R&D	
	in millions of dollars	in millions of dollars	percent[2]	in millions of dollars	percent[2]
AGR	1,309	381	29.1	375	28.6
AECL	133	143	107.5	143	107.5
CIDA	2 093	333	15.9	51	2.4
CIHR	669	651	97.3	643	96.1
CSA	319	307	96.2	295	92.5
EC	721	616	85.4	219	30.4
F&O	1,468	319	21.7	121	8.2
HC	2,760	351	12.7	107	3.9
IND	1,408	472	33.5	389	27.6
NDEF	12,255	332	2.7	297	2.4
NRC	646	722	111.8	652	100.9
NRCan	812	502	61.8	285	35.1
NSERC	708	775	109.5	691	97.6
SSHRC	227	474	208.8	317	139.6
STCAN	383	561	146.5	18	4.7
Other	150,026	1,614	1.1	878	0.6
Total	**175,937**	**8,553**		**5,481**	

1. *Part 1, Government expenditures plan, estimates.*
2. *Some departments S&T and R&D exceed 100% of the federal budgetary main estimates due to receipts and revenues and cost of services provided without charge by other departments.*

Agriculture and Agri-food Canada (AGR)

The Department of Agriculture and Agri-Food Canada, plans to spend $381 million on S&T in 2003-04, with 98% devoted to R&D. Almost all S&T activities are conducted intramurally; only 5% is split among the industrial sector, universities and other recipients. S&T activities are conducted through research centres across the country that specialize in local problems. The research centres study soil properties, forestry, water use and management, energy, environmental quality, production development including animal crossbreeding, feed lot systems, genetics, processing, distribution, retailing and consumer concerns.

Table 3.2 Agriculture and Agri-Food Canada: resources on S&T, by activity and performer, 1994-95 to 2003-04

Resources on S&T	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02[r]	2002-03[p]	2003-04[p]
					in millions of dollars					
Total S&T expenditures	**356**	**358**	**368**	**359**	**351**	**387**	**363**	**337**	**384**	**381**
NSE	**347**	**348**	**359**	**350**	**344**	**380**	**356**	**331**	**379**	**376**
R&D[1]	321	327	350	340	335	370	354	329	374	375
RSA	26	21	9	10	9	10	2	2	5	1
SSH	**9**	**10**	**9**	**9**	**7**	**7**	**7**	**6**	**5**	**5**
R&D[1]	2	0	0	…	…	…	…	…	…	…
RSA	7	10	9	9	7	7	7	6	5	5
Total capital expenditures	**24**	**23**	**35**	**34**	**32**	**26**	**34**	**40**	**44**	**44**
By performer					percent					
Intramural	94	96	98	99	99	95	96	96	94	95
Business enterprises	2	1	1	0	0	0	0	0	0	0
Higher education	1	1	0	0	0	0	0	0	0	0
Other Canadian performers[3]	3	2	0	0	0	5	4	4	6	5
Foreign performers	0	0	1	1	0	0	0	0	0	0
S&T personnel					person-years					
Total	**3,635**	**3,365**	**2,981**	**2,593**	**2,569**	**2,546**	**2,869**	**2,720**	**2,099**	**2,099**
Scientific and professional[4]	1,044	1,014	866	748	789	780	765	674	712	712
Technical	1,190	1,119	947	836	812	810	968	961	782	782
Other[5]	1,401	1,232	1,168	1,009	968	956	1,136	1,085	605	605

See notes at end of section.

Atomic Energy of Canada Limited (AECL)

In 2003-04, Atomic Energy of Canada Limited plans to spend $143 million on natural sciences and engineering research and development. Ninety-two percent of the activities are performed intramurally in facilities of the agency. It operates two major research establishments, Chalk River Nuclear Laboratories and Whiteshell Nuclear Research Establishment at Pinawa, Manitoba. The Whiteshell laboratories are in the transition process leading to eventual closure and decommissioning.

Table 3.3 Atomic Energy of Canada Limited: resources on S&T, by activity and performer, 1994-95 to 2003-04

Resources on S&T	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02[r]	2002-03[p]	2003-04[p]
					in millions of dollars					
Total S&T expenditures	**169**	**168**	**240**	**174**	**135**	**132**	**136**	**178**	**148**	**143**
NSE	**169**	**168**	**240**	**174**	**135**	**132**	**136**	**178**	**148**	**143**
R&D[1]	163	163	240	174	135	132	136	178	148	143
RSA	6	5	0	0	0	0	0	0	0	0
Total capital expenditures	**8**	**7**	**0**	**0**	**1**	**1**	**1**	**15**	**8**	**0**
By performer					percent					
Intramural	86	88	91	89	84	93	94	94	93	92
Business enterprises	12	9	7	8	12	5	4	3	4	5
Higher education	1	1	0	0	1	0	0	0	0	0
Other Canadian performers[3]	0	0	0	0	0	0	0	1	1	1
Foreign performers	1	2	2	3	3	2	2	2	2	2
S&T personnel					person-years					
Total	**2,568**	**2,560**	**1,700**	**1,460**	**1,195**	**1,170**	**886**	**950**	**981**	**940**
Scientific and professional[4]	891	897	780	670	578	576	464	499	542	520
Technical	754	745	550	470	392	391	314	333	318	300
Other[5]	923	918	370	320	225	203	108	118	121	120

See notes at end of section.

Canada Foundation for Innovation (CFI)

The federal government has made a major commitment to promoting innovation. In 1997, the Canada Foundation for Innovation was created with an $800 million investment to fund new and modernized research infrastructure at universities, colleges, research hospitals and not-for-profit research institutions. Substantial additional funding has been allocated to CFI for future years.

Table 3.4 Canada Foundation for Innovation: resources on S&T, by activity and performer, 1999-00 to 2003-04

Resources on S&T	1999-00	2000-01	2001-02	2002-03[r]	2003-04[p]
			in millions of dollars		
Total S&T expenditure	**118**	**188**	**239**	**359**	**433**
NSE & SSH	**118**	**188**	**239**	**359**	**433**
R&D[1]	118	188	239	359	433
RSA	0	0	0	0	0
By performer			percent		
Intramural	3	3	3	2	2
Higher education	97	97	97	98	98
S&T personnel			person-years		
Total	**19**	**23**	**30**	**39**	**43**
Scientific and professionnal[4]	10	10	13	15	15
Technical	5	8	12	15	18
Other[5]	4	5	5	9	10

See notes at end of section.

Canadian International Development Agency (CIDA)

The Canadian International Development Agency provides Official Development Assistance (ODA) to developing countries to help them achieve self-sustainable economic and social development. In 2003-04, this will include investments of $215 million in natural sciences and engineering, representing 65% of CIDA's science expenditures; and $118 million on social sciences and humanities, representing 35% of expenditures.

CIDA derives it scientific component from a computer model based upon past typical expenditure patterns. Data provided should be considered only as a gross estimate as shifts in expenditure patterns are not readily identifiable.

Table 3.5 Canadian International Development Agency: resources on S&T, by activity and performer, 1994-95 to 2003-04

Resources on S&T	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02[r]	2002-03[p]	2003-04[p]
						in millions of dollars				
Total S&T expenditures	**308**	**334**	**339**	**303**	**314**	**335**	**358**	**386**	**310**	**333**
NSE	**177**	**218**	**222**	**194**	**200**	**216**	**231**	**240**	**200**	**215**
R&D[1]	45	37	37	34	35	35	41	41	23	36
RSA	132	181	185	160	165	181	190	199	177	178
Data collection and information services	24	33	34	27	28	30	33	40	28	31
Special services and studies	94	133	134	117	121	132	141	142	131	129
Other[2]	14	15	17	16	16	20	16	17	18	18
SSH	**131**	**116**	**117**	**109**	**114**	**119**	**127**	**146**	**110**	**118**
R&D	17	15	15	14	15	15	16	15	14	14
RSA	114	101	102	95	99	104	111	131	96	104
Data collection and information services	31	26	26	25	25	25	28	45	23	26
Special services and studies	44	38	38	34	39	41	50	52	37	43
Other[2]	39	37	38	36	35	37	33	34	36	35
By performer						percent				
Intramural	4	4	4	5	5	5	5	4	6	6
Business enterprises	34	48	48	46	46	47	46	43	52	46
Higher education	21	19	19	19	18	18	15	14	18	17
Other Canadian performers	6	5	5	5	5	4	4	4	5	5
Foreign performers	35	24	24	25	26	26	30	35	19	26
S&T personnel						person-years				
Total	**155**	**188**	**194**	**194**	**196**	**210**	**210**	**203**	**214**	**214**
Scientific and pofessional[4]	32	36	34	32	33	32	35	37	45	45
Technical	3	3	3	3	3	3	1	0	0	0
Other[5]	120	149	157	159	160	175	175	166	169	169

See notes at end of section.

Canadian Space Agency (CSA)

The Canadian Space Agency objectives are "to develop and apply space S&T to meet Canadian needs and foster the development of an international competitive space industry"[6]. CSA is responsible for coordinating all the federal government's policies and programs in civil space-related research, science and technology, industrial development and international cooperation. The CSA's total S&T expenditures in 2003-04 are expected to decrease by 6.7%.

The CSA is responsible for ensuring the implementation of the following programs:

- Earth observation
- Satellite communications
- Canadian space station program
- Canadian astronaut program
- Space science
- Space technology

Table 3.6 Canadian Space Agency: resources on S&T, by activity and performer, 1994-95 to 2003-04

Resources on S&T	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01[r]	2001-02[r]	2002-03[p]	2003-04[p]
					in millions of dollars					
Total S&T expenditures	**320**	**299**	**253**	**230**	**343**	**305**	**310**	**330**	**329**	**307**
NSE	**320**	**299**	**253**	**230**	**343**	**305**	**310**	**330**	**329**	**307**
R&D[1]	314	291	245	224	337	300	298	317	315	295
RSA	6	8	8	6	5	5	12	13	14	12
Total capital expenditures	**7**	**7**	**5**	**3**	**4**	**4**	**35**	**4**	**5**	**4**
By performer					percent					
Intramural	19	24	25	24	25	18	56	49	49	49
Business enterprises	68	62	56	62	65	70	33	41	40	40
Higher education	2	2	3	3	2	2	3	3	3	3
Other Canadian performers[3]	0	0	0	0	0	0	1	0	1	1
Foreign performers	11	12	16	11	8	9	7	7	7	7
S&T personnel					person-years					
Total	**355**	**370**	**392**	**344**	**324**	**377**	**419**	**461**	**528**	**630**
Scientific and professional[4]	195	212	180	164	148	175	186	207	236	282
Technical	23	26	28	25	22	24	22	24	27	33
Other[5]	137	132	184	155	154	178	211	230	265	315

See notes at end of section.

Environment Canada (EC)

The department undertakes programs to reduce risk to human health and the environment. It provides weather and environmental predictions and warnings, as well as emergency preparedness services to enhance safety from environmental hazards. Almost 75% of the department's expenditures are on S&T activities and over half of its employees are classified in S&T.

Environment Canada supports primarily the natural sciences and engineering. With a 2003-04 S&T budget of $616 million. A major part of the department budget (82%) is spent in its own laboratories, with 64% devoted to RSA and 36% to R&D. The department operates a network of laboratories across the country that deal with regional and national environmental concerns.

Table 3.7 Environment Canada: resources on S&T, by activity and performer, 1994-95 to 2003-04

Resources on S&T	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02[r]	2002-03[p]	2003-04[p]
					in millions of dollars					
Total S&T expenditures	**549**	**529**	**456**	**453**	**427**	**538**	**479**	**625**	**594**	**616**
NSE	**544**	**525**	**452**	**450**	**423**	**534**	**475**	**620**	**589**	**611**
R&D[1]	173	163	134	127	115	196	144	222	214	218
RSA	371	362	318	323	308	338	331	399	375	393
Data collection and information services	323	317	283	300	290	320	313	376	360	377
Other[2]	48	45	35	23	18	18	18	23	15	16
SSH	**5**	**4**	**4**	**3**	**4**	**4**	**4**	**5**	**5**	**5**
R&D[1]	1	1	0	0	0	0	0	1	1	1
RSA	4	3	4	3	4	4	4	4	4	4
Total capital expenditures	**51**	**38**	**26**	**29**	**23**	**25**	**28**	**42**	**37**	**31**
By performer					percent					
Intramural	87	88	88	89	86	78	89	81	89	82
Business enterprises	5	5	7	6	8	6	6	6	7	6
Higher education	3	3	2	2	2	2	2	2	1	1
Other Canadian performers[3]	4	3	2	2	3	14	2	10	2	10
Foreign performers	1	1	1	1	1	1	1	1	1	1
S&T personnel					person-years					
Total	**3,523**	**3,417**	**2,967**	**2,901**	**2,844**	**3,001**	**2,992**	**3,013**	**3,158**	**3,309**
Scientific and professional[4]	1,607	1,646	1,408	1,384	1,351	1,465	1,460	1,471	1,542	1,616
Technical	1,065	1,036	972	927	882	903	895	901	945	990
Other[5]	851	735	587	590	611	633	637	641	671	703

See notes at end of section.

Fisheries and Oceans Canada (F&O)

Science in F&O involves the collection, analysis and interpretation of data in the fields of fisheries biology, aquaculture science and oceanography, fish habitat and the marine environment, and hydrography. Using this analysis and interpretation, scientists provide timely advice in support of management for the conservation, protection, and sustainable utilization of marine and aquatic resources, and for safe navigation. The two largest departmental research establishments are the Bedford institute of oceanography in Nova Scotia, and the institute of ocean sciences in British Columbia. Major centres are also located at the Maurice Lamontagne institute in Quebec, and the Freshwater institute in Manitoba. F&O will spend an estimated $319 million on S&T activities in 2003-04, about 6% less than in 2002-03. Ninety-five percent of the activities are performed intramurally.

Table 3.8 Fisheries and Oceans Canada*: resources on S&T, by activity and performer, 1994-95 to 2003-04

Resources on S&T	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02[r]	2002-03[p]	2003-04[p]
					in millions of dollars					
Total S&T expenditures	**237**	**244**	**246**	**204**	**281**	**287**	**367**	**318**	**338**	**319**
NSE	**231**	**238**	**237**	**194**	**271**	**279**	**358**	**307**	327	307
R&D[1]	114	99	95	78	109	110	130	123	128	121
RSA	116	139	142	116	162	169	228	184	199	186
Data collection and information services	102	115	119	97	136	142	165	153	163	153
Other[2]	14	24	23	19	26	27	63	31	36	33
SSH	**6**	**6**	**9**	**10**	**10**	**8**	**9**	**11**	**11**	**12**
R&D[1]	0	0	0	0	0	0	0	0	0	0
RSA	6	6	9	10	10	8	9	11	11	12
Total capital expenditures	**27**	**12**	**7**	**4**	**3**	**3**	**1**	**1**	**1**	**2**
By performer					percent					
Intramural	97	95	97	96	96	97	89	97	95	95
Business enterprises	2	4	2	3	3	0	1	1	1	1
Higher education	0	0	0	0	0	1	0	1	1	1
Other Canadian performers[3]	1	1	1	1	1	2	10	1	3	3
Foreign performers	0	0	0	0	0	0	0	0	0	0
S&T personnel					person-years					
Total	**2,101**	**2,318**	**2,319**	**2,124**	**2,059**	**2,257**	**2,400**	**2,373**	**2,368**	**2,238**
Scientific and professional[4]	821	892	887	814	789	871	935	923	921	877
Technical	789	882	889	810	786	856	909	891	887	833
Other[5]	491	544	543	500	484	530	556	560	560	527

See notes at end of section.

* *Includes Canadian Coast Guard (CCG)*

Foreign Affairs and International Trade (FA&IT)

The Department of Foreign Affairs and International Trade exists to serve Canada and Canadians in world affairs. In 2003-04 the department plans to spend $46 million on S&T activities, with 56% going into financing operations and policy studies by foreign performers, 30% to higher education and 14% to be spent intramurally. With S&T initiatives, Foreign Affairs and International Trade can bring Canada's voice and values to the world.

Table 3.9 Foreign Affairs and International Trade: resources on S&T, by activity and performer, 1994-95 to 2003-04

Resources on S&T	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02[r]	2002-03[p]	2003-04[p]
					in millions of dollars					
Total S&T expenditures	**60**	**58**	**59**	**58**	**49**	**54**	**45**	**48**	**47**	**46**
SSH	**60**	**58**	**59**	**58**	**49**	**54**	**45**	**48**	**47**	**46**
R&D[1]	0	0	0	0	0	0	0	0	0	0
RSA	60	58	59	58	49	54	45	48	47	46
Total capital expenditures	0	0	0	0	0	0	0	0	0	0
By performer					percent					
Intramural	17	19	19	20	20	20	22	21	15	14
Business enterprises	9	1	1	0	0	0	0	0	0	0
Higher education	27	24	24	31	29	30	29	25	28	30
Other Canadian performers[3]	0	2	4	3	0	0	0	2	0	0
Foreign performers	47	54	52	46	51	50	49	52	57	56
S&T personnel					person-years					
Total	**106**	**75**	**75**	**80**	**74**	**74**	**74**	**57**	**60**	**64**
Scientific and professional[4]	27	24	24	34	28	29	29	34	35	36
Technical	2	1	1	1	1	2	2	1	1	1
Other[5]	77	50	50	45	45	43	43	22	25	27

See notes at end of section.

Health Canada (HC)

Health Canada is responsible for maintaining and improving the health of Canadians. The department's major activities include developing health policy; administering the Canada Health Act; protecting health by regulating food, drug, environmental and pesticide safety; promoting disease prevention and health; and providing a range of health services to First Nations and the Inuit.

In 2003-04, it is expected that Health Canada will spend $351 million on S&T activities, 4% more than in 2002-03. Natural science activities account for 85% of these expenditures while 15% will be spent in the social sciences and humanities. Most S&T activities of HC are performed intramurally (84%).

Table 3.10 Health Canada: resources on S&T, by activity and performer, 1994-95 to 2003-04

Resources on S&T	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02[r]	2002-03[p]	2003-04[p]
					in millions of dollars					
Total S&T expenditures	**180**	**201**	**214**	**210**	**204**	**236**	**229**	**311**	**337**	**351**
NSE	**154**	**170**	**187**	**185**	**189**	**219**	**194**	**265**	**283**	**297**
R&D[1]	42	49	60	51	45	47	41	70	72	76
RSA	112	121	127	134	144	172	153	195	211	221
Data collection and information services	76	89	87	95	99	125	97	145	158	166
Special services and studies	29	26	34	34	36	42	41	45	48	50
Other[2]	7	6	6	5	9	5	15	5	5	5
SSH	**26**	**31**	**27**	**25**	**15**	**16**	**35**	**46**	**54**	**54**
R&D[1]	16	14	15	14	9	9	23	31	31	31
RSA	10	17	12	11	6	7	12	15	23	23
Total capital expenditures	**9**	**7**	**6**	**4**	**11**	**5**	**24**	**7**	**8**	**8**
By performer					percent					
Intramural	76	74	76	80	85	89	84	86	83	84
Business enterprises	3	3	2	2	2	1	2	4	5	5
Higher education	12	13	12	9	7	6	3	1	1	1
Other Canadian performers[3]	8	9	9	8	5	4	11	9	11	10
Foreign performers	1	1	1	1	1	0	0	0	0	0
S&T personnel					person-years					
Total	**1,412**	**1,334**	**1,622**	**1,872**	**1,807**	**1,911**	**1,842**	**2,471**	**2,582**	**2,729**
Scientific and professional[4]	884	789	1,008	1,172	1,161	1,123	1,223	1,510	1,630	1,739
Technical	217	235	329	404	367	446	268	601	574	597
Other[5]	311	310	285	296	279	342	351	360	378	393

See notes at end of section.

Industry Canada (IND)

The science and technology (S&T) component of Industry Canada involves identifying and acting upon emerging areas of domestic and international science and technology critical to maintaining a competitive industrial base, linking science, technology and industry to better exploit technology, and providing programs which foster basic research and the promotion of science to Canadian youth.

In 2003-04, Industry Canada plans to spend $472 million on S&T compared to $422 million in 2002-03. The increase reflects the S&T grants under the technology partnerships Canada (TPC).

TPC is a central element in the government's agenda to promote technological development as a catalyst for economic growth and job creation through increased productivity and competitiveness.

Table 3.11 Industry Canada: resources on S&T, by activity and performer, 1994-95 to 2003-04

Resources on S&T	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02[r]	2002-03[p]	2003-04[p]
					in millions of dollars					
Total S&T expenditures	**388**	**324**	**291**	**407**	**343**	**301**	**336**	**687**	**422**	**472**
NSE	**376**	**309**	**277**	**392**	**326**	**283**	**317**	**541**	**398**	**447**
R&D[1]	322	268	230	345	274	239	287	501	351	387
RSA	54	41	47	47	52	45	30	40	47	60
SSH – RSA	**12**	**15**	**14**	**15**	**17**	**17**	**19**	**146**	**24**	**25**
R&D[1]	0	0	0	0	0	0	1	2	2	2
ASC	12	15	14	15	17	17	18	144	22	23
Total capital expenditures	**71**	**56**	**21**	**8**	**4**	**2**	**2**	**14**	**16**	**22**
By performer					percent					
Intramural	38	42	36	25	32	33	27	16	27	27
Business enterprises	58	54	61	73	65	64	71	61	70	70
Other Canadians performers[3]	3	3	3	2	1	1	1	22	1	2
Foreign performers	1	1	0	0	2	2	1	1	2	1
S&T personnel					person-years					
Total	**878**	**880**	**901**	**931**	**1,001**	**987**	**1,072**	**950**	**1,065**	**1,129**
Scientific and professional[4]	320	332	333	346	361	345	477	415	493	555
Technical	40	32	34	32	34	27	31	25	60	61
Other[5]	518	516	534	553	606	615	564	510	512	513

See notes at end of section.

International Development Research Centre (IDRC)

The objective of IDRC is to initiate, encourage, support and conduct research into the problems of the developing regions of the world and into the means of applying and adapting scientific, technical and other knowledge to the economic and social advancement of those regions.

IDRC's 2003-04 expenditures on S&T will be $85 million. Because of its mandate, IDRC spends 42% of its funds in the foreign sector.

Table 3.12 International Development Research Centre: resources on S&T, by activity and performer, 1994-95 to 2003-04

Resources on S&T	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02[r]	2002-03[p]	2003-04[p]
					in millions of dollars					
Total S&T expenditures	**102**	**88**	**88**	**78**	**85**	**82**	**84**	**77**	**83**	**85**
NSE	**35**	**30**	**27**	**22**	**19**	**23**	**29**	**23**	**25**	**26**
R&D[1]	35	30	27	21	18	21	28	21	23	24
RSA	0	0	0	0	1	2	1	2	2	2
Data collection and information services	0	0	0	0	1	1	1	1	1	1
Other[2]	0	0	0	0	0	1	0	1	1	1
SSH	**67**	**58**	**61**	**56**	**66**	**59**	**55**	**54**	**58**	**59**
R&D[1]	54	49	49	43	50	50	48	44	48	49
RSA	13	9	12	14	16	9	7	10	10	10
Data collection and information services	8	5	6	7	7	7	6	8	9	9
Special services and studies	0	0	0	0	…	…	…	…	…	…
Other[2]	4	3	5	6	9	2	1	2	1	1
By performer					percent					
Intramural	29	32	45	52	53	59	51	51	52	51
Business enterprises	0	0	1	0	0	0	0	0	0	0
Higher education	4	3	4	3	3	4	4	4	4	4
Other Canadian	6	5	4	5	7	3	4	3	2	3
Foreign performers	61	60	46	40	37	34	41	42	42	42
S&T personnel					person-years					
Total	**229**	**208**	**168**	**161**	**161**	**177**	**148**	**143**	**157**	**159**
Scientific and professional[4]	90	82	66	62	67	80	92	90	106	108
Technical	37	33	27	29	22	21	2	…	…	…
Other[5]	102	93	75	70	72	76	54	53	51	52

See notes at end of section.

Department of National Defence (NDEF)

The purpose of R&D within NDEF is to use science and technology to improve the capabilities and effectiveness of the Canadian Forces. The R&D program of NDEF is carried out by a combination of in-house sources at five defence research establishments and by contracting out to Canadian industry, universities and other government departments. The Defence Research Establishments are: the defence research establishments Atlantic, Valcartier, Ottawa, Suffield, and the defence and civil institute of environmental medicine.

In 2003-04, $145 million of the Defence R&D funds will be spent in Canadian industry and $4 million in Canadian universities.

Table 3.13 Department of National Defence: resources on S&T, by activity and performer, 1994-95 to 2003-04

Resources on S&T	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02[r]	2002-03[p]	2003-04[p]
					in millions of dollars					
Total S&T expenditures	**252**	**233**	**253**	**311**	**304**	**335**	**315**	**315**	**306**	**332**
NSE	**249**	**230**	**240**	**294**	**288**	**319**	**299**	**311**	**302**	**328**
R&D[1]	246	227	215	259	259	290	270	277	268	293
RSA	3	3	25	35	29	29	29	34	35	35
SSH	**3**	**3**	**13**	**16**	**16**	**16**	**16**	**4**	**4**	**4**
R&D[1]	2	2	8	4	4	4	4	4	4	4
RSA	1	1	5	12	12	12	12	…	…	…
Total capital expenditures	**20**	**12**	**14**	**17**	**12**	**35**	**10**	**12**	**11**	**12**
By performer					percent					
Intramural	59	56	60	53	54	58	56	45	45	43
Business enterprises	35	38	33	39	39	36	38	48	51	53
Higher education	2	3	3	2	2	1	1	1	1	1
Other Canadian performers[3]	1	0	2	0	0	0	0	1	0	0
Foreign performers	3	3	2	6	5	4	5	5	3	3
S&T personnel					person-years					
Total	**1,664**	**1,248**	**1,428**	**1,424**	**1,567**	**1,560**	**1,617**	**1,428**	**1,529**	**1,704**
Scientific and professional[4]	578	449	505	514	781	771	792	585	602	711
Technical	382	324	416	424	370	356	349	344	393	431
Other[5]	704	475	507	486	416	434	476	500	535	562

See notes at end of section.

National Research Council of Canada (NRC)

Research and development is the organization's most important activity, with a focus on important Canadian economic sectors, including information technologies, automated manufacturing, transportation, advanced materials, biotechnology, the resource industries, and the environment. NRC also performs research in the public interest in areas such as public safety and national security. NRC also has the responsibility for the operation and administration of astronomical observatories established or maintained by the Government of Canada. It is also mandated to provide vital scientific and technological services to the research and industrial communities. NRC supports Canada's science and technology (S&T) infrastructure by providing facilities, financial assistance programs, and specialized services.

The NRC is one of the federal government's largest S&T spenders with its 2003-04 budget of $722 million. Most of the NRC's budget (82%) will be spent intramurally, 11% will go to the industrial sector, and 6% to universities.

Table 3.14 National Research Council of Canada: resources on S&T, by activity and performer, 1994-95 to 2003-04

Resources on S&T	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02[r]	2002-03[p]	2003-04[p]
					in millions of dollars					
Total S&T expenditures	**505**	**481**	**479**	**524**	**554**	**597**	**655**	**719**	**770**	**722**
NSE	**505**	**481**	**479**	**524**	**554**	**597**	**655**	**719**	**770**	**722**
R&D[1]	449	419	429	470	499	530	591	644	695	652
RSA	56	62	50	54	55	66	64	74	75	69
Data collection and information services	32	38	34	37	39	50	43	59	54	52
Other[2]	24	24	16	17	16	16	21	15	21	17
Total capital expenditures	**62**	**41**	**44**	**60**	**51**	**50**	**65**	**88**	**98**	**73**
By performer					percent					
Intramural	75	74	73	75	73	76	77	79	81	82
Business enterprises	14	16	17	16	18	15	13	11	12	11
Higher education	7	7	7	7	7	6	7	7	5	6
Other Canadian performers[3]	1	1	1	1	1	1	1	1	1	0
Foreign performers	3	2	2	1	1	2	2	2	1	1
S&T personnel					person-years					
Total	**3,307**	**3,099**	**3,097**	**3,202**	**3,266**	**3,310**	**3,426**	**3,612**	**3,568**	**3,643**
Scientific and professional[4]	1,424	1,328	1,322	1,272	1,258	1,248	1,271	1,392	1,391	1,420
Technical	856	812	814	875	900	906	940	1,007	963	983
Other[5]	1,027	959	961	1,055	1,108	1,156	1,215	1,213	1,214	1,240

See notes at end of section.

Natural Resources Canada (NRCan)

NRCan advances the development of Canada's economy by providing expert scientific and economic knowledge to Canadians, and by promoting the sustainable development and use of Canada's natural resources and the competitiveness of the energy, forest, mining, geomatic, and geoscience sectors.

NRCan is a science and policy department. About 60% of the department's budget is devoted to science and technology. In 2003-04, NRCan plans to spend $502 million on S&T. Almost 58% will be devoted to R&D activities, of which $242 million will be spent intramurally.

Table 3.15 Natural Resources Canada: resources on S&T, by activity and performer, 1994-95 to 2003-04

Resources on S&T	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02[r]	2002-03[p]	2003-04[p]
					in millions of dollars					
Total S&T expenditures	**464**	**475**	**430**	**396**	**386**	**421**	**437**	**554**	**480**	**502**
NSE	**464**	**475**	**430**	**396**	**386**	**421**	**437**	**554**	**480**	**502**
R&D[1]	373	403	372	351	345	376	388	335	272	285
RSA	91	72	58	45	41	45	49	219	207	217
Data collection and information services	79	66	47	39	37	39	39	199	189	197
Other[2]	12	6	11	6	4	5	10	20	18	20
Total capital expenditures	**33**	**30**	**37**	**36**	**34**	**26**	**35**	**31**	**30**	**31**
By performer					percent					
Intramural	82	85	86	88	86	82	85	82	90	90
Business enterprises	7	7	7	7	9	12	8	5	5	5
Higher education	2	1	1	--	--	1	1	1	1	1
Other Canadian performers[3]	9	7	6	4	4	4	5	12	4	4
Foreign performers	--	--	--	1	1	1	1	0	0	0
S&T personnel					person-years					
Total	**3,562**	**3,265**	**3,052**	**2,848**	**2,698**	**2,807**	**2,870**	**3,161**	**3,234**	**3,254**
Scientific and professional[4]	1,658	1,455	1,576	1,454	1,400	1,466	1,373	1,669	1,706	1,716
Technical	1,016	866	886	834	802	833	752	951	981	990
Other[5]	888	944	590	560	496	508	745	541	547	548

See notes at end of section.

Statistics Canada (STCAN)

Statistics Canada collects and disseminates the data needed to help understand the commercial, industrial, financial, social, and economic activities in Canada and also the conditions of her people. Specifically, statistics are produced in such areas as health and welfare, education, wholesale and retail trade, public administration, community, business and personal services, and labour and employment to name a few. Statistics Canada also conducts the quinquennial Census of population and the Census of agriculture.

This information is then provided to government at every level, to business, labour, academic and social institutions, to professional associations, to the international statistical community, and to the public. Statistics Canada is the federal government's major spender of social sciences and humanities funds. The department plans to spend $561 million in 2003-04 compared to $593 million in 2002-03.

Table 3.16 Statistics Canada: resources on S&T, by activity and performer, 1994-95 to 2003-04

Resources on S&T	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02[r]	2002-03[p]	2003-04[p]
					in millions of dollars					
Total S&T expenditures	**353**	**406**	**535***	**400**	**437**	**461**	**576**	**727***	**593**	**561**
SSH	**353**	**406**	**535**	**400**	**437**	**461**	**576**	**727**	**593**	**561**
R&D[1]	10	10	10	11	12	13	13	16	17	18
RSA	343	396	525	389	425	448	563	711	576	543
Data collection and information services	312	365	480	360	394	412	516	679	547	516
Special services and studies	20	17	17	18	20	20	19	26	27	26
Other[2]	11	14	28	11	11	15	28	6	2	1
Total capital expenditures	**11**	**15**	**29**	**11**	**12**	**15**	**27**	**6**	**2**	**1**
By performer					percent					
Intramural	100	100	100	100	100	100	100	100	100	100
Business enterprises	0	0	0	0	0	0	0	0	0	0
Higher education	0	0	0	0	0	0	0	0	0	0
Other Canadian performers[3]	0	0	0	0	0	0	0	0	0	0
Foreign performers	0	0	0	0	0	0	0	0	0	0
S&T personnel					person-years					
Total	**4,607**	**4,894**	**5,004***	**4,959**	**5,042**	**5,096**	**5,811**	**6,320***	**5,179**	**5,109**
Scientific and professional[4]	1,105	1,129	1,090	1,195	1,210	1,234	1,334	1,391	1,220	1,203
Technical	1,054	1,104	1,108	1,193	1,242	1,281	1,445	1,516	1,338	1,320
Other[5]	2,448	2,661	2,806	2,571	2,590	2,581	3,032	3,413	2,621	2,586

See notes at end of section.
** Census year.*

University Research Councils

The federal government provides R&D grants to universities primarily through three councils: the Natural Sciences and Engineering Research Council (NSERC), the Canadian Institutes of Health Research (CIHR), and the Social Sciences and Humanities Research Council (SSHRC). Altogether, these councils will distribute $1,900 million in 2003-04.

In 2003-04, NSERC will provide an estimated $735 million in grants for natural sciences and engineering. About 90% of NSERC's budget goes to Canadian universities, 2% to industry, 2% to foreign research organizations and the remainder to cover administrative costs. The CIHR will provide another $614 million for the health sciences. SSHRC will grant about $454 million in 2003-04 for social science research which includes scholarly publications and major editorial projects, career scholars and international scholar exchanges.

Table 3.17 University research councils: resources on S&T, 1994-95 to 2003-04

Resources on S&T	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02[r]	2002-03[p]	2003-04[p]
					in millions of dollars					
Total S&T expenditures	**862**	**824**	**788**	**770**	**880**	**993**	**1,105**	**1,479**	**1,524**	**1,900**
NSERC	**494**	**471**	**453**	**436**	**499**	**549**	**568**	**588**	**689**	**775**
R&D[1]	440	425	410	393	443	481	500	517	610	691
RSA	54	46	43	43	56	68	68	71	79	84
MRC	**265**	**252**	**242**	**238**	**277**	**…**	**…**	**…**	**…**	**…**
R&D[1]	257	244	234	229	266	…	…	…	…	…
RSA	8	8	8	9	11	…	…	…	…	…
CIHR	**…**	**…**	**…**	**…**	**…**	**317**	**392**	**529**	**633**	**651**
R&D[1]	…	…	…	…	…	304	384	522	625	643
RSA	…	…	…	…	…	12	8	7	8	8
SSHRC	**103**	**101**	**93**	**96**	**104**	**127**	**145**	**362**	**202**	**474**
R&D[1]	69	70	64	65	68	92	105	245	157	317
RSA	34	31	29	31	36	35	40	117	45	157
By performer					percent					
Intramural	4	4	5	5	5	5	6	5	6	5
Business enterprises	2	2	2	2	1	1	1	1	1	1
Higher education	89	89	90	89	89	88	88	90	89	91
Other Canadian performers[3]	1	1	1	1	2	3	3	2	2	1
Foreign performers	3	3	3	3	3	1	2	2	2	2
S&T personnel					person-years					
Total	**356**	**359**	**357**	**374**	**392**	**444**	**518**	**585**	**692**	**738**
CIHR	…	…	…	…	…	91	140	173	252	285
NSERC	184	183	183	197	200	230	250	264	280	293
MRC	72	77	78	80	85	…	…	…	…	…
SSHRC	100	99	96	97	107	123	128	148	160	160

1. Includes current and capital expenditures.
2. Can include any or all of: special services and studies, education support, museum services, administration of extramural programs, and capital expenditures.
3. Includes provincial and municipal governments, private non-profit organizations and other Canadian performers.
4. Includes executives.
5. Includes administration and foreign service, operations and military personnel.
6. 2003-04 Estimates, Part I and II Expenditure Plan

4. Extramural expenditures

4. Extramural expenditures

This section focuses on federal government expenditures for S&T performed extramurally, that is for S&T performed outside of its own laboratories. Aggregate payments to industries, universities, private non-profit organizations and to foreign and other performers are presented. It was estimated that in 2003-04 the government will spend $4.0 billion or 46.8% of its total S&T expenditures extramurally. The major recipients of these funds will be universities ($2,314 million) and business enterprises ($1,072 million). In addition, private non-profit organizations will receive $268 million, foreign performers $233 million and others, including individuals and provincial and municipal governments, $118 million.

Extramural payments take the form of a contract, a grant or a contribution. Contracts, normally awarded as a result of competitive bidding, provide a service or perform an activity required by a federal department or agency. Almost all of these contracts are awarded to business enterprises. Payments for university and industry support programs are normally in the form of a grant or contribution.

Business enterprises

- Total federal S&T payments to the business enterprise sector were estimated to be $1,072 million in 2003-04, a 4.7% increase over 2002-03 forecasted expenditures of $1,022 million.

- R&D payments in 2003-04 were to amount to $831 million, nearly a 7% increase from 2002-03 forecasted expenditures of $774 million.

- R&D contracts totalled $280 million in 2002-03, and increases 3.8% in 2003-04 to $291 million.

- R&D grants and contributions totalled $489 million in 2002-03, an increase of 8.6% from 2003-04 ($535 million).

- In 2003-04, payments for R&D contracts from the department of National Defence ($145 million) accounted for 49.8%, while the Canadian Space Agency ($98 million) accounted for 33.7%.

- Industry Canada payments for R&D grants were to total $331 million or 61.9% of the total grants, while the National Research Council Canada was to account for 15.3% or $82 million.

Higher education

- Universities were to receive funding of $2,038 million for R&D and $276 million for RSA in 2003-04. The three research councils, the Canadian Institutes of Health Research, the Natural Sciences and Engineering Research Council, and the Social Sciences and Humanities Research Council, and also the Canada Foundation for Innovation are the major federal government funders of R&D performed in the higher education sector.

- R&D grants and contributions represent 97% of the total R&D payments to the higher education sector

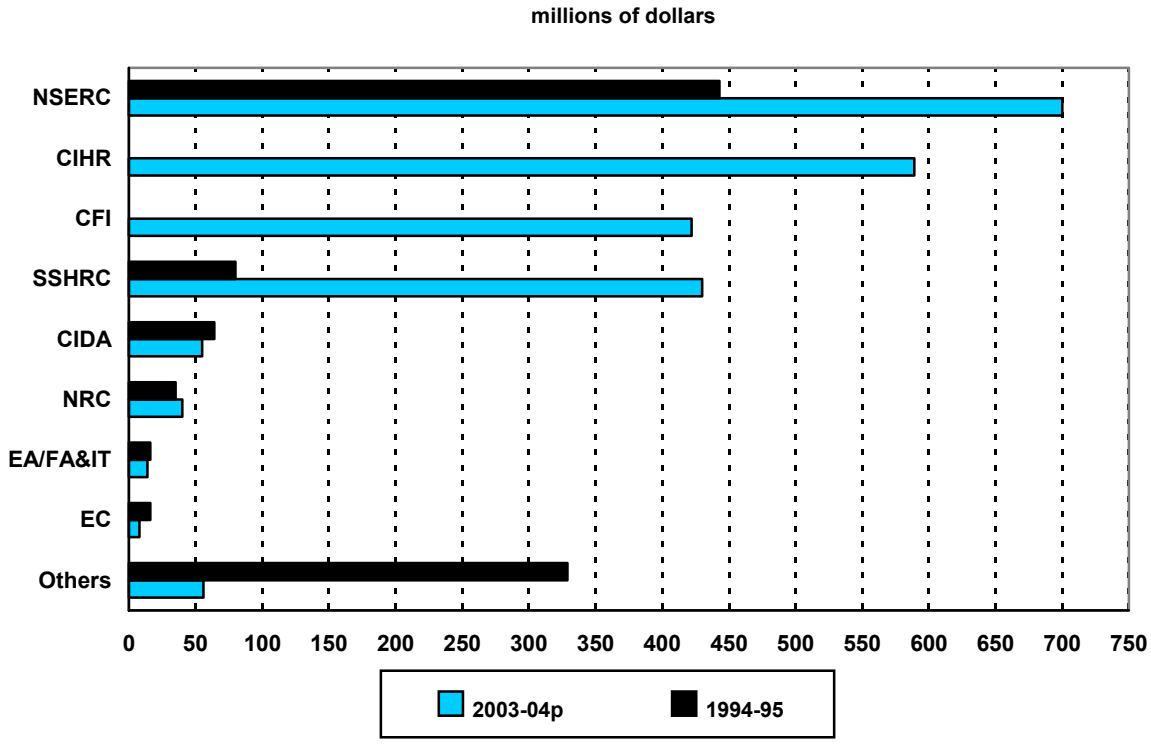
- The 2003-04 estimated combined budget for the granting councils is $1,802 million.

- Of the three granting councils, the Natural Sciences and Engineering Research Council is the largest funder of university research. Its estimated R&D expenditures to universities was $629 million in 2003-04, a 13% increase.

- The Canadian Institutes of Health Research planned to spend an estimated $589 million to support S&T activities in universities.

- The Social Sciences and Humanities Research Council planned to spend an estimated $430 million to support S&T activities in universities.

Chart 4.1 Federal S&T expenditures in the higher education sector, by department or agency, 1994-95 and 2003-04



***Source**: table 4.4*

Foreign

- Total federal S&T payments to the foreign sector were estimated to be $233 million in 2003-04.

- Payments to organizations in foreign countries are dominated by those of CIDA ($88 million) and IDRC ($36 million) which account for 53% of total foreign S&T expenditures of $233 million.

Table 4.1 Federal extramural expenditures for S&T, by type of payment and sector of performance, 2003-04

Payment	Business enterprises	Higher education	Non-profit institutions	Other Canadian performers	Foreign performers	Total
			in millions of dollars			
R&D contracts	291	29	6	17	16	359
R&D grants and contributions	535	1,968	224	50	92	2,869
Research fellowships	5	41	0	16	17	79
RSA	241	276	38	35	108	698
Total	**1,072**	**2,314**	**268**	**118**	**233**	**4,005**

Table 4.2 Federal extramural expenditures for S&T by sector of performance, 1994-95 to 2003-04

Sector of performance	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02[r]	2002-03[p]	2003-04[p]
					in millions of dollars					
Business enterprises	930	885	801	927	952	926	847	1,108	1,021	1,072
Higher education	983	933	894	860	989	1,173	1,320	1,739	1,870	2,314
Non-profit institutions	127	103	112	111	122	181	154	401	184	268
Provincial and municipal governments	44	47	32	12	14	18	37	31	48	50
Other Canadian performers	46	39	33	27	37	66	56	53	77	68
Foreign performers	298	258	246	221	233	229	250	282	209	233
Total	**2,428**	**2,266**	**2,119**	**2,158**	**2,347**	**2,594**	**2,664**	**3,614**	**3,409**	**4,005**
					percent					
Business enterprises	38	39	38	43	40	36	32	31	30	27
Higher education	41	41	42	40	42	45	49	48	55	58
Non-profit institutions	5	5	5	5	5	7	6	11	6	7
Provincial and municipal governments	2	2	2	1	1	1	2	1	1	1
Other Canadian performers	2	2	2	1	2	2	2	1	2	1
Foreign performers	12	11	11	10	10	9	9	8	6	6
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Table 4.3 Federal extramural expenditures for R&D, by sector of performance, 1994-95 to 2003-04

Sector of performance	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02[r]	2002-03[p]	2003-04[p]
					in millions of dollars					
Business enterprises	756	665	573	721	749	713	624	862	774	831
Higher education	835	797	761	725	842	1,010	1,170	1,515	1,709	2,038
Non-profit institutions	74	59	75	71	82	130	76	233	138	230
Provincial and municipal governments	33	38	27	6	9	13	34	26	40	42
Other Canadian performers	29	27	23	16	29	46	35	35	42	41
Foreign performers	177	151	141	120	124	118	131	137	116	125
Total	**1,903**	**1,737**	**1,600**	**1,659**	**1,835**	**2,031**	**2,070**	**2,806**	**2,820**	**3,307**
					percent					
Business enterprises	40	38	36	43	41	35	30	31	27	25
Higher education	44	46	47	44	46	50	56	54	61	62
Non-profit institutions	4	3	5	4	4	6	4	8	5	7
Provincial and municipal governments	2	2	2	1	0	1	2	1	1	1
Other Canadian performers	1	2	1	1	2	2	2	1	2	1
Foreign performers	9	9	9	7	7	6	6	5	4	4
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Table 4.4 Federal extramural expenditures for S&T, by department or agency and sector of performance, 2003-04

Department or agency	Business enterprises	Higher education	Canadian non-profit institutions	Other Canadian performers	Foreign performers	Total
			in millions of dollars			
CFI	0	422	0	0	0	422
CIDA	154	55	8	7	88	312
CIHR	0	589	2	13	10	614
CSA	124	9	0	4	20	157
EC	37	8	58	6	5	114
FA&IT	0	14	0	0	26	40
GC	0	0	83	0	0	83
HC	16	5	4	32	0	57
HRDC	5	1	26	3	0	35
IDRC	0	3	3	0	36	42
IND	331	0	1	4	7	343
NDEF	175	4	0	1	9	190
NRC	83	40	0	2	7	132
NRCan	27	5	13	2	2	49
NSERC	15	700	2	6	12	735
SSHRC	0	430	4	16	4	454
WEDC	9	3	18	0	0	30
Other	96	26	46	22	7	196
Total	**1,072**	**2,314**	**268**	**118**	**233**	**4,005**

Chart 4.2 Federal extramural expenditures for S&T, by sector of performance, 2003-04

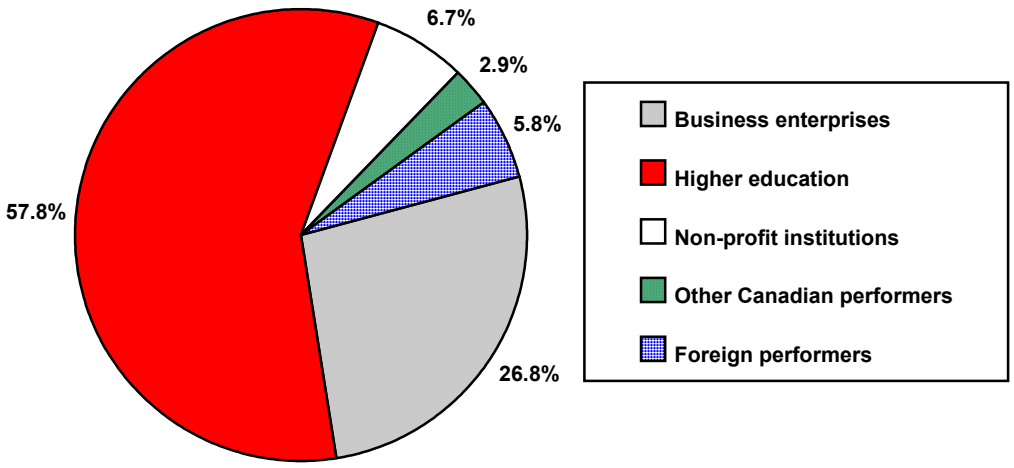


Table 4.5 Federal extramural expenditures for R&D, by department or agency and sector of performance, 2003-04

Department or agency	Business enterprises	Higher education	Non-profit institutions	Other Canadian performers	Foreign performers	Total
			in millions of dollars			
ACOA	44	16	17	2	0	79
AECL	7	0	0	1	3	11
CED(Qué)	16	0	2	0	0	18
CFI	0	422	0	0	0	422
CIDA	0	18	1	6	24	49
CIHR	0	583	2	12	10	607
CSA	122	9	0	3	20	154
EC	11	6	52	1	1	71
GC	0	0	83	0	0	83
HRDC	0	1	25	0	0	26
IDRC	0	3	2	0	34	39
IND	331	0	1	0	7	339
NDEF	145	4	0	0	9	158
NRC	83	40	0	2	7	132
NRCan	25	4	12	0	1	42
NSERC	13	629	0	5	8	655
SSHRC	0	294	1	10	1	306
WEDC	9	3	18	0	0	30
Other	25	6	14	41	0	86
Total	**831**	**2,038**	**230**	**83**	**125**	**3,307**

Chart 4.3 Federal extramural expenditures for R&D, by sector of performance, 2003-04

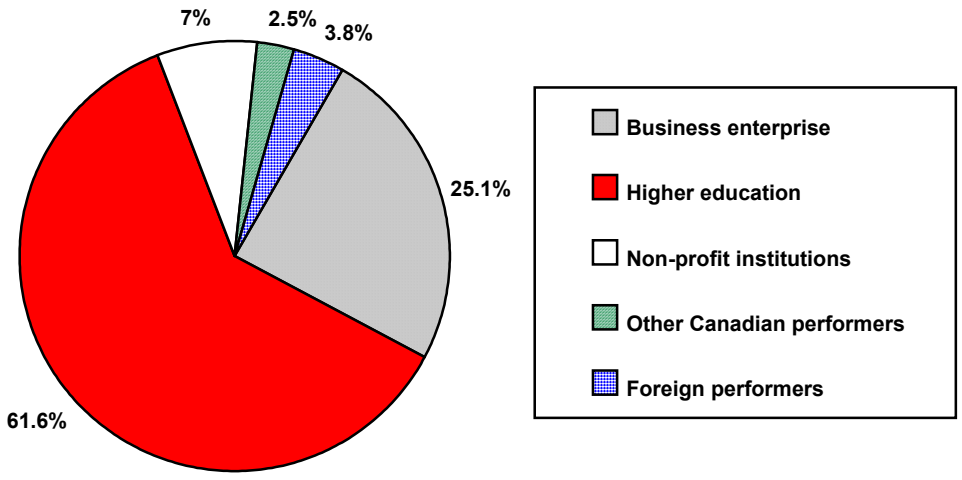


Table 4.6 Federal S&T expenditures in the business enterprise sector, by type of payment and department or agency, 1994-95 to 2003-04

Payment and department	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02[r]	2002-03[p]	2003-04[p]
					in millions of dollars					
Total S&T payments	**930**	**885**	**801**	**927**	**952**	**926**	**847**	**1,108**	**1,022**	**1,072**
R&D payments (total)	**756**	**665**	**573**	**721**	**749**	**713**	**624**	**862**	**774**	**831**
R&D contracts (total)	**367**	**341**	**267**	**295**	**381**	**362**	**227**	**270**	**280**	**291**
AECL	20	15	17	14	16	7	5	6	6	7
CSA	217	185	142	143	223	213	88	106	105	98
EC	8	12	9	8	10	8	8	11	14	11
F&O	2	8	1	1	1	0	0	0	0	0
NDEF	88	88	73	105	107	110	108	122	126	145
NRC	0	0	0	0	0	0	0	0	0	0
NRCan	15	12	10	11	12	10	6	5	5	5
TC	12	11	8	7	8	7	7	8	8	9
Other	5	10	7	6	4	7	5	12	16	16
R&D grants and contributions (total)	**382**	**321**	**300**	**422**	**363**	**340**	**393**	**587**	**489**	**535**
ACOA	14	11	5	7	11	8	15	10	21	44
CED (Qué)	19	15	9	8	4	5	4	11	21	16
CSA	0	0	0	0	1	1	12	26	26	24
IND	223	173	177	298	223	191	237	419	295	331
NRC	73	76	78	82	97	87	87	80	90	82
NRCan	20	16	13	10	15	29	22	21	20	21
NSERC	15	13	7	12	7	6	9	9	8	8
WEDC	11	12	6	4	2	11	6	10	9	9
Other	7	5	4	1	3	2	1	1	0	0
Research fellowships	**6**	**3**	**7**	**4**	**5**	**12**	**4**	**5**	**5**	**5**
Other S&T payments (total)	**174**	**221**	**228**	**206**	**203**	**212**	**223**	**246**	**248**	**241**
CIDA	104	160	162	140	143	157	165	166	161	154
EC	18	16	22	17	24	22	21	25	25	26
F&O	3	11	5	4	5	1	1	1	3	3
HRDC	7	4	2	3	3	4	4	6	5	5
NDEF	0	0	12	15	11	11	11	30	30	30
NRCan	6	4	6	7	7	6	7	1	1	1
TC	5	1	1	2	1	1	1	1	1	2
Other	31	25	18	18	9	10	13	17	22	20

Table 4.7 Federal S&T expenditures in the higher education sector, by type of payment and department or agency 1994-95 to 2003-04

Payment and department	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02[r]	2002-03[p]	2003-04[p]
					in millions of dollars					
Total S&T payments	**983**	**933**	**894**	**860**	**989**	**1,173**	**1,320**	**1,739**	**1,870**	**2,314**
R&D payments (total)	**835**	**797**	**761**	**725**	**842**	**1,010**	**1,170**	**1,515**	**1,709**	**2,038**
R&D grants (total)	**761**	**724**	**702**	**671**	**789**	**958**	**1,118**	**1,447**	**1,631**	**1,968**
FORD / CED(Qué)	10	5	8	3	5	0	0	1	1	0
CFI	...	...	...	...	27	114	183	231	352	422
CIHR	…	…	…	…	…	266	330	450	532	548
EC	14	12	5	8	6	7	6	6	4	3
HC	10	9	10	7	4	4	2	0	1	1
IDRC	4	3	4	2	3	3	3	2	3	3
MRC	231	220	208	204	233	…	…	…	…	…
NRC	35	35	33	36	39	39	44	51	41	40
NSERC	385	368	372	351	394	426	442	454	542	623
SSHRC	56	58	53	54	55	77	88	227	136	294
Other	16	14	9	6	23	22	20	25	19	34
R&D contracts (total)	**29**	**30**	**26**	**25**	**23**	**21**	**22**	**27**	**29**	**29**
CIDA	9	9	9	8	8	8	8	8	8	8
CSA	6	6	5	7	7	6	8	9	9	8
NDEF	6	6	5	5	3	2	3	3	4	4
NRCan	4	2	1	1	1	1	0	0	0	0
Other	4	7	6	4	4	4	3	7	8	9
Research fellowships (total)	**45**	**43**	**32**	**29**	**30**	**31**	**30**	**41**	**49**	**41**
Education support (total)	**125**	**110**	**109**	**113**	**123**	**136**	**130**	**127**	**124**	**148**
CIDA	37	35	36	33	33	35	31	32	32	32
CIHR	…	…	…	…	…	8	7	5	6	6
EA (FA&IT)	16	14	14	18	14	16	13	12	13	14
MRC	7	6	6	7	9	…	…	…	…	…
NSERC	46	38	36	37	48	60	57	59	66	71
SSHRC	17	16	14	17	19	17	22	17	5	23
Other	2	1	3	1	0	0	0	2	2	2
Other S&T payments (total)	**23**	**25**	**25**	**22**	**24**	**27**	**20**	**97**	**37**	**128**

Table 4.8 Federal S&T expenditures in the Canadian non-profit institutions sector, by funding department or agency, 1994-95 to 2003-04

Department or agency	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02[r]	2002-03[p]	2003-04[p]
					in millions of dollars					
AGR	4	1	1	1	1	15	3	5	8	4
CED(Qué)	2	3	9	9	12	5	4	2	1	2
CIHR	…	…	…	…	…	5	11	2	2	2
CIDA	10	10	9	8	9	8	8	8	8	8
EC	8	8	4	4	5	67	7	63	8	58
GC	…	…	…	…	…	...	…	33	49	83
HC	12	14	15	12	8	4	4	4	5	4
HRDC	30	22	20	25	40	25	30	18	26	26
IND (ISTC)	8	7	9	9	4	4	4	154	2	1
MRC	2	3	5	5	7	…	…	…	…	…
NRCan	28	21	16	14	12	14	14	64	13	13
SSHRC	5	2	2	3	2	2	3	2	3	4
WEDC	2	2	5	2	2	3	10	16	19	19
Other	16	10	17	19	20	29	56	30	40	44
Total	**127**	**103**	**112**	**111**	**122**	**181**	**154**	**401**	**184**	**268**

Table 4.9 Federal S&T expenditures in the foreign sector, by department or agency, 1994-95 to 2003-04

Department or agency	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02[r]	2002-03[p]	2003-04[p]
					in millions of dollars					
CIHR	…	…	…	…	…	5	7	9	10	10
CIDA	110	80	83	74	83	86	109	134	60	88
CSA	37	35	40	25	26	27	22	22	22	20
EA (FA&IT)	28	32	31	27	25	27	23	25	27	26
IDRC	62	52	40	32	31	28	35	32	35	36
MRC	8	7	6	5	5	…	…	…	…	…
NDEF	7	8	5	18	17	15	15	16	9	9
NRC	15	9	11	9	9	9	12	11	11	7
NRCan	2	2	2	2	3	2	2	2	1	2
NSERC	10	9	8	8	10	11	11	11	12	12
SSHRC	8	8	7	7	8	3	2	3	3	4
Other	11	16	13	14	16	16	12	17	19	19
Total	**298**	**258**	**246**	**221**	**233**	**229**	**250**	**282**	**209**	**233**

5. Federal scientific activities by province and territories

5. Federal scientific activities by province and territories

This section presents the geographic distribution of federal government resources on S&T. Departments and agencies of the federal government were asked to identify staff and expenditures of their scientific establishments by province and territory.

Since no attempt is made to forecast or estimate provincial expenditures, only actual expenditures after the close of the fiscal year are obtained. Thus provincial data are available only to 2001-02.

In 2001-02, the federal government spent a total of $8,169 million on S&T. Of this amount, $4,864 million, or 60%, is assigned to provinces and territories. The rest consists of categories of expenditures which are not distributed geographically. They are the following:

- All federal expenditures in the National Capital Region (NCR) for the performance of S&T in federal institutions (intramural S&T). These expenditures were $2,603 million.
- All payments abroad for S&T. These were $282 million.
- Various other categories of federal expenditures which could not be assigned geographically. These amounted to $420 million.

Expenditures and personnel for S&T performed by the federal government in the NCR are excluded from the provincial totals and are reported separately. The NCR is treated as a separate entity. However, these data distributed geographically, are presented in tables 5.8, 5.9 and 5.13.

Estimates of S&T activities by region may be misunderstood. For example, the financial data are identified with the region of the physical location of an S&T unit. It would be wrong to assume all of the expenditures of a unit are spent in the region of location. Supplies and equipment can be purchased from other regions or countries. Furthermore, in cases such as the NRC, labour moves freely between Ontario and Quebec so that even wages and salaries paid by a unit are partly spent outside the area of location.

Of the total federal funding for science and technology in 2001-02 and available for distribution regionally, 34% was allocated to Ontario and 28% to Quebec. These figures exclude funding for science and technology performed by the federal government in its own departments and agencies within the National Capital Region, which has been stable over the past few years.

In 2001-02, 52% of the total value of federal government R&D grants and contracts awarded to industry in the natural sciences was allocated to Ontario, compared with 31% to Quebec, and 7% to British Columbia.

Table 5.1 Federal expenditures on science and technology, by province and territories, 1995-96 to 2001-02

Province and territories	Year						
	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01[r]	2001-02[p]
	in millions of dollars						
Newfoundland and Labrador	90	79	71	86	87	101	95
Prince Edward Island	17	17	14	17	20	29	26
Nova Scotia	199	199	175	200	197	220	226
New Brunswick	81	67	65	75	72	68	82
Quebec	792	824	787	788	833	1,017	1,382
Ontario	1,071	1,077	1,141	1,143	1,309	1,347	1,644
Manitoba	176	184	149	136	161	190	211
Saskatchewan	108	93	120	122	131	148	164
Alberta	252	248	247	254	301	327	475
British Columbia	383	347	373	446	528	479	526
Yukon, Northwest Territories and Nunavut	14	17	16	15	20	28	33
Canada (excluding NCR*)	**3,183**	**3,152**	**3,158**	**3,282**	**3,659**	**3,954**	**4,864**
National Capital Region*	1,926	1,967	1,819	1,942	1,981	2,130	2,603
Canada (including NCR)	**5,109**	**5,119**	**4,977**	**5,224**	**5,640**	**6,084**	**7,467**

* *Federal intramural expenditures only.*

Chart 5.1 Federal expenditures on science and technology, by province and territories, 2001-02

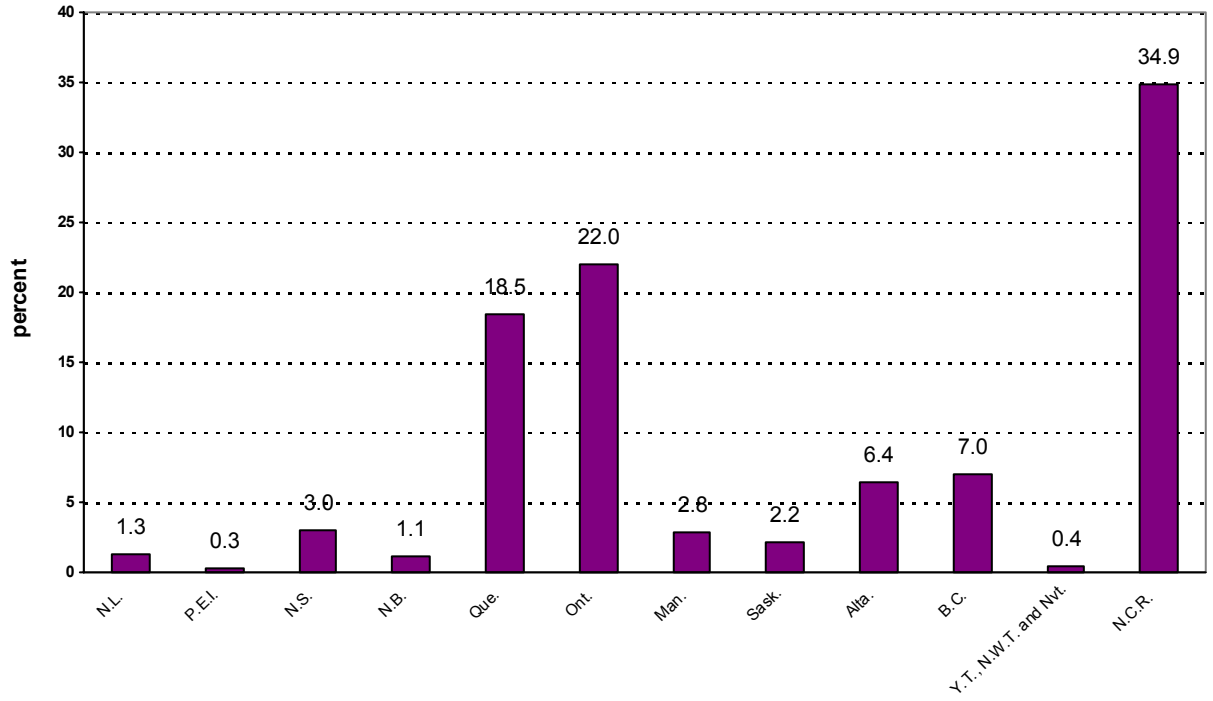


Table 5.2 Federal expenditures on science and technology, by science, by province and territories and sector of performance, 2001-02

Province and territories	Federal government	Business enterprises	Higher education	Other[1] Canadian performers	Total	Total extramural[2]
Total Science and Technology			in millions of dollars			
Newfoundland and Labrador	61	9	20	5	95	34
Prince Edward Island	19	3	3	1	26	7
Nova Scotia	153	21	47	5	226	73
New Brunswick	46	8	24	4	82	36
Quebec	527	258	444	153	1,382	855
Ontario	500	440	601	103	1,644	1,144
Manitoba	148	15	42	6	211	63
Saskatchewan	90	10	57	7	164	74
Alberta	159	27	172	117	475	316
British Columbia	219	60	214	33	526	247
Yukon, Northwest Territories and Nunavut	30	1	0	2	33	3
Canada (excluding NCR*)	**1,952**	**852**	**1,624**	**436**	**4,864**	**2,912**
National Capital Region*	2,603	...	...	...	2,603	…
Canada (including NCR)	**4,555**	**852**	**1,624**	**436**	**7,467**	**2,912**
Natural science						
Newfoundland and Labrador	59	9	14	4	86	27
Prince Edward Island	18	3	2	0	23	5
Nova Scotia	136	21	35	4	196	60
New Brunswick	45	8	9	3	65	20
Quebec	493	256	350	19	1,118	625
Ontario	465	429	463	62	1,419	954
Manitoba	139	15	33	4	191	52
Saskatchewan	87	10	49	5	151	64
Alberta	149	27	138	113[3]	427	278
British Columbia	204	58	174	27	463	259
Yukon, Northwest Territories and Nunavut	26	1	0	1	28	2
Canada (excluding NCR*)	**1,821**	**837**	**1,267**	**242**	**4,167**	**2,346**
National Capital Region*	1,345	...	…	...	1,345	...
Canada (including NCR)	**3,166**	**837**	**1,267**	**242**	**5,512**	**2,346**
Social science						
Newfoundland and Labrador	2	0	6	1	9	7
Prince Edward Island	1	0	1	1	3	2
Nova Scotia	17	0	12	1	30	13
New Brunswick	1	0	15	1	17	16
Quebec	34	2	94	134[4]	264	230
Ontario	35	11	138	41	225	190
Manitoba	9	0	9	2	20	11
Saskatchewan	3	0	8	2	13	10
Alberta	10	0	34	4	48	38
British Columbia	15	2	40	6	63	48
Yukon, Northwest Territories and Nunavut	4	0	0	1	5	1
Canada (excluding NCR*)	**131**	**15**	**357**	**194**	**697**	**566**
National Capital Region*	1,258	…	…	…	1,258	…
Canada (including NCR)	**1,389**	**15**	**357**	**194**	**1,955**	**566**

1. Includes Canadian non-profit institutions, provincial and municipal governments and other Canadian performers.
2. Includes Canadian business enterprises, higher education and all other Canadian performers
3. Includes $100 million for the Sustainable Development Technology Fund (Environment Canada and Natural Resources Canada each provided $50 million).
4. Includes a $125 million grant to the Pierre Elliott Trudeau Foundation.
** Federal intramural expenditures only.*

Table 5.3 Intramural expenditures of federal scientific establishments, by department or agency, activity and by province and territories, 2001-02

Department or agency	N.L.	P.E.I.	N.S.	N.B.	Que.*	Ont.*	Man.	Sask.	Alta.	B.C.	Sub Total[1]	NCR Ont.	NCR Que.	Total Canada
						in millions of dollars								
S&T														
AECL	0	0	0	0	0	153	11	0	0	0	164	4	0	168
AGR	2	14	11	13	56	35	23	38	55	18	265	60	0	325
CSA	0	0	0	0	144	0	0	0	0	0	144	18	0	162
EC	3	0	15	6	86	189	29	23	24	42	422	32	52	506
F&O	38	3	58	12	33	26	29	1	3	73	282	25	0	307
HC	0	0	1	0	6	7	28	0	3	1	46	223	0	269
IND	0	0	0	0	0	0	0	0	0	0	0	65	42	107
NDEF	0	0	18	0	54	13	0	0	13	0	98	43	1	142
NRC	11	0	18	1	68	18	16	20	5	29	186	384	0	570
NRCan	2	0	13	11	36	23	1	1	36	35	171	284	0	455
PCA	2	0	5	1	17	14	6	2	3	4	60	0	32	92
STCAN	0	0	10	0	12	19	4	2	7	10	64	662	0	726
Other	3	2	5	2	15	3	1	3	10	7	50	510	166	726
Total	**61**	**19**	**153**	**46**	**527**	**500**	**148**	**90**	**159**	**219**	**1,952**	**2,310**	**293**	**4,555**
R&D														
AECL	0	0	0	0	0	153	11	0	0	0	164	4	0	168
AGR	2	14	11	13	56	35	23	38	55	18	265	53	0	318
CSA	0	0	0	0	141	0	0	0	0	0	141	11	0	152
EC	1	0	3	1	18	80	3	6	2	8	122	1	24	147
F&O	14	1	22	5	13	10	12	1	1	29	110	9	0	119
NDEF	0	0	15	0	54	13	0	0	13	0	95	43	1	139
NRC	9	0	14	0	55	14	13	17	0	23	145	351	0	496
NRCan	1	0	3	7	22	21	0	0	21	18	94	149	0	243
Other	0	1	2	0	13	2	15	1	6	1	41	265	15	321
Total	**27**	**16**	**70**	**26**	**372**	**328**	**77**	**63**	**98**	**97**	**1,177**	**886**	**40**	**2,103**

* *Excluding the NCR.*
1. *Includes Territories, Yukon and Nunavut.*

Table 5.4 Intramural expenditures of federal scientific establishments, by activity and by province and territories, 1995-96 to 2001-02

Province and territories	Year						
	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01[r]	2001-02
	in millions of dollars						
S&T							
Newfoundland and Labrador	55	55	48	58	56	63	61
Prince Edward Island	11	11	11	11	15	20	19
Nova Scotia	149	154	134	152	142	168	153
New Brunswick	50	49	45	50	48	42	46
Quebec	324	349	328	350	373	488	527
Ontario	385	474	445	398	482	516	500
Manitoba	127	138	107	92	110	128	148
Saskatchewan	72	61	92	84	82	87	90
Alberta	141	140	136	129	142	160	159
British Columbia	176	162	171	176	210	218	219
Yukon, Northwest Territories and Nunavut	11	15	15	14	17	23	30
Sub-total	**1,501**	**1,608**	**1,532**	**1,513**	**1,677**	**1,193**	**1,952**
NCR - Ontario	1,666	1,710	1,585	1,694	1,737	1,875	2,310
NCR - Quebec	260	257	234	248	244	255	293
Canada (including NCR)	**3,427**	**3,575**	**3,351**	**3,455**	**3,658**	**4,043**	**4,555**
R&D							
Newfoundland and Labrador	27	25	23	26	25	30	27
Prince Edward Island	9	10	10	10	12	16	16
Nova Scotia	77	79	71	77	72	88	70
New Brunswick	29	32	29	31	32	27	26
Quebec	218	226	211	226	250	349	372
Ontario	259	348	302	276	309	314	328
Manitoba	71	77	59	49	58	68	77
Saskatchewan	52	47	74	54	60	62	63
Alberta	98	94	96	94	108	116	98
British Columbia	81	77	83	85	106	111	97
Yukon, Northwest Territories and Nunavut	1	6	5	4	7	9	3
Sub-total	**922**	**1,021**	**963**	**932**	**1,039**	**1,191**	**1,177**
NCR - Ontario	775	750	738	781	787	850	886
NCR - Quebec	30	21	19	30	33	39	40
Canada (including NCR)	**1,727**	**1,792**	**1,720**	**1,743**	**1,859**	**2,080**	**2,103**

Table 5.5 Federal government grants and contracts to industry for R&D in the natural sciences, by province and territories, 1995-96 to 2001-02

Province and territories	Year						
	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02
	in millions of dollars						
Newfoundland and Labrador	7	6	6	9	10	11	9
Prince Edward Island	2	2	2	4	2	5	3
Nova Scotia	15	15	16	10	10	12	20
New Brunswick	14	3	8	9	8	5	7
Quebec	211	209	226	176	158	186	252
Ontario	282	213	327	312	267	235	421
Manitoba	17	11	11	10	12	11	13
Saskatchewan	12	6	6	8	8	8	9
Alberta	23	20	24	21	25	21	26
British Columbia	47	48	58	117	142	49	54
Yukon, Northwest Territories and Nunavut	0	0	0	0	0	1	0
Canada	**631**	**533**	**684**	**676**	**642**	**544**	**814**

Table 5.6 Federal government grants and contracts to industry for R&D in the natural sciences, by province and territories, 2001-02

Department / program	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T. N.W.T. Nvt	**Canada**
						in millions of dollars						
A. Grants												
ACOA	2.4	0.8	3.2	3.8	0	0	0	0	0	0	0	10.2
CED(QUÉ)	0	0	0	0	10.5	0	0	0	0	0	0	10.5
IND:												
TPC[1]	2.6	0	0	0	154.5	108.5	1.1	0	2.9	20.1	0	289.7
Other	0	0	0	0	0	125.0	0	0	0	0	0	125.0
Total	**2.6**	**0**	**0**	**0**	**154.5**	**233.5**	**1.1**	**0**	**2.9**	**20.1**	**0**	**414.7**
NRC:												
IRAP[2]	2.7	1.9	4.1	3.1	14.5	29.2	1.7	2.3	6.8	14.0	0.3	80.6
Total	**2.7**	**1.9**	**4.1**	**3.1**	**14.5**	**29.2**	**1.7**	**2.3**	**6.8**	**14.0**	**0.3**	**80.6**
WEDC	0	0	0	0	0	0	0.2	1.0	6.0	2.1	0	9.3
Other	0	0	2	0	9.3	42.9	0.2	0.3	1.1	6.4	0	60.4
Total	**7.7**	**2.7**	**7.5**	**6.9**	**188.8**	**305.6**	**3.2**	**3.6**	**16.8**	**42.6**	**0.3**	**585.7**
% of grants	**1.3**	**0.5**	**1.3**	**1.2**	**32.2**	**52.2**	**0.5**	**0.6**	**2.8**	**7.3**	**0.1**	**100.0**
B. Contracts												
CSA	0.1	0	0.2	0.2	23.4	61.3	8.5	5.1	0.5	5.0	0	104.3
NDEF	0	0	12.0	0	31.8	40.3	0.5	0.1	7.7	4.1	0	96.5
NRCan	0	0.3	0	0.1	1.0	2.1	0	0	0.3	1.2	0	5.0
Other	0	0	0.3	0	7.4	11.7	0.9	0	0.5	1.3	0.2	22.3
Total	**0.1**	**0.3**	**12.5**	**0.3**	**63.6**	**115.4**	**9.9**	**5.2**	**9.0**	**11.6**	**0.2**	**228.1**
% of contracts	**0**	**0.1**	**5.5**	**0.1**	**27.9**	**50.6**	**4.3**	**2.3**	**4.0**	**5.1**	**0.1**	**100.0**
Total, grants and contracts	**7.8**	**3.0**	**20.0**	**7.2**	**252.4**	**421.0**	**13.1**	**8.8**	**25.8**	**54.2**	**0.5**	**813.8**
% of total	**1.0**	**0.3**	**2.4**	**0.9**	**31.0**	**51.7**	**1.6**	**1.1**	**3.2**	**6.7**	**0.1**	**100.0**

1. Technology Partnerships Canada
2. Industrial Research Assistance Program

Table 5.7 Federal government grants and contracts to universities for R&D, by province and territories, 1995-96 to 2001-02

Province and territories	Year						
	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02
	in millions of dollars						
Newfoundland and Labrador	9	8	9	10	15	18	19
Prince Edward Island	1	1	1	1	2	2	2
Nova Scotia	23	20	20	23	36	31	27
New Brunswick	8	7	7	11	10	11	22
Quebec	206	205	185	209	252	291	412
Ontario	276	257	246	292	360	456	518
Manitoba	23	21	20	23	28	34	39
Saskatchewan	17	19	14	22	27	41	43
Alberta	73	74	73	85	104	114	159
British Columbia	131	120	120	131	149	152	200
Yukon, Northwest Territories and Nunavut	0	0	0	0	0	0	0
Canada	**768**	**733**	**695**	**807**	**983**	**1,150**	**1,441**

Table 5.8 Federal intramural expenditures on science and technology for the National Capital Region, 1995-96 to 2001-02

Activity and science	Year						
	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02
	in millions of dollars						
Total National Capital Region							
Total - research and development							
SSH	55	67	68	76	85	84	90
NSE	750	704	689	735	736	805	836
Total	**805**	**771**	**757**	**811**	**821**	**889**	**926**
Related scientific activities							
SSH	771	874	772	821	838	957	1,168
NSE	350	322	290	310	322	284	509
Total	**1,121**	**1,196**	**1,062**	**1,131**	**1,160**	**1,241**	**1,677**
Total science and technology							
SSH	826	941	840	897	923	1,041	1,258
NSE	1,100	1,026	979	1,045	1,058	1,089	1,345
Total	**1,926**	**1,967**	**1,819**	**1,942**	**1,981**	**2,130**	**2,603**
National Capital Region (Ontario)							
Total - research and development							
SSH	50	61	63	70	79	77	82
NSE	726	689	675	711	709	773	803
Total	**776**	**750**	**738**	**781**	**788**	**850**	**885**
Related scientific activities							
SSH	618	736	646	700	722	825	1,020
NSE	272	224	201	213	228	200	405
Total	**890**	**960**	**847**	**913**	**950**	**1,025**	**1,425**
Total science and technology							
SSH	668	797	709	770	801	902	1,102
NSE	998	913	876	924	937	973	1,208
Total	**1,666**	**1,710**	**1,585**	**1,694**	**1,737**	**1,875**	**2,310**
National Capital Region (Quebec)							
Research and development							
SSH	6	6	5	6	6	7	8
NSE	24	15	14	24	27	32	33
Total	**30**	**21**	**19**	**30**	**33**	**39**	**41**
Related scientific activities							
SSH	152	138	126	121	116	132	148
NSE	78	98	89	97	94	84	104
Total	**230**	**236**	**215**	**218**	**210**	**216**	**252**
Total science and technology							
SSH	158	144	131	127	122	139	156
NSE	102	113	103	121	121	116	137
Total	**260**	**257**	**234**	**248**	**243**	**255**	**293**

Table 5.9 Federal expenditures on science and technology for the National Capital Region, 2001-02

Activity and science	Federal government	Business enterprises	Higher education	Other[1] Canadian performers	Total
			in millions of dollars		
National Capital Region (Ontario)					
Research and development					
SSH	82	1	13	14	110
NSE	803	197	48	4	1,052
Total	**885**	**198**	**61**	**18**	**1,162**
Related scientific activities					
SSH	1,020	6	15	7	1,048
NSE	405	4	10	4	423
Total	**1,425**	**10**	**25**	**11**	**1,471**
Total science and technology					
SSH	1,102	7	28	21	1,158
NSE	1,208	201	58	8	1,475
Total	**2,310**	**208**	**86**	**29**	**2,633**
National Capital Region (Quebec)					
Research and development					
SSH	8	0	0	0	8
NSE	33	1	1	1	36
Total	**41**	**1**	**1**	**1**	**44**
Related scientific activities					
SSH	148	0	0	0	148
NSE	104	0	0	1	105
Total	**252**	**0**	**0**	**1**	**253**
Total science and technology					
SSH	156	0	0	0	156
NSE	137	1	1	2	141
Total	**293**	**1**	**1**	**2**	**297**

1. Includes Canadian non-profit institutions, provincial and municipal governments and other Canadian performers.

Table 5.10 Personnel of federal establishments performing S&T activities, by department or agency and by province and territories, 2001-02

Department or agency	N.L.	P.E.I.	N.S.	N.B.	Que.*	Ont.*	Man.	Sask.	Alta.	B.C.	Y.T. N.W.T. Nvt	Sub-Total	NCR	Total
							person-years[1]							
ACOA	6	3	7	14	0	0	0	0	0	0	0	30	0	30
AECL	0	0	0	0	0	869	65	0	0	0	0	934	16	950
AGR	21	113	93	107	461	295	185	313	464	152	0	2,203	517	2,720
BC	0	0	3	0	3	6	0	0	2	2	0	16	222	238
CCRA	2	0	0	0	3	5	9	0	0	3	0	22	96	118
CED(QUÉ)	0	0	0	0	32	0	0	0	0	0	0	32	0	32
CFIA	16	7	33	9	51	20	10	62	49	35	0	293	137	430
CIDA	0	0	0	0	0	0	0	0	0	0	0	0	203	203
CIHR	0	0	0	0	0	0	0	0	0	0	0	0	173	173
CMC	0	0	0	0	0	0	0	0	0	0	0	0	421	421
CMHC	0	0	5	0	12	19	0	0	12	10	0	58	55	113
CMN	0	0	0	0	0	0	0	0	0	0	0	0	164	164
CNSC	0	0	0	0	0	0	0	0	0	0	0	0	8	8
COL	0	0	0	0	0	0	0	0	0	0	0	0	9	9
CSA	0	0	0	0	407	0	0	0	0	0	0	407	54	461
CSTM	0	0	0	0	0	0	0	0	0	0	0	0	261	261
EC	26	2	122	46	484	1,014	169	142	160	289	52	2,506	507	3,013
F&O	299	29	447	100	259	200	221	10	21	553	42	2,179	194	2,373
FA&IT	0	0	0	0	0	0	0	0	0	0	0	0	57	57
FIN	0	0	0	0	0	0	0	0	0	0	0	0	270	270
HC	0	0	6	0	55	90	168	0	9	16	0	344	2,127	2,471
HRDC	0	0	0	0	0	0	0	0	0	0	0	0	476	476
IDRC	0	0	0	0	0	0	0	0	0	0	0	0	142	142
IND	0	0	0	0	0	0	0	0	0	0	0	0	950	950
JUS	0	0	0	0	0	0	0	0	0	0	0	0	58	58
NA	0	0	0	0	0	0	0	0	0	0	0	0	601	601
NDEF	0	0	212	0	371	168	1	0	164	0	0	916	512	1,428
NEB	0	0	0	0	0	0	0	0	11	0	0	11	0	11
NGC	0	0	0	0	0	0	0	0	0	0	0	0	254	254
NL	0	0	0	0	0	0	0	0	0	0	0	0	465	465
NRC	82	2	100	5	416	89	105	148	5	155	0	1,107	2,505	3,612
NRCan	22	0	89	101	307	186	3	6	323	212	35	1,284	1,877	3,161
NSERC	0	0	0	0	0	0	0	0	0	0	0	0	264	264
PCA	25	5	69	15	73	169	80	19	41	46	74	616	187	803
PW&GS	0	0	0	0	0	0	0	0	0	0	0	0	61	61
SGEN	0	0	0	0	0	0	0	0	0	0	0	0	35	35
SSHRC	0	0	0	0	0	0	0	0	0	0	0	0	148	148
STCAN	0	0	85	0	105	161	35	20	61	91	0	559	5,761	6,320
TB	0	0	0	0	0	0	0	0	0	0	0	0	464	464
TC	0	0	0	0	20	0	0	0	0	0	0	20	43	63
WEDC	0	0	0	0	0	0	0	0	5	0	0	5	0	5
Other	0	0	0	0	2	0	0	0	0	0	0	3	196	171
TOTAL	**499**	**161**	**1,271**	**397**	**3,061**	**3,291**	**1,051**	**720**	**1,327**	**1,564**	**203**	**13,545**	**20,490**	**34,035**

* *Excluding the National Capital Region.*

1. *Including Administration of Extramural Programs Personnel.*

Table 5.11 Scientific and professional personnel of federal establishments performing S&T activities, by department or agency and by province and territories, 2001-02

Department or agency	N.L.	P.E.I.	N.S.	N.B.	Que.*	Ont.*	Man.	Sask.	Alta.	B.C	Y.T. N.W.T. Nvt	Sub-Total	NCR	Total
							person-years[1]							
AECL	0	0	0	0	0	464	33	0	0	0	0	497	2	499
AGR	5	27	22	26	110	70	44	75	111	36	0	526	148	674
CCRA	2	0	0	0	3	5	9	0	0	3	0	22	96	118
CFIA	4	3	13	3	20	7	5	18	12	12	0	97	42	139
CMC	0	0	0	0	0	0	0	0	0	0	0	0	77	77
CMHC	0	0	3	0	8	12	0	0	8	8	0	39	42	80
CMN	0	0	0	0	0	0	0	0	0	0	0	0	95	95
CSA	0	0	0	0	179	0	0	0	0	0	0	179	28	207
CSTM	0	0	0	0	0	0	0	0	0	0	0	0	22	22
EC	20	1	95	35	218	462	82	70	79	123	25	1,210	261	1,471
F&O	111	11	171	39	104	76	84	4	8	211	16	834	88	922
FIN	0	0	0	0	0	0	0	0	0	0	0	0	214	214
HC	0	0	2	0	26	37	57	0	6	1	0	129	1,381	1,510
HRDC	0	0	0	0	0	0	0	0	0	0	0	0	311	311
IND	0	0	0	0	0	0	0	0	0	0	0	0	415	415
NA	0	0	0	0	0	0	0	0	0	0	0	0	114	114
NDEF	0	0	74	0	132	48	0	0	42	0	0	296	289	585
NGC	0	0	0	0	0	0	0	0	0	0	0	0	38	38
NL	0	0	0	0	0	0	0	0	0	0	0	0	212	212
NRC	26	0	26	0	149	20	53	47	0	65	0	386	1,006	1,392
NRCan	11	0	52	41	179	79	1	3	170	139	16	691	978	1,669
PCA	11	1	18	6	17	41	25	7	21	19	26	193	62	255
STCAN	0	0	0	0	0	0	0	0	0	0	0	0	1,391	1,391
Other	0	0	2	0	20	4	0	0	12	1	0	40	648	688
TOTAL	**190**	**43**	**478**	**150**	**1,165**	**1,325**	**393**	**224**	**469**	**618**	**83**	**5,138**	**7,960**	**13,098**

* *Excluding the National Capital Region.*

1. *Including Administration of Extramural Programs Personnel.*

Table 5.12 Personnel of federal establishments performing R&D activities, by department or agency and by province and territories, 2001-02

Department or agency	N.L.	P.E.I.	N.S.	N.B.	Que.*	Ont.*	Man.	Sask.	Alta.	B.C.	Y.T. N.W.T. Nvt	Sub-Total	NCR	Total
							person-years[1]							
AECL	0	0	0	0	0	869	65	0	0	0	0	934	16	950
AGR	21	113	93	107	461	295	185	313	464	152	0	2,203	461	2,664
CSA	0	0	0	0	385	0	0	0	0	0	0	385	31	416
EC	2	0	8	3	158	400	16	52	14	48	0	701	143	844
F&O	108	8	168	35	96	79	87	4	8	215	17	825	70	895
HC	0	0	1	0	19	34	89	0	7	0	0	150	515	665
IDRC	0	0	0	0	0	0	0	0	0	0	0	0	118	118
IND	0	0	0	0	0	0	0	0	0	0	0	0	422	422
NDEF	0	0	212	0	371	168	0	0	164	0	0	915	383	1,298
NRC	67	0	83	0	352	66	87	128	0	112	0	895	1,612	2,507
NRCan	13	0	23	59	212	139	0	3	203	107	10	759	930	1,689
NSERC	0	0	0	0	0	0	0	0	0	0	0	0	233	233
STCAN	0	0	0	0	0	0	0	0	0	0	0	0	194	194
Other	7	10	8	14	60	0	5	28	14	8	0	155	689	844
TOTAL	**218**	**131**	**596**	**218**	**2,114**	**2,050**	**534**	**528**	**874**	**642**	**17**	**7,922**	**5,817**	**13,739**

* *Excluding the National Capital Region.*
1. *Including Administration of Extramural R&D Programs Personnel.*

Table 5.13 Personnel of federal establishments performing S&T activities, by department or agency in the National Capital Region, 2001-02

	NCR - Ontario			NCR - Quebec			NCR - Total		
Department or agency	R&D	RSA	Total	R&D	RSA	Total	R&D	RSA	Total
					person-years[1]				
AGR	461	56	517	0	0	0	461	56	517
BC	59	163	222	0	0	0	59	163	222
CCRA	0	96	96	0	0	0	0	96	96
CFIA	45	92	137	0	0	0	45	92	137
CIDA	0	0	0	23	180	203	23	180	203
CIHR	169	4	173	0	0	0	169	4	173
CMC	1	29	30	51	340	391	52	369	421
CMN	0	33	33	23	108	131	23	141	164
CSTM	0	261	261	0	0	0	0	261	261
EC	11	154	165	132	210	342	143	364	507
F&O	68	126	194	0	0	0	68	126	194
FIN	0	270	270	0	0	0	0	270	270
HC	515	1,610	2,125	0	2	2	515	1,612	2,127
HRDC	3	3	6	0	470	470	3	473	476
IDRC	118	25	143	0	0	0	118	25	143
IND	407	188	595	15	340	355	422	528	950
NA	0	487	487	0	114	114	0	601	601
NDEF	374	124	498	9	5	14	383	129	512
NGC	44	210	254	0	0	0	44	210	254
NL	0	284	284	0	181	181	0	465	465
NRC	1,612	893	2,505	0	0	0	1,612	893	2,505
NRCan	930	947	1,877	0	0	0	930	947	1,877
NSERC	233	31	264	0	0	0	233	31	264
PCA	0	0	0	0	187	187	0	187	187
SSHRC	77	71	148	0	0	0	77	71	148
STCAN	194	5,567	5,761	0	0	0	194	5,567	5,761
TB	0	464	464	0	0	0	0	464	464
Other	199	326	525	44	23	67	243	349	592
TOTAL	**5,520**	**12,514**	**18,034**	**297**	**2,160**	**2,457**	**5,817**	**14,674**	**20,491**

1. *Including Administration of Extramural R&D Programs Personnel.*

Table 5.14 Scientific and professional personnel of federal establishments performing R&D activities, by department or agency and by province and territories, 2001-02

Department or agency	N.L.	P.E.I.	N.S.	N.B.	Que. *	Ont. *	Man.	Sask.	Alta.	B.C.	Y.T. N.W.T. Nvt	Sub-Total	NCR	Total
							person-years[1]							
AECL	0	0	0	0	0	464	33	0	0	0	0	497	2	499
AGR	5	27	22	26	110	70	44	75	111	36	0	526	110	636
CSA	0	0	0	0	178	0	0	0	0	0	0	178	25	203
EC	2	0	8	3	85	232	16	37	13	25	0	421	91	512
F&O	40	3	63	13	36	29	33	2	3	81	6	309	32	341
HC	0	0	1	0	15	18	33	0	4	0	0	71	282	353
IND	0	0	0	0	0	0	0	0	0	0	0	0	171	171
NDEF	0	0	74	0	132	48	0	0	42	0	0	296	233	529
NRC	26	0	26	0	149	0	53	47	0	65	0	366	600	966
NRCan	8	0	14	28	123	72	0	2	112	77	0	436	475	911
NSERC	0	0	0	0	0	0	0	0	0	0	0	0	11	11
STCAN	0	0	0	0	0	0	0	0	0	0	0	0	124	124
Other	0	3	1	0	25	0	3	10	5	2	0	49	301	350
TOTAL	**81**	**33**	**209**	**70**	**853**	**933**	**215**	**173**	**290**	**286**	**6**	**3,149**	**2,457**	**5,606**

* *Excluding the National Capital Region.*
1. Including Administration of Extramural R&D Programs Personnel.

6. Expenditures on S&T by socio-economic objectives

Federal government expenditures on S&T by socio-economic objectives

Socio-economic objectives allow departments to classify their S&T resource allocations according to the purpose for which the expenditure is intended. The objectives are listed at the highest level of aggregation. In many cases, projects have multiple objectives and a department assigned its expenditures consistent with the stated objectives of the department.

The objectives are based on the nomenclature for the *analysis and comparison of scientific programs and budgets (NABS)* produced by the *statistical office of the European communities (Eurostat).*

The objectives of government funding of R&D have long been of interest to policy makers. *Eurostat* for many years had a sub-committee on R&D statistics which compiled data on government funding of R&D. The system of classification used was the *NABS* which was developed in 1969 and first revised in 1975.

Data by socio-economic objectives were previously collected as part of the main estimates science addendum exercise using *OECD* classifications.

Exploration and exploitation of the earth

Scientific activities with objectives related to the exploration of the earth's crust and mantle, seas, oceans and atmosphere, and scientific activities on their exploitation. It also includes climatic and meteorological research, polar exploration and hydrology.

Infrastructure and general planning of land-use

Scientific activities on infrastructure and land development, including research on the construction of buildings. More generally, all scientific activities relating to the general planning of land-use. This includes scientific activities into protection against harmful effects in town and country planning but not scientific activities into other types of pollution.

Pollution, protection and conservation of the environment

Scientific activities into the control of pollution, aimed at the identification and analysis of the sources of pollution and their causes, and all pollutants, including their dispersal in the environment and the effects on man, species (fauna, flora, micro-organisms) and biosphere. Development of monitoring facilities for the measurement of all kinds of pollution is included. The same is valid for the elimination and prevention of all forms of pollution in all types of environment.

Public health

Scientific activities aimed at protecting, promoting and restoring human health - broadly interpreted to include health aspects of nutrition and food hygiene. It ranges from preventative medicine, including all aspects of medical and surgical treatment, both for individuals and groups, and the provision of hospital and home care, to social medicine and paediatric and geriatric research.

Production, distribution and rational utilization of energy

Scientific activities into the production, storage, transportation, distribution and rational use of all forms of energy. It also includes scientific activities on processes designed to increase the efficiency of energy production and distribution, and the study of energy conservation.

Agricultural production and technology

Scientific activities on the promotion of agriculture, forestry, fisheries and foodstuff production. It includes: scientific activities on chemical fertilizers, biocides, biological pest control and the mechanization of agriculture; research on the impact of agricultural forestry activities on the environment; and scientific activities in the field of developing food productivity and technology.

Industrial production and technology

Scientific activities on the improvement of industrial production and technology. It includes scientific activities on industrial products and their manufacturing processes except where they form an integral part of the pursuit of other objectives (e.g. defence, space, energy, agriculture).

Social structures and relationships

Scientific activities on social objectives, as analyzed in particular by social and human sciences, which have no obvious connection with other objectives. This analysis includes quantitative, qualitative, organizational and forecasting aspects of social problems.

Exploration and exploitation of space

All civil space scientific activities, although civil space research is not, in general, concerned with particular objectives, it frequently has a specific goal, such as the increase of general knowledge (e.g. astronomy), or relates to particular applications (e.g. telecommunications satellites).

Non-oriented research
Basic activities motivated by scientific curiosity with the objective of increasing scientific knowledge. It also includes funding used to support postgraduate studies and fellowships.

Other civil research
Civil scientific activities which cannot (yet) be classified to a particular objective.

Defence
Scientific activities and development for military purposes. It also includes basic research and nuclear and space research financed by Ministry of Defence. Civil scientific activities financed by ministry of Defence, for example, in the fields of meteorology, telecommunications and health, should be classified in the relevant objectives.

Table 6.1 S&T expenditures by socio-economic objectives, 1999-00 to 2001-02

Socio-economic objectives	1999-00		2000-01		2001-02	
	Intramural[1]	Extramural	Intramural[1]	Extramural	Intramural[1]	Extramural
	in millions of dollars					
1. Exploration and exploitation of the earth	384	128	413	76	454	90
2. Infrastructure and general planning of land use:						
2.1 Transport	53	24	46	21	120	27
2.2 Telecommunication	26	44	30	15	48	23
2.3 Other	121	23	148	27	146	28
3. Pollution, protection and conservation of the environment	288	117	329	158	337	195
4. Public health	249	435	241	549	289	739
5. Production, distribution and rational utilization of energy	173	68	189	67	252	121
6. Agricultural production and technology:						
6.1 Agriculture	381	73	378	76	427	81
6.2 Fishing	112	16	131	30	125	19
6.3 Forestry	85	45	91	30	90	29
7. Industrial production and technology	165	406	225	542	242	894
8. Social structures and relationships	762	178	897	189	1,067	203
9. Exploration and exploitation of space	75	270	198	159	190	199
10. Non-oriented research	206	295	203	216	248	393
11. Other civil research	22	2	24	19	18	17
12. Defence	187	141	169	140	137	173
13. Other	57	329	16	350	18	383
Total S&T expenditures	**3,347**	**2,594**	**3,728**	**2,664**	**4,208**	**3,614**
			percent			
Percent	**56**	**44**	**58**	**42**	**54**	**46**

1. Non-program (indirect costs) are excluded

Table 6.2 R&D expenditures by socio-economic objectives, 1999-00 to 2001-02

Socio-economic objectives	1999-00		2000-01		2001-02	
	Intramural[1]	Extramural	Intramural[1]	Extramural	Intramural[1]	Extramural
	in millions of dollars					
1. Exploration and exploitation of the earth	186	99	207	46	125	69
2. Infrastructure and general planning of land use:						
2.1 Transport	42	23	37	20	71	24
2.2 Telecommunication	24	34	28	15	44	23
2.3 Other	42	16	48	20	29	25
3. Pollution, protection and conservation of the environment	122	88	143	112	142	148
4. Public health	103	390	116	519	152	709
5. Production, distribution and rational utilization of energy	171	68	187	64	248	117
6. Agricultural production and technology:						
6.1 Agriculture	334	67	333	70	345	75
6.2 Fishing	43	13	51	14	47	15
6.3 Forestry	77	43	83	27	75	27
7. Industrial production and technology	137	398	165	518	164	741
8. Social structures and relationships	50	87	53	106	46	130
9. Exploration and exploitation of space	68	269	187	154	175	193
10. Non-oriented research	150	256	150	188	181	286
11. Other civil research	14	1	16	17	15	17
12. Defence	167	121	150	119	134	142
13. Other	4	58	3	62	5	67
Total R&D expenditures	**1,734**	**2,031**	**1,957**	**2,070**	**1,998**	**2,808**
			percent			
Percent	**46**	**54**	**49**	**51**	**42**	**58**

1. Non-program (indirect costs) are excluded

Table 6.3 S&T expenditures by socio-economic objectives and activity, 2001-02

Socio-economic objectives	Intramural[1]			Extramural			Total		
	R&D	RSA	S&T	R&D	RSA	S&T	R&D	RSA	S&T
	in millions of dollars								
1. Exploration and exploitation of the earth	125	329	454	69	21	90	194	350	544
2. Infrastructure and general planning of land use:									
2.1 Transport	71	49	120	24	3	27	95	52	147
2.2 Telecommunication	44	4	48	23	0	23	67	4	71
2.3 Other	29	117	146	25	3	28	54	120	174
3. Pollution, protection and conservation of the environment	142	195	337	148	47	195	290	242	532
4. Public health	152	137	289	709	30	739	861	167	1,028
5. Production, distribution and rational utilization of energy	248	4	252	117	4	121	365	7	372
6. Agricultural production and technology:									
6.1 Agriculture	345	82	427	75	6	81	420	89	509
6.2 Fishing	47	78	125	15	4	19	62	81	143
6.3 Forestry	75	15	90	27	2	29	102	18	120
7. Industrial production and technology	164	78	242	741	153	894	905	230	1,135
8. Social structures and relationships	46	1,021	1,067	130	73	203	176	1,094	1,270
9. Exploration and exploitation of space	175	15	190	193	6	199	368	22	390
10. Non-oriented research	181	67	248	286	107	393	467	174	641
11. Other civil research	15	3	18	17	0	17	32	3	35
12. Defence	134	3	137	142	31	173	276	34	310
13. Other	5	13	18	67	316	383	72	329	401
Total expenditures	**1,998**	**2,210**	**4,208**	**2,808**	**806**	**3,614**	**4,806**	**3,016**	**7,822**
					percent				
Percent of Activity	**47**	**53**	**100**	**78**	**22**	**100**	**61**	**39**	**100**
Percent of total	**26**	**28**	**54**	**36**	**10**	**46**	**61**	**39**	**100**

1. Non-program (indirect costs) are excluded

Chart 6.1 S&T and R&D expenditure percentages by socio-economic objectives, 2001-02

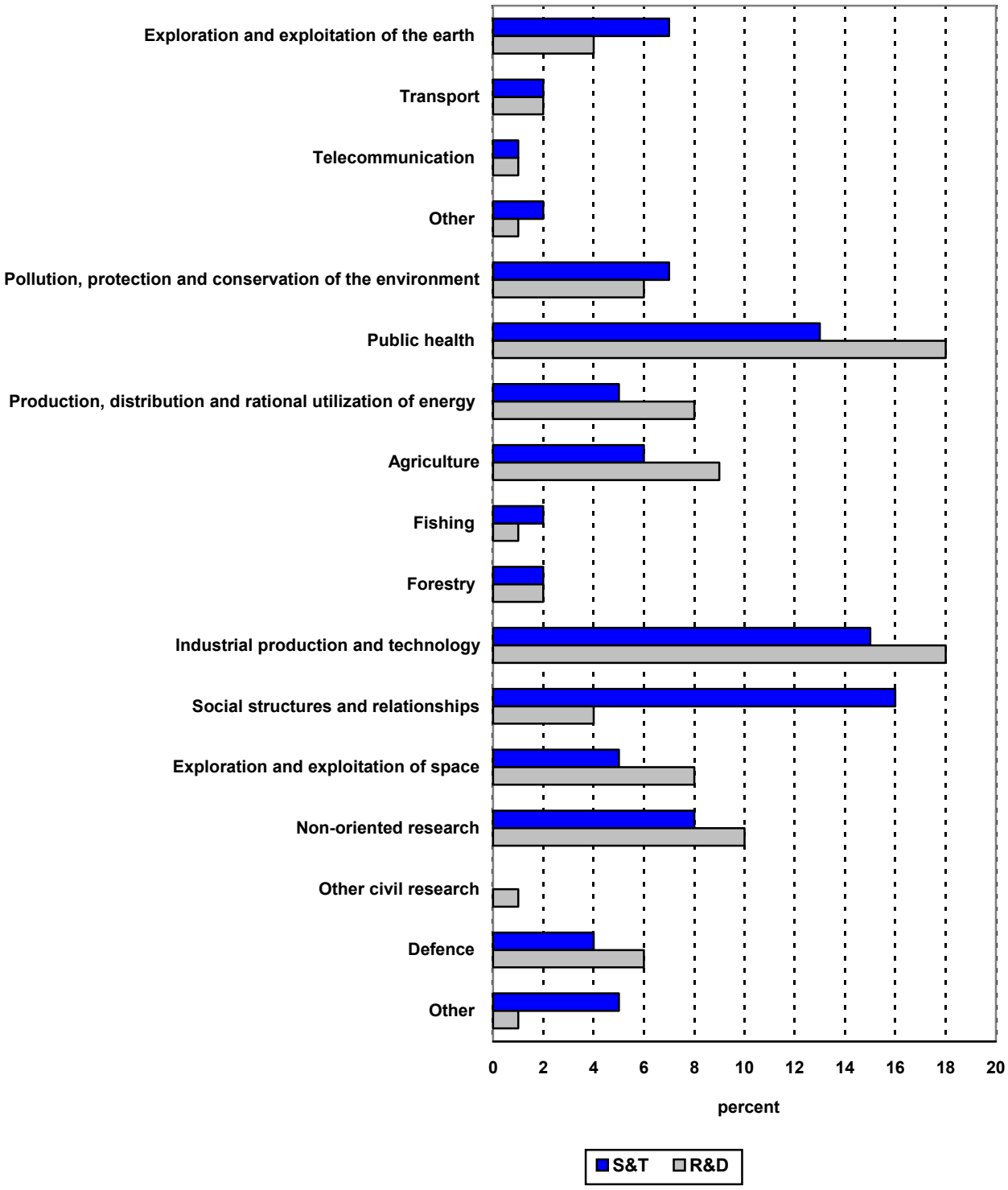


Table 6.4 S&T expenditure percentages by socio-economic objectives and activity, 2001-02

Socio-economic objectives	R&D			RSA			S&T		
	Intra-mural[1]	Extra-mural	Total	Intra-mural[1]	Extra-mural	Total	Intra-mural[1]	Extra-mural	Total
					percent				
1. Exploration and exploitation of the earth	6	2	4	15	3	12	11	2	7
2. Infrastructure and general planning of land use:									
2.1 Transport	4	1	2	2	0	2	3	1	2
2.2 Telecommunication	2	1	1	0	0	0	1	1	1
2.3 Other	1	1	1	5	0	4	3	1	2
3. Pollution, protection and conservation of the environment	7	5	6	9	6	8	8	5	7
4. Public health	8	25	18	6	4	5	7	20	13
5. Production, distribution and rational utilization of energy	12	4	8	0	1	0	6	3	5
6. Agricultural production and technology:									
6.1 Agriculture	17	3	9	4	1	3	10	2	6
6.2 Fishing	2	1	1	3	0	3	3	0	2
6.3 Forestry	4	1	2	1	0	0	2	1	2
7. Industrial production and technology	8	26	18	4	19	8	6	25	15
8. Social structures and relationships	2	5	4	46	9	36	25	6	16
9. Exploration and exploitation of space	9	7	8	1	1	1	5	6	5
10. Non-oriented research	10	10	10	3	13	6	6	11	8
11. Other civil research	1	1	1	0	0	0	0	0	0
12. Defence	7	5	6	0	4	1	3	5	4
13. Other	0	2	1	1	39	11	1	11	5
Total Percent	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
					in millions of dollars				
Total Expenditures	**1,998**	**2,808**	**4,806**	**2,210**	**806**	**3,016**	**4,208**	**3,614**	**7,822**
					percent				
Percent of Activity	**42**	**58**	**100**	**73**	**27**	**100**	**54**	**46**	**100**
Percent of Total	**26**	**36**	**61**	**28**	**10**	**39**	**54**	**46**	**100**

1. Non-program (indirect costs) are excluded

Table 6.5 S&T expenditures by socio-economic objectives and major department and agency, 2001-02

Socio-economic objectives	AGR	CIDA	CIHR	EC	NDEF	NRC	NRCan	NSERC	STCAN	Others	Total	%
						in millions of dollars						
1. Exploration and exploitation of the earth	0	0	0	213	0	2	151	31	0	146	543	7
2. Infrastructure and general planning of land use:												
2.1 Transport	0	0	0	0	0	48	0	9	4	86	147	2
2.2 Telecommunication	0	0	0	0	0	32	0	0	0	39	71	1
2.3 Other	0	0	0	0	0	30	26	11	0	107	174	2
3. Pollution, protection and conservation of the environment	0	0	0	335	0	36	0	84	0	77	532	7
4. Public health	0	0	527	0	0	6	3	70	9	413	1,028	13
5. Production, distribution and rational utilization of energy	0	0	0	0	0	4	151	29	0	189	373	5
6. Agricultural production and technology:												
6.1 Agriculture	324	0	0	0	0	33	0	44	22	86	509	7
6.2 Fishing	0	0	0	0	0	2	0	8	0	133	143	2
6.3 Forestry	0	0	0	0	0	3	103	8	0	5	119	1
7. Industrial production and technology	0	0	0	6	0	164	49	201	0	716	1,136	15
8. Social structures and relationships	0	0	0	0	0	0	0	3	644	623	1,270	16
9. Exploration and exploitation of space	0	0	0	0	0	35	0	12	0	342	389	5
10. Non-oriented research	0	0	0	0	0	218	0	75	0	348	641	8
11. Other civil research	0	0	0	0	0	15	0	0	0	20	35	0
12. Defence	0	0	0	0	310	0	0	0	0	0	310	4
13. Other	0	384	0	0	0	0	0	0	0	18	402	5
Total S&T expenditures[1]	**324**	**384**	**527**	**554**	**310**	**628**	**483**	**585**	**679**	**3,348**	**7,822**	
						percent						
Percent	**4**	**5**	**7**	**7**	**4**	**8**	**6**	**7**	**9**	**43**	**100**	**100**

1. Non-program (indirect costs) are excluded

Table 6.6 S&T Intramural expenditures by socio-economic objectives and major department and agency 2001-02

Socio-economic objectives	AECL	AGR	EC	F&O	HC	NDEF	NRC	NRCan	STCAN	Others	Total	%
						in millions of dollars						
1. Exploration and exploitation of the earth	0	0	178	121	0	0	2	148	0	5	454	11
2. Infrastructure and general planning of land use:												
2.1 Transport	0	0	0	0	0	0	58	48	4	10	120	3
2.2 Telecommunication	0	0	0	0	0	0	21	0	0	27	48	1
2.3 Other	0	0	0	0	0	0	30	26	0	90	146	3
3. Pollution, protection and conservation of the environment	0	0	253	45	0	0	29	0	0	10	337	8
4. Public health	0	0	0	0	166	0	61	0	9	52	288	7
5. Production, distribution and rational utilization of energy	168	0	0	0	0	0	2	75	0	7	252	6
6. Agricultural production and technology:												
6.1 Agriculture	0	312	0	0	0	0	26	0	22	67	427	10
6.2 Fishing	0	0	0	123	0	0	0	0	0	1	124	3
6.3 Forestry	0	0	0	0	0	0	2	87	0	1	90	2
7. Industrial production and technology	0	0	2	0	0	0	109	46	0	85	242	6
8. Social structures and relationships	0	0	0	0	0	0	0	0	643	424	1,067	25
9. Exploration and exploitation of space	0	0	0	0	0	0	24	0	0	166	190	5
10. Non-oriented research	0	0	0	0	0	0	178	0	0	71	249	6
11. Other civil research	0	0	0	0	0	0	15	0	0	3	18	0
12. Defence	0	0	0	0	0	138	0	0	0	0	138	3
13. Other	0	0	0	0	0	0	0	0	0	18	18	1
Total S&T expenditures[1]	**168**	**312**	**433**	**289**	**166**	**138**	**557**	**430**	**678**	**1,037**	**4,208**	
						percent						
Percent	**4**	**8**	**10**	**7**	**4**	**3**	**13**	**10**	**16**	**25**	**100**	**100**

1. Non-program (indirect costs) are excluded

Table 6.7 S&T extramural expenditures by socio-economic objectives and major department and agency, 2001-02

Socio-economic objectives	CIDA	CIHR	CSA	IND	NDEF	NCR	NSERC	SSHRC	Others	Total	%
						in millions of dollars					
1. Exploration and exploitation of the earth	0	0	0	0	0	0	29	0	61	90	2
2. Infrastructure and general planning of land use:											
2.1 Transport	0	0	0	0	0	4	9	2	12	27	1
2.2 Telecommunication	0	0	0	0	0	11	0	0	12	23	1
2.3 Other	0	0	0	0	0	0	10	0	18	28	1
3. Pollution, protection and conservation of the environment	0	0	0	0	0	7	80	5	103	195	5
4. Public health	0	496	0	0	0	7	66	11	159	739	20
5. Production, distribution and rational utilization of energy	0	0	0	0	0	3	28	0	90	121	3
6. Agricultural production and technology:											
6.1 Agriculture	0	0	0	0	0	7	42	0	33	82	2
6.2 Fishing	0	0	0	0	0	2	8	1	8	19	1
6.3 Forestry	0	0	0	0	0	1	7	1	19	28	1
7. Industrial production and technology	0	0	0	581	0	55	190	9	59	894	25
8. Social structures and relationships	0	0	0	0	0	0	2	98	103	203	6
9. Exploration and exploitation of space	0	0	168	0	0	11	11	0	9	199	5
10. Non-oriented research	0	0	0	0	0	40	71	216	66	393	11
11. Other civil research	0	0	0	0	0	1	0	0	16	17	0
12. Defence	0	0	0	0	173	0	0	0	0	173	5
13. Other	370	0	0	0	0	0	0	0	13	383	11
Total S&T expenditures	**370**	**496**	**168**	**581**	**173**	**149**	**553**	**343**	**781**	**3,614**	
						percent					
Percent	**10**	**14**	**5**	**16**	**5**	**4**	**15**	**9**	**22**	**100**	**100**

Table 6.8 R&D expenditures by socio-economic objectives and major department and agency, 2001-02

Socio-economic objectives	AGR	CIHR	CSA	EC	IND	NDEF	NRC	NRCan	NSERC	Others	Total	%
						in millions of dollars						
1. Exploration and exploitation of the earth	0	0	0	60	0	0	2	34	27	71	194	4
2. Infrastructure and general planning of land use:												
2.1 Transport	0	0	0	0	0	0	55	0	8	32	95	2
2.2 Telecommunication	0	0	0	0	23	0	29	0	0	15	67	1
2.3 Other	0	0	0	0	0	0	26	0	10	18	54	1
3. Pollution, protection and conservation of the environment	0	0	0	139	0	0	32	0	74	45	290	6
4. Public health	0	521	0	0	0	0	60	0	61	219	861	18
5. Production, distribution and rational utilization of energy	0	0	0	0	0	0	4	151	26	184	365	7
6. Agricultural production and technology:												
6.1 Agriculture	316	0	0	0	0	0	29	0	39	36	420	9
6.2 Fishing	0	0	0	0	0	0	2	0	7	53	62	1
6.3 Forestry	0	0	0	0	0	0	2	87	7	6	102	2
7. Industrial production and technology	0	0	0	5	472	0	150	39	177	62	905	19
8. Social structures and relationships	0	0	0	0	2	0	0	0	2	172	176	4
9. Exploration and exploitation of space	0	0	314	0	0	0	31	0	11	12	368	8
10. Non-oriented research	0	0	0	0	0	0	195	0	66	206	467	10
11. Other civil research	0	0	0	0	0	0	14	0	0	18	32	1
12. Defence	0	0	0	0	0	276	0	0	0	0	276	6
13. Other	0	0	0	0	0	0	0	0	0	72	72	1
Total R&D expenditures[1]	**316**	**521**	**314**	**204**	**497**	**276**	**631**	**311**	**515**	**1,221**	**4,806**	
						percent						
Percent	**7**	**11**	**7**	**4**	**10**	**6**	**13**	**6**	**11**	**25**	**100**	**100**

1. Non-program (indirect costs) are excluded

Table 6.9 R&D intramural expenditures by socio-economic objectives and major department and agency, 2001-02

Socio-economic objectives	AECL	AGR	CSA	EC	F&O	NDEF	NRC	NRCan	Others	Total	%
						in millions of dollars					
1. Exploration and exploitation of the earth	0	0	0	38	48	0	2	33	4	125	6
2. Infrastructure and general planning of land use:											
2.1 Transport	0	0	0	0	0	0	51	11	9	71	4
2.2 Telecommunication	0	0	0	0	0	0	18	0	26	44	2
2.3 Other	0	0	0	0	0	0	26	0	3	29	1
3. Pollution, protection and conservation of the environment	0	0	0	91	18	0	25	0	8	142	7
4. Public health	0	0	0	0	0	0	53	0	99	152	8
5. Production, distribution and rational utilization of energy	168	0	0	0	0	0	1	75	4	248	12
6. Agricultural production and technology:											
6.1 Agriculture	0	305	0	0	0	0	23	0	17	345	17
6.2 Fishing	0	0	0	0	46	0	0	0	1	47	2
6.3 Forestry	0	0	0	0	0	0	2	72	1	75	4
7. Industrial production and technology	0	0	0	0	0	0	95	39	30	164	8
8. Social structures and relationships	0	0	0	0	0	0	0	0	46	46	2
9. Exploration and exploitation of space	0	0	149	0	0	0	20	0	6	175	9
10. Non-oriented research	0	0	0	0	0	0	155	0	26	181	10
11. Other civil research	0	0	0	0	0	0	13	0	2	15	1
12. Defence	0	0	0	0	0	134	0	0	0	134	7
13. Other	0	0	0	0	0	0	0	0	5	5	0
Total R&D expenditures[1]	**168**	**305**	**149**	**129**	**112**	**134**	**484**	**230**	**287**	**1,998**	
						percent					
Percent	**8**	**15**	**7**	**7**	**6**	**7**	**24**	**12**	**14**	**100**	**100**

1. Non-program (indirect costs) are excluded

Table 6.10 R&D extramural expenditures by socio-economic objectives and major department and agency, 2001-02

Socio-economic objectives	CFI	CIHR	CSA	IND	NDEF	NRC	NSERC	SSHRC	Others	Total	%
						in millions of dollars					
1. Exploration and exploitation of the earth	15	0	0	0	0	0	26	0	28	69	2
2. Infrastructure and general planning of land use:											
2.1 Transport	0	0	0	0	0	4	8	2	10	24	1
2.2 Telecommunication	9	0	0	0	0	11	0	0	3	23	1
2.3 Other	2	0	0	0	0	0	9	0	14	25	1
3. Pollution, protection and conservation of the environment	11	0	0	0	0	7	70	4	56	148	5
4. Public health	96	490	0	0	0	8	58	9	48	709	25
5. Production, distribution and rational utilization of energy	3	0	0	0	0	3	24	0	87	117	4
6. Agricultural production and technology:											
6.1 Agriculture	11	0	0	0	0	7	37	0	20	75	3
6.2 Fishing	2	0	0	0	0	2	7	1	3	15	1
6.3 Forestry	1	0	0	0	0	1	6	2	17	27	1
7. Industrial production and technology	43	0	0	454	0	55	167	8	14	741	26
8. Social structures and relationships	7	0	0	0	0	0	2	78	43	130	5
9. Exploration and exploitation of space	1	0	165	0	0	11	10	0	6	193	7
10. Non-oriented research	31	0	0	0	0	40	63	131	21	286	10
11. Other civil research	0	0	0	0	0	1	0	0	16	17	1
12. Defence	0	0	0	0	142	0	0	0	0	142	5
13. Other	0	0	0	0	0	0	0	0	67	67	2
Total R&D expenditures	**232**	**490**	**165**	**454**	**142**	**150**	**487**	**235**	**453**	**2,808**	
						percent					
Percent	**8**	**17**	**6**	**16**	**5**	**6**	**17**	**8**	**17**	**100**	**100**

Abbreviations
Departments and agencies

ACOA	Atlantic Canada Opportunities Agency	HC	Health Canada
AECB	Atomic Energy Control Board	HRDC	Human Resources Development Canada
AECL	Atomic Energy of Canada Limited	IAND	Indian Affairs and Northern Development
AGR	Agriculture and Agri-Food Canada	IDRC	International Development Research Centre
BC	Bank of Canada	IJC	International Joint Commission
C&I	Citizenship and Immigration	IND	Industry Canada
CBC	Canadian Broadcasting Corporation	ISTC	Industry, Science and Technology Canada
CCMD	Canadian Centre for Management Development	JUS	Justice
CCRA	Canada Customs and Revenue Agency	MRC	Medical Research Council
CED(Qué)	Canada Economic Development (Québec Regions)	NA	National Archives
CFI	Canada Foundation for Innovation	NDEF	National Defence
CFIA	Canadian Food Inspection Agency	NEB	National Energy Board
CH	Canadian Heritage	NFB	National Film Board
CHRC	Canadian Human Rights Commission	NGC	National Gallery of Canada
CIDA	Canadian International Development Agency	NL	National Library
CIHR	Canadian Institutes of Health Research	NRC	National Research Council
CITT	Canadian International Trade Tribunal	NRCan	Natural Resources Canada
CMC	Canadian Museum of Civilization	NREV	Revenue Canada
CMHC	Canada Mortgage and Housing Corporation	NSERC	Natural Sciences and Engineering Research Council
CMN	Canadian Museum of Nature	NTA	National Transportation Agency of Canada
CNSC	Canadian Nuclear Safety Commission	PC	Privy Council Office
COL	Commissioner of Official Languages	PCA	Parks Canada Agency
CSA	Canadian Space Agency	PSC	Public Service Commission
CSTM	Canada Science and Technology Museum	PW&GS	Public Works and Government Services Canada
EA	External Affairs	RCMP	Royal Canadian Mounted Police
EC	Environment Canada	SC	Science Council of Canada
EMR	Energy, Mines and Resources	SGEN	Solicitor General
EPC	Emergency Preparedness Canada	SSHRC	Social Sciences and Humanities Research Council
F&O	Fisheries and Oceans Canada	STCAN	Statistics Canada
FA&IT	Foreign Affairs and International Trade Canada	SWC	Status of Women Canada
FIN	Finance	TB	Treasury Board
FOR	Forestry	TC	Transport Canada
FORD	Federal Office of Regional Development Québec	URC	University Research Councils
GC	Genome Canada	WEDC	Western Economic Diversification Canada

Technical notes and definitions

Scope and limitations of the data

The expenditures data for scientific activities controlled by federal departments and agencies provided in this document correspond to the budgetary expenditures by program presented in Main Estimates for the approval of Parliament. The following kinds of non-budgetary costs or expenditures are not included:

> loans or advances to and investments in Crown Corporations; loans or advances for specific purposes to other governments and international organizations or persons or corporations in the private sector.

Reliability of the data

All the possible sources of error were examined. Definitions have been taken from a compendium of methods of error evaluation in c**ensuses and surveys**, Statistics Canada, catalogue no. 13-564.

- A complete enumeration is carried out of all federal departments and agencies involved in scientific activities.
- Being a census, coverage and non response are very minor causes of error.
- No imputation, coding, or sampling is done by Statistics Canada for this exercise.

Data capture

"The data capture operation in a census or survey consists of converting the data received on questionnaires (e.g., respondent answers) or coding forms to a machine readable format."

All data capture for science statistics is through manual intervention, at a computer terminal.

Significant uncorrected data capture errors are unlikely because of the examination of numerous tables and listings prepared for data analysis before publication tables are created. Mistakes in expenditures due to coding error are believed to be less than 1%.

Edit

"The edit procedures usually consist of: (i) checking each field of every record to ascertain whether it contains a valid code or entry; (ii) checking codes or entries in certain predetermined combinations of fields to ascertain whether codes or entries are consistent with one another."

Although there are a number of edits, all cases of failed edit checks are corrected after consideration by editors.

Definitions for the natural sciences and engineering

The natural sciences and engineering (NSE) field embraces the disciplines of study concerned with understanding, exploring, developing or utilizing the natural world. Included are the engineering, mathematical, life and physical sciences.

Scientific research and experimental development (R&D)

Creative work undertaken on a systematic basis in order to increase the stock of scientific and technical knowledge and to use this knowledge in new applications.

The central characteristic of R&D is an appreciable element of novelty and of uncertainty. New knowledge, products or processes are sought. The work is normally performed by, or under the supervision of, persons with postgraduate degrees in the natural sciences or engineering.

An R&D project generally has three characteristics:

- a substantial element of uncertainty, novelty and innovation;
- a well-defined project design;
- a report on the procedures and results of the projects.

Related scientific activities (RSA)
Those activities which complement and extend R&D by contributing to the generation, dissemination and application of scientific and technological knowledge. The kinds of related scientific activities for the natural sciences are:

(i) **Scientific data collection**
The gathering, processing, collating and analyzing of data on natural phenomena. These data are normally the results of surveys, routine laboratory analyses or compilations of operating records. Data collected as part of an existing or proposed R&D project are charged to research. Similarly, the costs of analyzing existing data as part of a research project are R&D costs, even when the data were originally collected for some other purpose. The development of new techniques for data collection is also to be considered to be a research activity. Examples of scientific data collection are routine geological, hydrographic, oceanographic and topographic surveys; routine astronomical observations; maintenance of meteorological records; and wildlife and fisheries surveys.

(ii) **Information services**
All work directed to recording, classifying, translating and disseminating scientific and technological information as well as museum services. Included are the operations of scientific and technical libraries, S&T consulting and advisory services, the Patent Office, the publication of scientific journals and monographs, and the organizing of scientific conferences. Grants for the publication of scholarly works are also included.

General purpose information services or information services directed primarily towards the general public are excluded, as are general departmental and public libraries. When individual budgets exist, the costs of libraries which belong to institutions otherwise entirely classified to another activity, such as R&D, should be assigned to information services. The costs of printing and distributing reports from another activity, such as R&D, are normally attributable to that activity.

Sub categories under information services include

Museum services - The collecting, cataloguing, and displaying of specimens of the natural world or of representations of natural phenomena. The activity involves a systematic attempt to preserve and display items from the natural world; in some ways it could be considered an extension of information services. The scientific activities of natural history museums, zoological and botanical gardens, aquaria, planetaria and nature reserves are included. Parks which are not primarily restricted reserves for certain fauna or flora are excluded. In all cases the costs of providing entertainment and recreation to visitors should be excluded (e.g. restaurants, children's gardens and museums).

When a museum also covers not only natural history but also aspects of human cultural activities, the museum's resources should be appropriated between the natural and social sciences. However, museums of science and technology, war, etc., which display synthetic or artificial objects and may also illustrate the operations of certain technologies, should be considered as engaged in museum services in social sciences.

(iii) **Special services and studies**
Work 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

Examples of special studies: a study of the viability of petrochemical complex in a certain region of Canada; the Royal commission of poverty; the MacKenzie valley pipeline inquiry; the Manitoba guaranteed income experiment; and social impact studies resulting from development of the Hibernia oil fields (net costs).

Sub categories under special services and studies include:

Testing and standardization - Work directed towards the establishment of national and international standards for materials, devices, products and processes, the calibration of secondary standards and non-routine quality testing. The development of new measures for standards, or of new methods of measuring or testing, is R&D and should be reported as such. Exclude routine testing such as monitoring radioactivity levels or soil tests before construction.

Feasibility studies - Technical investigations of proposed engineering projects to provide additional information required to reach decisions on implementation. Besides feasibility studies per se, the related activity of demonstration projects are to be included. Demonstration projects involve the operation of scaled-up versions of a facility or process, or data on factors such as costs, operational characteristics, market demand and public acceptance. Projects called 'demonstration projects' but which conform to the definition of R&D should be considered R&D. Once a facility or process is operated primarily to provide a service or to gain revenue, rather than as a demonstration, it should no longer be included with feasibility studies. In all demonstration projects, only the net costs should be considered. Examples of demonstration projects are the Spry Point Ark, the Geothermal heating project, Regina, and the fluidized bed combustion system, P.E.I..

(iv) **Education support**

Grants to individuals or institutions on behalf of individuals which are intended to support the post-secondary education of students in technology and the natural sciences. General operating or capital grants are excluded. The activity includes the support of foreign students in their studies of the natural sciences at Canadian or foreign institutions. Grants intended primarily to support the research of individuals at universities are either R&D grants or research fellowships:

Definitions for the social sciences and humanities

The social sciences and humanities (SSH) field embraces all disciplines involved in studying human actions and conditions and the social, economic and institutional mechanisms affecting humans. Included are such disciplines as anthropology, demography, economics, geography, history, languages, literature and linguistics, law, library science, philosophy, political science, psychology, religious studies, social work, sociology, and urban and regional studies.

Research and experimental development (R&D)

Creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of humans, culture and society and the use of this stock of knowledge to devise new applications.

R&D requires the acquisition of knowledge and not just information. New knowledge involves the integration of newly acquired information into existing hypotheses, the formulation and testing of new hypotheses or the re-evaluation of existing observations.

An R&D project generally has three characteristics:

- a substantial element of uncertainty, novelty and innovation;
- a well defined project design;
- a report on the procedures and results of the project.

Related scientific activities (RSA)

Those activities which complement and extend R&D by contributing to the generation, dissemination and application of scientific and technological knowledge. The kinds of related scientific activities for the social sciences and humanities are:

i. **General purpose data collection**

The routine gathering, processing, collating, analysis and publication of information on human phenomena using surveys, regular and special investigations and compilations of existing records. It excludes data collected primarily for internal administrative purposes (e.g., departmental personnel statistics) as well as the collection of data as part of an R&D project. Data collected as part of an existing or proposed research project are costed against research. Similarly the costs of analyzing existing data as part of a research project are R&D costs, even when the data were originally collected for some other purpose. The development of new techniques for data collection is also considered a research activity. The institutions involved are generally the statistical bureaux of Canadian governments and the statistical sections of departments and agencies. If there are units whose principal activity is R&D, their costs and personnel should be assigned to R&D; specialized libraries with separate budgets should be assigned to information services.

ii. **Information services**

All work related to recording, classifying, translating and disseminating scientific and technological information as well as museum services. Included are the operations of scientific and technical libraries S&T consulting and advisory services, the Patent Office, the publication of scientific journals and monographs, and the organizing of scientific conferences. Grants for the publication of scholarly works are also included.

General purpose information services or information services directed primarily towards the general public are excluded, as are general departmental and public libraries. When individual budgets exist, the costs of libraries which belong to institutions otherwise entirely classified to another activity, such as R&D, should be assigned to information services. The costs of printing and distributing reports from another activity, such as R&D, are normally attributable to that activity.

Sub categories under Information Services include:

Museum services - The collecting, cataloguing, and displaying of specimens and representations relating to human history, social organization and creations. The activity involves a systematic attempt to preserve and display the works of human beings and to provide information on their works, history, and nature. The scientific activities of historical museums, archaeological displays, and art galleries are included. In all cases, the costs of providing entertainment and recreation to visitors should be excluded (e.g. restaurants, children's gardens and museums).

When a museum also covers not only natural history but also aspects of human cultural activities, the museum's resources should be appropriated between the natural and social sciences. However, museums of science and technologies, war, etc., which display synthetic or artificial objects and may also illustrate the operations of certain technologies, should be considered as engaged in museum services in social sciences.

iii. **Special Services and studies**

Systematic investigations carried out in order to provide information needed for planning or policy formulation. Demonstration projects are also included.

The work is usually carried out by specialized units in some government departments, by consultants, by royal commissions, and by task forces. The activity is similar to R&D since it may require innovative analyses and a high degree of scientific ability. However, such studies are not intended to acquire new knowledge but to provide specific answers to specific problems (generally immediate, localized and perhaps temporary). The day-to-day operations of units concerned with departmental planning, organization or management are not normally included (i.e. administrative records kept by Departments of Education) but special projects may be relevant.

Examples of special studies: a study of the viability of petrochemical complex in a certain region of Canada; the Royal Commission of Poverty; the MacKenzie Valley Pipeline Inquiry; the Manitoba Guaranteed Income Experiment; and social impact studies resulting from development of the Hibernia Oil Fields (net costs).

Sub categories under Special Services and Studies include:

Economic and feasibility studies - Investigations of the socio-economic characteristics and implications of specific situations. Such studies are generally limited to a specific problem and involve the application of established social science techniques and methodologies. Examples are a study of the viability of an iron foundry in a foreign country, and a cost-benefit study of a proposed paper manufacturing centre in Manitoba.

Operations and policy studies - The analysis and assessment of departmental programs, policies and operations, the activities of units concerned with the continuing analysis and monitoring of external phenomena (e.g., foreign economic statistics, defence and security information) as well as studies to provide an information base for policy development. The work is carried out by specialized units in some government departments, by consultants, by royal commissions and by task forces.

iv. **Education support**

Grants to individuals or institutions on behalf of individuals which are intended to support the post-secondary education of students in technology and the social sciences. General purpose grants to educational institutions are excluded. The activity includes the support of foreign students in their studies of the social sciences at Canadian or foreign institutions. Grants intended primarily to support the research of individuals at universities are either R&D grants or research fellowships.

Definitions related to both science fields

Administration of extramural programs

The costs of identifiable units engaged in the administration of contracts and grants and contributions for scientific activities that are to be performed outside the Federal Government. These expenditures are broken down by the type of scientific activity supported, i.e., R&D or RSA.

Intramural performance

Where the S&T activities are managed and carried out primarily by federal government employees they are classified as intramural S&T. Even where major components of the project are provided by outside agencies, such as computer services, laboratory construction, testing of prototype equipment, if the planning, supervision, reporting, and key operating functions are performed by federal personnel, then the activity is considered to be intramural. This also applies to S&T activities carried out by a department or agency on behalf of another federal department or agency on a cost recovery basis.

The intramural expenditures reported for scientific activities are those direct costs, including salaries, associated with scientific programs. These costs include that portion of a program's contribution to employee benefit plans (e.g. superannuation) which is applicable to the scientific personnel within the program. Non-program ("in direct") costs, such as the value of services provided by other departments without charge and accommodation provided by the reporting program are also included.

Extramural performance

The management and conduct of an S&T activity is entrusted to a non-federal organization. The six extramural performance sectors used in surveying S&T expenditures by the Federal Government are:

(i) **Canadian business enterprises**. This sector is composed of business and government enterprises, including public utilities and government owned firms and frequently referred to as the industry sector. Incorporated consultants providing scientific and engineering services are also included. Industrial research institutes located at Canadian universities are considered to be in the university sector.

(ii) **Higher education**. This sector is made up of all Canadian universities, including affiliated institutes owned, administered or staffed by universities.

(iii) **Canadian private non profit institutions**. Charitable foundations, voluntary health organizations, scientific and professional societies, and other organizations not established to earn profits comprise this sector. Private non-profit institutions primarily serving or controlled by another sector should be included in that sector (e.g., the Pulp and Paper Research Institute is in Canadian business enterprises).

(iv) **Canadian provincial and municipal governments**. Departments and agencies of these governments form this sector. Government enterprises, such as provincial utilities are included in the Canadian business enterprises sector, and hospitals in the Canadian non-profit institutions or university sector.

(v) **Other Canadian performers**. This sector includes all individuals or organizations not belonging to any of the above sectors. In particular, it includes provincial research councils and foundations.

(vi) **Foreign performers**. All foreign governments, foreign companies (including foreign subsidiaries of Canadian firms), international organizations, non resident foreign nationals and Canadians studying or teaching abroad, are included in this sector.

Type of payment

(i) **Contracts**. These are payments to organizations or individuals outside the federal government for the conduct of S&T by the recipient or to provide support for the federal government's in-house S&T programs.
(ii) **Grants and contributions**. Awards to organizations or individuals for the conduct of S&T and intended to benefit the recipients rather than provide the program with goods, services or information.
(iii) **Research fellowships**. Awards to individuals for advanced research training and experience. Such payments are included as expenditures for R&D activities. Awards intended primarily to support the education of the recipients are reported as education support.

Personnel

Intramural expenditure data should be supported by data on the personnel devoted to scientific activities by all the employees engaged in these activities.

Scientific and professional - people in jobs that require at least one academic degree or nationally recognized professional qualification (e.g., Professional Engineer P.Eng.), as well as those with equivalent experience.

Technical - people in jobs that require specialized vocational or technical training beyond the secondary level (e.g., community colleges and technical institutes) as well as those with experience equivalent to this training.

Other - clerical, secretarial, administrative, operational and other support personnel.

In regard to personnel resources there are two caveats:

(i) where the S&T activities are a part of the program being reported only the auxiliary staff relevant to the S&T activities are reported on a prorated basis;
(ii) whenever financial and administrative support is provided from another program that support is allocated to the S&T resources for the program being reported.

Full-time equivalent (FTE) - a measure of the time actually devoted to the conduct of scientific activities. An employee who is engaged in scientific activities for a half a year has a full-time equivalence of 0.5. Personnel data reported should be consistent with expenditure data.

How to order publications

Statistics Canada catalogued publications may be purchased from local authorized agents, other community bookstores, and Statistics Canada Regional Reference Centre or from:

Statistics Canada
Dissemination division
Circulation management,
120 Parkdale avenue,
Ottawa, Ontario
K1A 0T6

Telephone: 1(613) 951-7277
National (toll free order line): 1-800-700-1033
Fax number: 1(613) 951-1584 or 1-800-889-9734
Toronto: credit card only (416) 973-8018
Internet: inforstats@statcan.ca
Http://www.statcan.ca/english/IPS/Data/88-001-XIB.htm

Catalogue publications

Statistical publication

88-001-XIE	Science Statistics (monthly)
88-202-XIE	Industrial Research and Development, 2002 Intentions (with 2002 preliminary estimates and 2001 actual expenditures)
88-204-XIE	Federal Scientific Activities, 2003-04 (annual)

Volume 28

No. 1	Estimation of research and development expenditures in the higher education sector 2001 – 02
No. 2	Total spending on research and development in Canada 1990 to 2003 preliminary and provinces 1990 to 2001
No. 3	Distribution of federal expenditures on sciences and technology by province and territories 2001 – 02
No. 4	Research and development (R&D) expenditures of Private Non-Profit (PNP) organizations, 2002
No. 5	The provincial research organizations, 2001
No. 6	Scientific and technological (S&T) activities of provincial governments, 1994-95 to 2002-03
No. 7	Biotechnology scientific activities in selected federal government departments and agencies, 2002-2003
No. 8	Estimates of total spending on research and development in the health field in Canada, 1988 to 2003

Volume 27

No. 1	Biotechnology scientific activities in selected federal government departments and agencies
No. 2	Scientific and technological (S&T) activities of provincial governments, 1993-94 to 2001-02
No. 3	Distribution of federal expenditures on science and technology, by province and territories, 2000-01
No. 4	Biotechnology research and development (R&D) in Canadian industry, 2000
No. 5	Industrial research and development 1999 to 2003
No. 6	Estimates of total spending on research and development in the health field in Canada 1988 to 2002
No. 7	Research and development (R&D) personnel in Canada 1991 to 2000
No. 8	Federal government expenditures on scientific activities 2003-04

Working papers – 2004

ST-04-01E	Starting the new century: Technology change in the Canadian private sector, 2000-2002, January 2004
ST-04-02E	Estimation of research and development expenditures in the higher education sector, 2001-2002, January 2004
ST-04-03E	Estimation of Canadian research and development expenditures (GERD), Canada, 1992 to 2003 preliminary, and by province 1992-2001, January 2004
ST-04-04E	The many guises of innovation: what we have learnt and where we are heading, 2003, January 2004
ST-04-05E	Provincial distribution of federal expenditures and personnel on science and technology, 1995-96 to 2001-2002, February 2004
ST-04-06E	Biotechnology use and development survey: methodology, issues and responses, February 2004
ST-04-07E	An historical comparison of technological change, 1998-2000 and 2000-2002, in the private and public sectors, March 2004
ST-04-08E	Technological change in the public sector, 2000-2002, March 2004
ST-04-09E	Regional disparities of research and development in the business services sector, April 2004
ST-04-10E	Innovation firms: A look at small firms, May 2004
ST-04-11E	Scientific and technological activities of provincial governments, 1994-95 to 2002-03, June 2004

Working papers – 2004

ST-04-12E	Federal government payments to industry, 1997-1998 to 2001-2002, July 2004
ST-04-13E	Community innovation: Industrial specialization in Canadian cities, July 2004
ST-04-14E	Estimates of total expenditures on research and development in the health field in Canada, 1998 to 2003, July 2004

Research papers

No. 1	The state of science and technology indicators in the OECD countries, by Benoit Godin, August 1996
No. 2	Knowledge as a capacity for action, by Nico Stehr, June 1996
No. 3	Linking outcomes for workers to changes in workplace practices: An experimental Canadian workplace and employee survey, by Garnett Picot and Ted Wannell, June 1996
No. 4	Are the costs and benefits of health research measurable? by M.B. Wilk, February 1997
No. 5	Technology and economic growth: A survey, by Peter Hanel and Jorge Niosi, April 1998
No. 6	Diffusion of biotechnologies in Canada, by Anthony Arundel, February 1999
No. 7	Barriers to innovation in services industries in Canada, by Pierre Mohnen and Julio Rosa, November 1999
No. 8	Explaining rapid growth in Canadian biotechnology firms, by Jorge Niosi, August 2000
No. 9	Internationally comparable indicators on biotechnology: A stocktaking, a proposal for work and supporting material, by W. Pattinson, B. Van Beuzekom and A. Wyckoff, January 2001
No. 10	Analysis of the survey on innovation, advanced technologies and practices in the construction and related industries, 1999, by George Seaden, Michael Guolla, Jérôme Doutriaux and John Nash, January 2001
No. 11	Capacity to innovate, innovation and impact: The Canadian engineering services industry, by Daood Hamdani, March 2001
No. 12	Patterns of advanced manufacturing technology (AMT) use in Canadian manufacturing:1998 AMT survey results, by Anthony Arundel and Viki Sonntag, November 2001