

e.1

QUEEN
Q
180
.C2
F36
1973/74
-1975/76

~~RECEIVED~~

MINISTRY OF STATE
MINISTÈRE D'ÉTAT
BIBLIOTHÈQUE


FEB 26 1976

LIBRARY
SCIENCE AND TECHNOLOGY
SCIENTIFICS ET TECHNOLOGIE

FEDERAL GOVERNMENT EXPENDITURES
IN THE
NATURAL & HUMAN SCIENCES
1973/74 - 1975/76

report no. 100
rapport n°. 100
1975

S

 CANADA
Ministry of State Ministère d'État
Science and Technology Sciences et Technologie
Research and Information Services Services de recherche et d'information



Canada

Ministry of State

Ministère d'État

Science and Technology

Sciences et Technologie

Research and Information Services

Services de recherche et d'information

Q
180 - eif
C2F36
1973/74 -
1975/76

FEDERAL GOVERNMENT EXPENDITURES
IN THE
NATURAL & HUMAN SCIENCES
1973/74 - 1975/76

report no.
rapport n°. 100

1975

31638



prepared for / préparé pour INTERNAL USE

by / par

[Signature]

R. Guttormson

approved by / approuvé par

[Signature]

Contributors:



G. O'Brien M. Francis
A. Smith
M. Heatley

CONTENTS

PAGE

INTRODUCTION.....	5
ABBREVIATIONS.....	6
INDEX BY TYPE OF ACTIVITY.....	7
INDEX BY VARIABLE.....	8

PART ONE NATURAL AND HUMAN SCIENCES..... 11

1.1 TOTAL SCIENTIFIC ACTIVITY EXPENDITURES

1. Natural and Human Sciences, 1973-76.....	12
2. by Department or Agency, Natural and Human Sciences, 1973-76.....	13
3. by Activity, 1973-76.....	14
4. by Performer, 1973-76.....	15
5. by Performer, by Activity, 1973-76.....	16
6. by Department or Agency, by Activity, 1973-76.....	17
7. by Department or Agency, Intramural and Extramural Expenditures, 1973-76.....	18
8. by Performer, by Funding Department or Agency, 1973-76.....	19

1.2 RESEARCH AND DEVELOPMENT EXPENDITURES

9. by Performer, 1973-76.....	20
10. by Type of Funding, 1973-76.....	21
11. by Department or Agency, Intramural and Extramural Expenditures, 1973-76.....	22
12. by Performer, by Funding Department or Agency, 1973-76.....	23
13. Support of Research and Development in Canadian Universities and Non-profit Institutions by Department or Agency, 1973-76.....	24
14. Support of Research and Development in Canadian Industry by Department or Agency, 1973-76.....	24

1.3 RELATED SCIENTIFIC ACTIVITY EXPENDITURES

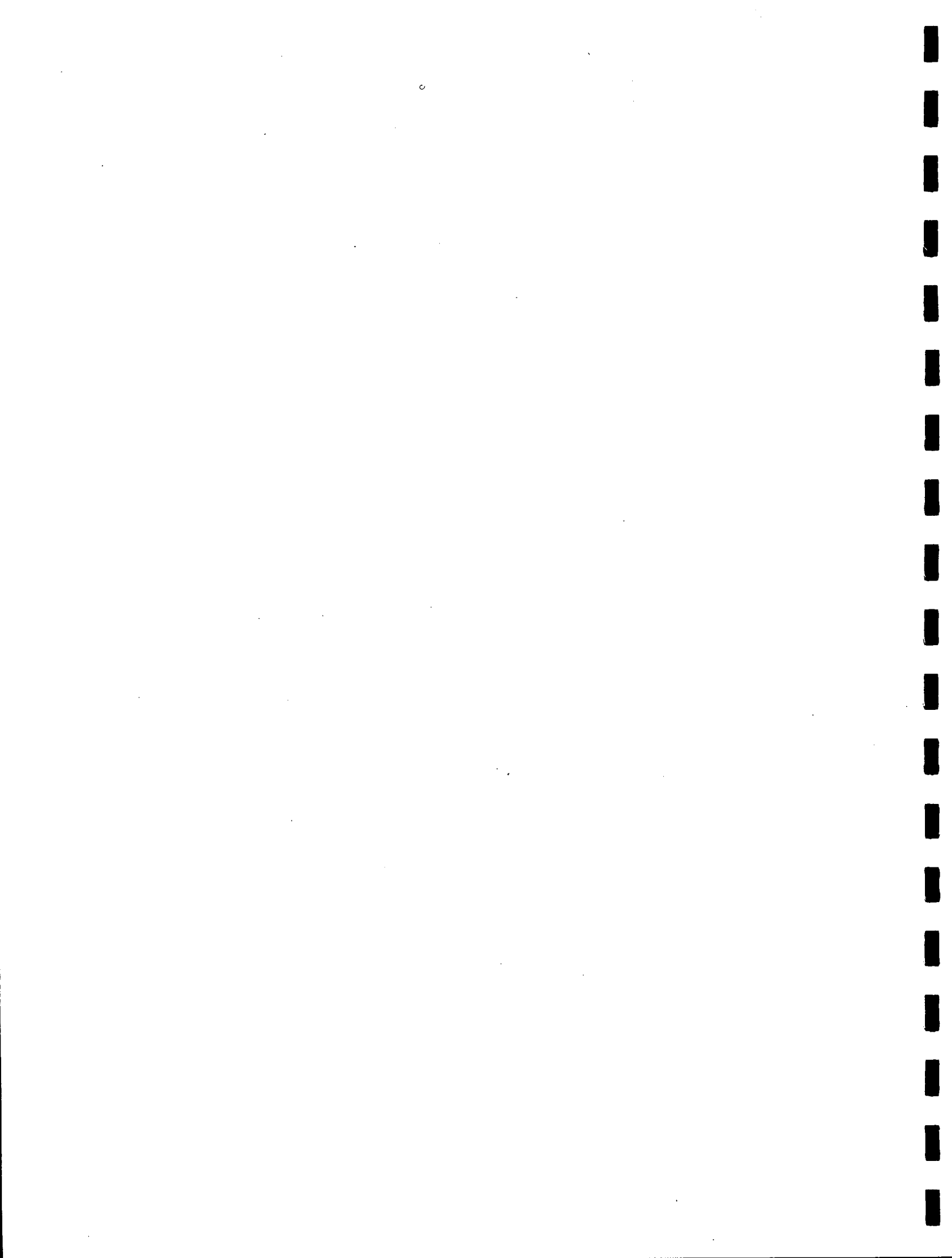
15. by Performer, 1973-76.....	25
16. by Department or Agency, Intramural and Extramural, Expenditures, 1973-76	25

PART TWO NATURAL SCIENCES..... 27

2.1 TOTAL SCIENTIFIC ACTIVITY EXPENDITURES

17. by Performer, 1973-76.....	28
18. by Performer, by Activity, 1973-76.....	29
19. by Department or Agency, by Activity, 1973-76.....	30
20. by Department or Agency, Intramural and Extramural Expenditures, 1973-76.....	31
21. by Performer, by Funding Department or Agency, 1973-76.....	32

2.2 RESEARCH AND DEVELOPMENT EXPENDITURES	
22. by Performer, 1973-76.....	33
23. by Type of Funding, 1973-76.....	33
24. by Department or Agency, Intramural and Extramural Expenditures, 1973-76.....	34
25. by Performer, by Funding Department or Agency, 1973-76.....	35
26. Support of Research and Development in Canadian Universities and Non-profit Institutions by Department or Agency, 1973-76.....	36
27. Support of Research and Development in Canadian Industry by Department or Agency, 1973-76.....	36
2.3 RELATED SCIENTIFIC ACTIVITY EXPENDITURES	
28. by Performer, 1973-76.....	37
29. by Activity, 1973-76.....	38
30. by Department or Agency, Intramural and Extramural Expenditures, 1973-76.....	39
31. Current Expenditures, by Activity, by Department or Agency, 1973-76.	40
PART THREE HUMAN SCIENCES.....	41
3.1 TOTAL SCIENTIFIC ACTIVITY EXPENDITURES	
32. by Performer, 1973-76.....	42
33. by Performer, by Activity, 1973-76.....	43
34. by Department or Agency, by Activity, 1973-76.....	44
35. by Department or Agency, Intramural and Extramural Expenditures, 1973-76.....	45
36. by Performer, by Funding Department or Agency, 1973-76.....	46
3.2 RESEARCH AND DEVELOPMENT EXPENDITURES	
37. by Performer, 1973-76.....	47
38. by Type of Funding, 1973-76.....	48
39. by Department or Agency, Intramural and Extramural Expenditures, 1973-76.....	49
40. by Performer, by Funding Department or Agency, 1973-76.....	50
41. Support of Research and Development in Canadian Universities and Non-profit Institutions by Department or Agency, 1973-76.....	51
42. Support of Research and Development in Canadian Industry by Department or Agency, 1973-76.....	51
3.3 RELATED SCIENTIFIC ACTIVITY EXPENDITURES	
43. by Performer, 1973-76.....	52
44. by Activity, 1973-76.....	53
45. by Department or Agency, Intramural and Extramural Expenditures, 1973-76.....	54
46. Current Expenditures, by Activity, by Department or Agency, 1973-76.	55
APPENDIX Technical Notes.....	57



INTRODUCTION

This document presents several tables displaying Federal Government expenditures in the natural and human sciences. As it is designed primarily for those with a knowledge of the nature of the government's scientific activities, a minimum of descriptive material is presented.

There are three main sections and an appendix. The sections present, in turn, data on the natural and human sciences combined, on the natural sciences, and on the human sciences. The appendix contains definitions of terms and limitations of the surveys. Readers are urged to examine this appendix before attempting to draw conclusions from the data.

In addition to the table of contents, two indices are provided to aid the user in locating the desired tables. The first groups the tables into those presenting data relating to three activity areas: Total Scientific Activities, Research and Experimental Development, and Related Scientific Activities, and for each lists the variables displayed. The second index lists the variables in turn, and for each of these, the variables against which they are tabulated. Thus, users interested in an activity area such as Research and Development or in a variable such as performers will be able to locate all relevant tables quickly.

Textual material accompanies some of the tables. This material was originally prepared for another purpose and has been included here when available. No text has been prepared specially for this publication.

The data in this report is taken from the 1975 Statistics Canada Surveys of Federal Science Expenditures in the Natural Sciences and in the Human Sciences. It updates the data presented in MOSST "Green Book", *Federal Scientific Resources*, No. 4. Note that data presented here were collected before the June budget and do not reflect the budget cuts made at that time.

Additional special tabulations or expansions of these tabulations to display more departments are available on request.

ABBREVIATIONS

AECB	Atomic Energy Control Board	IDRC	International Development Research Centre
AECL	Atomic Energy of Canada Limited	INA	Department of Indian and Northern Affairs
Agr	Department of Agriculture	ITC	Department of Industry, Trade, and Commerce
BofC	Bank of Canada	Jus	Department of Justice
CAL	Canadian Arsenals Ltd.	Lab	Department of Labour
CBC	Canadian Broadcasting Corporation	M&I	Department of Manpower and Immigration
CC	Canada Council	MOT	Ministry of Transport
CCA	Consumer and Corporate Affairs	MRC	Medical Research Council
CDC	Canadian Dairy Commission	MSST	Ministry of State for Science and Technology
CIDA	Canadian International Development Corp.	MUA	Ministry of State for Urban Affairs
CLFB	Canadian Livestock Feed Board	NCC	National Capital Commission
CMHC	Central Mortgage and Housing Corporation	NFB	National Film Board
COL	Commission of Official Languages	NHB	National Harbours Board
CPDC	Canada Patent Development Corporation	NHW	Department of National Health and Welfare
CRTC	Canadian Radio Television Commission	NL	National Library
CTC	Canadian Transport Commission	NM	National Museum
DND	Department of National Defence	NR	Department of National Revenue
DOC	Department of Communications	NRC	National Research Council
DOE	Department of Environment	PA	Public Archives
DPW	Department of Public Works	PCO	Privy Council Office
DREE	Department of Regional Economic Expansion	PO	Post Office Department
DSS	Department of Supply and Services	PSC	Public Service Commission
DVA	Department of Veterans Affairs	SC	Statistics Canada
EA	Department of External Affairs	ScC	Science Council
ECC	Economic Council of Canada	SG	Solicitor General
EMR	Department of Energy, Mines, and Resources	SLSA	St. Lawrence Seaway Authority
Fin	Department of Finance	Sofs	Secretary of State Department
FPRB	Food Prices Review Board	TBS	Treasury Board Secretariat
IC	Information Canada	UIC	Unemployment Insurance Commission

SYMBOLS

- nil or zero
- amount too small to be expressed

NOTES

1. Totals in this report may not add due to rounding. Percentages were calculated using unrounded figures.
2. Expenditure data cover the federal government fiscal year beginning April 1 of one year and ending March 31 of the following year.
3. The source of all data in this report is Statistics Canada unless otherwise indicated.

INDEX BY TYPE OF ACTIVITY

Federal Expenditures on...	<u>Natural and Human Sciences</u>		<u>Natural Sciences</u>		<u>Human Sciences</u>	
	Table	Page	Table	Page	Table	Page

Scientific Activities, Tabulated by.....

Natural and Human Science.....	1	12	-	-	-	-
Natural and Human Science by..... Department	2	13	-	-	-	-
R&D and RSA.....	3	14	-	-	-	-
Performer.....	4	15	17	28	32	42
Performer by R&D and RSA.....	5	16	18	29	33	43
Department by R&D and RSA.....	6	17	19	30	34	44
Intramural and Extramural by..... Department	7	18	20	31	35	45
Performer by Funding Department....	8	19	21	32	36	46

Research and Development, Tabulated by.....

Performer.....	9	20	22	33	37	47
Type of Funding.....	10	21	23	33	38	48
Intramural and Extramural by..... Department	11	22	24	34	39	49
Performer by Funding Department....	12	23	25	35	40	50
in Universities and Non-Profit..... Institutes by Type of Funding by Department	13	24	26	36	41	51
in Industry by Type of Funding.... by Department	14	24	27	36	42	51

Related Scientific Activities, Tabulated by.

Performer.....	15	25	28	37	43	52
Activity.....	-	-	29	38	44	53
Intramural and Extramural by..... Department	6	25	30	39	45	54
Activity by Department	-	-	31	40	46	55

INDEX BY VARIABLE

Federal Expenditures on Science tabulated by...	Type of Activity ¹	Natural and Human Sciences		Natural Sciences		Human Sciences	
		Table	Page	Table	Page	Table	Page
Natural and Human Sciences							
Totals.....	SA	1	12	-	-	-	-
by Department.....	SA	2	13	-	-	-	-
Intramural and Extramural							
by Department.....	SA	7	18	20	31	35	45
	R&D	11	22	24	34	39	49
	RSA	16	25	30	39	45	54
Performer							
Totals.....	SA	4	15	17	28	32	42
	R&D	9	20	22	33	37	47
	RSA	15	25	28	37	43	52
by R&D and RSA.....	SA	5	16	18	29	33	43
by Department.....	SA	8	19	21	32	36	46
	R&D	12	23	25	35	40	50
in Universities and Non-profit Institutes by Type of Funding by Department	R&D	13	24	26	36	41	51
in Industry by Types of Funding by Department	R&D	14	24	27	36	42	51
Type of Funding							
Totals.....	R&D	10	21	23	33	38	48
in Universities and Non-profit Institutes by Department	R&D	13	24	26	36	41	51
in Industry by Department	R&D	14	24	27	36	42	51
Activity							
Totals.....	SA	3	14	-	-	-	-
	RSA	-	-	29	38	44	53
by Performer.....	SA	5	16	18	29	33	43
by Department.....	SA	6	17	19	30	34	44
	RSA	-	-	31	40	46	55

¹ SA - Scientific Activities = R&D + RSA
R&D - Research and Experimental Development
RSA - Related Scientific Activities

INDEX BY VARIABLE

Federal Expenditures on Science tabulated by...	Type of Activity ¹	Natural and Human Sciences		Natural Sciences		Human Sciences	
		Table	Page	Table	Page	Table	Page
Department							
by Natural Science &..... Human Science	SA	2	13	-		-	
by R&D and RSA.....	SA	6	17	19	30	34	44
by Intramural and Extramural.....	SA	7	18	20	31	35	45
	R&D	11	22	24	34	39	49
	RSA	16	25	30	39	45	54
by Performer.....	SA	8	19	21	32	36	46
	R&D	12	23	25	35	40	50
by Activity.....	RSA	-		31	40	46	55
in Universities and Non-profit Institutes by Type of Funding	R&D	13	24	26	36	41	51
in Industry by Type of Funding	R&D	14	24	27	36	42	51

¹ SA - Scientific Activities = R&D + RSA
R&D - Research and Experimental Development
RSA - Related Scientific Activities



1

Natural and Human Sciences

1.1 Total Scientific Activity Expenditures

TABLE 1

NATURAL AND HUMAN SCIENCES

FEDERAL EXPENDITURES ON SCIENTIFIC ACTIVITIES

NATURAL AND HUMAN SCIENCES, 1973-76

(\$ MILLIONS)

	1973-74		1974-75		1975-76		AVERAGE ANNUAL CHANGE
	\$	%	\$	%	\$	%	
NATURAL SCIENCES	953.0	(79.9)	1,061.9	(77.6)	1,174.1	(76.8)	11.0 %
HUMAN SCIENCES	239.7	(20.1)	306.7	(22.4)	354.0	(23.2)	21.5 %
TOTAL	1,192.8	(100.0)	1,368.6	(100.0)	1,528.1	(100.0)	13.2 %

The percentage of funds allocated to human science activities is rising slightly each year: from 20.1% of the total federal budget for science in 1974, to 22.4% in 1975 and 23.2% in 1976; funds set aside for natural sciences are expected to decline by 0.8% in 1976.

Average annual growth of expenditure for the three years being considered is estimated at 11.0% for the natural sciences and 21.5% for the human sciences.

Total federal expenditures on the natural and human sciences are expected to reach \$1,528.1 million in 1976, an increase of \$159.4 million or 11.6% over the previous year.

Natural science expenditures are estimated at \$1,174.1 million, a rise of \$112.2 million over 1975.

Human science expenditures are estimated at \$354.0 million, or \$47.3 million more than in 1975.

TABLE 2

NATURAL AND HUMAN SCIENCES

FEDERAL EXPENDITURES ON SCIENTIFIC ACTIVITIES

BY DEPARTMENT OR AGENCY, NATURAL AND HUMAN SCIENCES, 1973-76

(\$ MILLIONS)

DEPARTMENT OR AGENCY	1973-74			1974-75			1975-76		
	NATURAL	HUMAN	TOTAL	NATURAL	HUMAN	TOTAL	NATURAL	HUMAN	TOTAL
DOE	195.6	6.1	201.8	231.4	6.9	238.3	252.4	7.1	259.6
NRC	154.1	---	154.1	163.1	---	163.1	190.8	---	190.8
ITC	107.0	1.9	108.9	114.3	2.0	116.3	113.8	2.4	116.2
SC	---	76.5	76.5	---	96.7	96.7	---	112.8	112.8
Agr	79.0	1.6	80.6	89.4	1.7	91.1	110.0	1.8	111.8
AECL	93.5	---	93.5	102.3	---	102.3	101.3	---	101.3
ENR	76.8	1.9	78.7	81.0	2.2	83.2	88.4	2.3	90.7
DND	74.3	1.2	75.5	83.4	2.0	85.4	88.6	2.1	90.7
NHW	27.9	13.4	41.3	31.4	22.2	53.5	32.2	24.2	56.4
MRC	41.2	---	41.2	43.8	---	43.8	49.5	---	49.5
DOC	33.5	1.1	34.5	34.6	1.3	35.9	36.9	1.8	38.7
CIDA	18.9	6.9	25.8	26.4	8.4	34.8	28.2	10.3	38.5
IDEC	7.2	9.3	16.5	10.8	15.6	26.4	12.0	18.0	30.0
CC	---	22.9	22.9	---	25.2	25.2	---	28.8	28.8
MOT	14.9	3.0	17.9	12.6	3.9	16.5	19.4	6.8	26.2
NM	5.6	4.6	10.2	6.3	5.5	11.8	9.0	6.2	15.2
CCA	7.8	1.8	9.6	8.6	2.1	10.7	9.9	2.6	12.5
INA	2.6	5.5	8.1	2.6	6.7	9.4	2.6	8.1	10.7
NL	---	7.6	7.6	---	8.6	8.6	---	10.5	10.5
DSS	---	---	---	2.9	0.2	3.1	9.8	0.7	10.5
M&I	---	8.4	8.4	---	9.5	9.5	---	10.3	10.3
CMAC	0.3	2.0	2.3	0.9	3.8	4.7	2.5	7.6	10.1
AECEB	7.3	---	7.3	10.4	---	10.4	9.1	---	9.1
MUA	---	5.3	5.3	---	7.3	7.3	---	8.8	8.8
TES	---	7.4	7.4	---	7.1	7.1	---	7.1	7.1
PA	---	4.1	4.1	---	5.3	5.3	---	6.1	6.1
FSC	---	5.0	5.0	---	7.7	7.7	---	6.1	6.1
PCO	---	1.1	1.1	---	6.2	6.2	---	6.0	6.0
Fin	---	5.0	5.0	---	5.0	5.0	---	5.7	5.7
SofS	---	3.7	3.7	---	4.6	4.6	---	5.4	5.4
ECC	---	3.9	3.9	---	4.3	4.3	---	4.4	4.4
Jus	---	3.4	3.4	---	3.9	3.9	---	4.3	4.3
BoTC	---	2.7	2.7	---	3.3	3.3	---	3.9	3.9
EA	---	3.2	3.2	---	3.2	3.2	---	3.9	3.9
MSST	---	2.4	2.4	0.1	3.3	3.4	---	3.7	3.7
Lab	---	2.9	2.9	---	3.0	3.0	---	3.4	3.4
CTC	---	2.4	2.4	---	2.9	2.9	---	3.1	3.1
DREE	1.5	0.7	2.2	1.6	0.5	2.1	2.6	0.5	3.1
UIC	---	1.7	1.7	---	2.6	2.6	---	2.7	2.7
COL	---	1.5	1.5	---	1.9	1.9	---	2.3	2.3
Sec	---	1.3	1.3	---	1.8	1.8	---	2.2	2.2
DFW	1.6	---	1.6	1.8	---	1.8	2.2	---	2.2
FPRB	---	0.9	0.9	---	2.0	2.0	---	2.0	2.0
CBC	0.2	1.4	1.6	0.2	1.5	1.7	0.2	1.7	1.9
NR	---	1.1	1.1	---	1.5	1.5	---	1.6	1.6
SG	---	0.4	0.4	---	0.7	0.7	---	1.5	1.5
CPDC	0.9	---	0.9	1.1	---	1.1	1.3	---	1.3
NFB	0.4	0.1	0.6	0.5	0.2	0.8	0.8	0.3	1.1
CRTC	---	0.6	0.6	---	0.9	0.9	---	1.0	1.0
NCC	---	0.7	0.7	---	0.8	0.8	---	0.9	0.9
D/A	0.3	0.1	0.4	0.4	0.1	0.4	0.3	0.1	0.5
PO	---	0.2	0.2	---	0.3	0.3	---	0.4	0.4
NHB	---	0.2	0.2	---	0.2	0.2	---	0.2	0.2
IC	---	0.3	0.3	---	0.3	0.3	---	0.2	0.2
CAL	0.2	---	0.2	0.1	---	0.1	0.1	---	0.1
CLFB	---	---	---	---	0.1	0.1	---	0.1	0.1
CDC	---	0.1	0.1	---	0.1	0.1	---	0.1	0.1
SLSA	0.3	---	0.3	---	---	---	---	---	---
TOTAL	953.0	239.7	1,192.8	1,061.9	306.7	1,368.6	1,174.1	354.0	1,528.1

In 1976, 70% of the total science budget will be directed to eight departments and agencies, which will spend \$1,073.9 million out of \$1,528.1 million.

The same eight major departments and agencies will spend 80.5% of the budget for natural sciences and 36.2% of the budget for human sciences.

The major performer in the natural sciences will be the Department of the Environment with 21.4% of the budget, while the major performer in the human sciences will be Statistics Canada with 31.9% of the budget.

TABLE 3

NATURAL AND HUMAN SCIENCES

FEDERAL EXPENDITURES ON SCIENTIFIC ACTIVITIES
BY ACTIVITY, 1973-76

(\$ MILLIONS)

ACTIVITY	1973-74		1974-75		1975-76		AVERAGE ANNUAL CHANGE
	\$	%	\$	%	\$	%	
RESEARCH & DEVELOPMENT	794.7	(66.6)	891.9	(65.2)	997.6	(65.3)	12.0 %
RELATED SCIENTIFIC ACTIV.	398.0	(33.4)	476.7	(34.8)	530.6	(34.7)	15.5 %
TOTAL	1,192.8	(100.0)	1,368.6	(100.0)	1,528.1	(100.0)	13.2 %

The percentage of funds allocated to R & D is expected to represent 65.3% of the total, with related scientific activities accounting for the remainder or 34.7%.

Average annual growth of expenditure between 1974 and 1976 is estimated at 12.0% for R & D and 15.4% for related scientific activities.

Total federal expenditures on scientific activities are expected to reach \$1,528.1 million in 1976, an increase of \$159.5 million or 11.9% over the previous year.

Research and development activities will account for \$997.6 million, at 11.8% rise over 1975.

Related scientific activities, including data collection, information, testing and standardization, feasibility studies and scholarship programs, will grow by 11.3% to \$530.6 million.

TABLE 4

NATURAL AND HUMAN SCIENCES

FEDERAL EXPENDITURES ON SCIENTIFIC ACTIVITIES
BY PERFORMER, 1973-76

(\$ MILLIONS)

PERFORMER	1973-74		1974-75		1975-76	
	\$	%	\$	%	\$	%
INTRAMURAL	773.9	(64.9)	889.8	(65.0)	1,000.3	(65.5)
UNIVERSITIES & NON-PROFIT INSTITUTIONS	181.2	(15.2)	202.2	(14.8)	228.3	(14.9)
INDUSTRY	185.5	(15.5)	198.0	(14.5)	211.8	(13.9)
FOREIGN	39.4	(3.3)	58.9	(4.3)	67.5	(4.4)
OTHER CANADIAN	12.8	(1.1)	19.7	(1.4)	20.3	(1.3)
TOTAL	1,192.8	(100.0)	1,368.6	(100.0)	1,528.1	(100.0)

Intramural expenditures, that is, expenditures on scientific activities carried out within federal establishments, are expected to reach \$1,000.3 million in 1976, an increase of \$110.5 million or 12.4% over 1975.

Extramural expenditures, that is, expenditures on scientific activities carried out in other sectors, as listed below, are expected to reach \$527.9 million in 1976, an increase of \$49.1 million or 10.2% over 1975.

Support of Canadian universities and non-profit institutions is expected to reach \$228.3 million or 14.9% of the total, an increase of 13% over 1975.

Industry will receive 13.9% of the total or \$211.8 million, an increase of 6.9%.

Foreign performers will be allotted \$67.5 million or 4.4%, an increase of 14.6% over the previous year.

Other Canadian performers, including provincial departments, provincial and municipal organizations, provincial foundations and research councils, and private individuals, expect to receive \$20.3 million or 1.3% of the total, an increase of 3% over 1975.

TABLE 5

NATURAL AND HUMAN SCIENCES

FEDERAL EXPENDITURES ON SCIENTIFIC ACTIVITIES
BY PERFORMER, BY ACTIVITY, 1973-76

(\$ MILLIONS)

PERFORMER	1973-74			1974-75			1975-76		
	R&D	RSA	TOTAL	R&D	RSA	TOTAL	R&D	RSA	TOTAL
INTRAMURAL	439.1	334.8	773.9	491.4	398.4	889.8	557.9	442.4	1,000.3
UNIVERSITIES & NON-PROFIT INS	150.2	31.1	181.2	166.5	35.7	202.2	188.3	39.9	228.3
INDUSTRY	176.3	9.1	185.5	186.6	11.4	198.0	197.6	14.2	211.8
FOREIGN	20.6	18.9	39.4	31.9	27.0	58.9	37.9	29.7	67.5
OTHER CANADIAN	8.5	4.2	12.8	15.5	4.2	19.7	15.9	4.4	20.3
TOTAL	794.7	398.0	1,192.8	891.9	476.7	1,368.6	997.6	530.6	1,528.1

TABLE 6

NATURAL AND HUMAN SCIENCES

FEDERAL EXPENDITURES ON SCIENTIFIC ACTIVITIES
 BY DEPARTMENT OR AGENCY, BY ACTIVITY, 1973-76
 (\$ MILLIONS)

DEPARTMENT OR AGENCY	1973-74			1974-75			1975-76		
	R&D	RSA	TOTAL	R&D	RSA	TOTAL	R&D	RSA	TOTAL
DOE	91.9	109.9	201.8	106.6	131.7	238.3	119.5	140.1	259.6
NRC	125.3	28.8	154.1	136.0	27.1	163.1	161.5	29.3	190.8
ITC	107.4	1.5	108.9	114.7	1.6	116.3	114.3	1.9	116.2
SC	2.0	74.5	76.5	2.4	94.3	96.7	3.0	109.8	112.8
Agr	77.2	3.4	80.6	87.5	3.6	91.1	107.8	4.0	111.8
AECL	89.4	4.0	93.5	96.8	5.5	102.3	96.4	4.9	101.3
EMR	41.7	37.0	78.7	41.6	41.6	83.2	46.1	44.7	90.7
DND	58.7	16.9	75.5	66.4	19.1	85.4	69.7	21.0	90.7
NHW	30.3	10.5	41.3	38.4	15.2	53.5	39.0	17.4	56.4
MRC	39.6	1.6	41.2	42.3	1.5	43.8	47.9	1.6	49.5
DOC	33.2	1.3	34.5	34.3	1.6	35.8	36.7	1.9	38.7
CIDA	9.4	16.4	25.8	11.9	23.0	34.8	13.9	24.6	38.5
IDRC	8.9	7.6	16.5	14.1	12.3	26.4	15.9	14.0	30.0
CC	9.5	13.4	22.9	10.9	14.3	25.2	13.4	15.4	28.8
MOT	15.5	2.4	17.9	13.8	2.7	16.5	23.3	3.0	26.2
NM	6.2	4.0	10.2	7.6	4.2	11.8	9.6	5.6	15.2
CCA	1.6	8.0	9.6	1.9	8.8	10.7	2.4	10.2	12.5
INA	5.8	2.3	8.1	6.9	2.5	9.4	7.8	2.9	10.7
NL	---	7.6	7.6	---	8.6	8.6	---	10.5	10.5
DSS	---	---	---	2.4	0.7	3.1	8.2	2.4	10.5
Other	40.5	47.1	87.6	55.5	57.1	112.6	61.2	65.4	126.7
TOTAL	794.7	398.0	1,192.8	891.9	476.7	1,368.6	997.6	530.6	1,528.1

Five departments and agencies will account for 64.3% of extramural expenditures.

Five departments and agencies will spend close to or over \$100 million on research and development in the natural and human sciences: the National Research Council (161.5 million), the Department of the Environment (\$119.5 million), the Department of Industry, Trade and Commerce (\$114.3 million), the Department of Agriculture (\$107.8 million) and Atomic Energy of Canada Limited (\$96.4 million). Together, they will spend 60.1% of the R & D budget.

Over \$100 million will be spent on related scientific activities in the natural and human sciences by the Department of the Environment (\$140.1 million) and Statistics Canada (\$109.8 million). Together, they account for 47.1% of federal spending on related scientific activities.

TABLE 7

NATURAL AND HUMAN SCIENCES

FEDERAL INTRAMURAL AND EXTRAMURAL EXPENDITURES ON SCIENTIFIC ACTIVITIES

BY DEPARTMENT OR AGENCY, 1973-76

(\$ MILLIONS)

DEPARTMENT OR AGENCY	1973-74			1974-75			1975-76		
	INTRA- MURAL	EXTRA- MURAL	TOTAL	INTRA- MURAL	EXTRA- MURAL	TOTAL	INTRA- MURAL	EXTRA- MURAL	TOTAL
DOE	189.2	12.6	201.8	221.4	16.8	238.3	241.8	17.8	259.6
NRC	71.9	82.2	154.1	74.5	88.6	163.1	82.5	108.3	190.8
ITC	3.9	105.0	108.9	4.7	111.6	116.3	4.3	112.0	116.2
SC	76.5	---	76.5	96.7	---	96.7	112.8	---	112.8
Agr	79.6	1.0	80.6	89.7	1.3	91.1	109.5	2.3	111.8
AECL	70.7	22.8	93.5	79.9	22.4	102.3	85.5	15.8	101.3
EMR	69.8	8.9	78.7	75.6	7.7	83.2	82.1	8.7	90.7
DHD	60.5	15.0	75.5	68.8	16.6	85.4	74.5	16.1	90.7
NHW	15.8	25.5	41.3	20.8	32.8	53.5	23.1	33.3	56.4
MRC	0.9	40.4	41.2	1.0	42.9	43.8	1.1	48.4	49.5
DOC	17.9	16.6	34.5	20.2	15.7	35.8	24.0	14.7	38.7
CIDA	0.9	24.9	25.8	1.0	33.8	34.8	1.0	37.5	38.5
IDRC	6.1	10.5	16.5	9.6	16.7	26.4	10.9	19.0	30.0
CC	1.4	21.4	22.9	1.7	23.5	25.2	2.1	26.7	28.8
MOT	10.7	7.2	17.9	7.3	9.2	16.5	13.1	13.1	26.2
NM	10.2	---	10.2	11.8	---	11.8	15.2	---	15.2
CCA	9.3	0.2	9.6	10.5	0.2	10.7	12.2	0.3	12.5
INA	6.2	1.9	8.1	7.1	2.2	9.4	7.9	2.8	10.7
NL	7.6	---	7.6	8.6	---	8.6	10.5	---	10.5
DSS	---	---	---	0.1	3.0	3.1	0.5	10.0	10.5
Other	64.8	22.8	87.6	78.8	33.7	112.6	85.7	41.0	126.7
TOTAL	773.9	418.9	1,192.8	889.8	478.8	1,368.6	1,000.3	527.9	1,528.1

Intramural expenditures on all scientific activities, as noted earlier, are expected to reach \$1,000.3 million.

Extramural expenditures should reach \$527.9 million.

Almost one quarter (24.2%) of the intramural budget or \$241.8 million will be allocated to the Department of the Environment.

More than ten per cent of the intramural budget will be spent by Statistics Canada (\$112.8 million) and by the Department of Agriculture (\$109.5 million).

The three departments and agencies mentioned above will account for 46.4% of intramural expenditures.

Extramural expenditures make the Department of Industry, Trade and Commerce the largest spender in this area, with \$112.0 million or 21.2% of the total.

More than 20 per cent of the extramural budget will be spent by the National Research Council (\$108.3 million).

TABLE 8

NATURAL AND HUMAN SCIENCES

FEDERAL EXPENDITURES ON SCIENTIFIC ACTIVITIES

BY PERFORMER, BY FUNDING DEPARTMENT OR AGENCY, 1973-76

(\$ MILLIONS)

PERFORMER	DEPT. OR AGENCY	1973-74		1974-75		1975-76	
		\$	%	\$	%	\$	%
INTRAMURAL *****	DOE	189.2	(24.4)	221.4	(24.9)	241.8	(24.2)
	SC	76.5	(9.9)	96.7	(10.9)	112.8	(11.3)
	Agri	79.6	(10.3)	89.7	(10.1)	109.5	(10.9)
	AECL	70.7	(9.1)	79.9	(9.0)	85.5	(8.5)
	NRC	71.9	(9.3)	74.5	(8.4)	82.5	(8.2)
	EMR	69.8	(9.0)	75.6	(8.5)	82.1	(8.2)
	DND	60.5	(7.8)	68.8	(7.7)	74.5	(7.5)
	DOE	17.9	(2.3)	20.2	(2.3)	24.0	(2.4)
	Other	137.7	(17.8)	162.9	(18.3)	187.6	(18.8)
	TOTAL	773.9	(100.0)	889.8	(100.0)	1,000.3	(100.0)
EXTRAMURAL ***** UNIVERSITIES & NON-PROFIT INSTITUTIONS	NRC	67.0	(37.0)	67.4	(33.3)	79.6	(34.9)
	MRC	38.3	(21.1)	40.5	(20.0)	45.6	(20.0)
	NHW	24.1	(13.3)	27.5	(13.6)	27.2	(11.9)
	CC	17.9	(9.9)	19.9	(9.9)	23.0	(10.1)
	AECB	7.2	(4.0)	10.4	(5.1)	9.1	(4.0)
	CIDA	4.9	(2.7)	5.4	(2.7)	5.5	(2.4)
	CMHC	1.0	(0.6)	2.6	(1.3)	5.2	(2.3)
	DOE	4.0	(2.2)	4.9	(2.4)	5.1	(2.2)
	Other	16.8	(9.2)	23.6	(11.7)	28.0	(12.3)
	TOTAL	181.2	(100.0)	202.2	(100.0)	228.3	(100.0)
INDUSTRY	ITC	101.4	(54.7)	107.9	(54.5)	108.0	(51.0)
	NRC	13.4	(7.2)	16.5	(8.3)	20.6	(9.7)
	AECL	21.7	(11.7)	21.2	(10.7)	14.8	(7.0)
	DOC	15.0	(8.1)	13.2	(6.7)	13.2	(6.2)
	DND	11.0	(6.0)	11.7	(5.9)	11.4	(5.4)
	DOE	5.6	(3.0)	6.6	(3.3)	10.1	(4.8)
	MOT	5.3	(2.9)	6.6	(3.4)	9.5	(4.5)
	DSS	---	(---)	2.4	(1.2)	8.1	(3.8)
	Other	12.0	(6.5)	12.0	(6.1)	16.1	(7.6)
	TOTAL	185.5	(100.0)	198.0	(100.0)	211.8	(100.0)
FOREIGN	CIDA	20.0	(50.8)	28.4	(48.3)	32.0	(47.3)
	IDRC	10.3	(26.0)	16.5	(27.9)	18.7	(27.7)
	NRC	1.2	(3.0)	4.1	(7.0)	7.4	(11.0)
	CC	3.6	(9.0)	3.5	(6.0)	3.7	(5.5)
	MRC	2.1	(5.3)	2.3	(4.0)	2.7	(4.0)
	DND	0.6	(1.4)	1.3	(2.2)	1.5	(2.2)
	Other	1.7	(4.4)	2.7	(4.6)	1.5	(2.2)
	TOTAL	39.4	(100.0)	58.9	(100.0)	67.5	(100.0)
OTHER CANADIAN	NHW	1.1	(8.4)	4.7	(23.7)	5.2	(25.5)
	DREE	2.2	(17.0)	2.0	(10.3)	3.0	(14.8)
	DOE	2.9	(22.4)	5.2	(26.6)	2.4	(11.9)
	ITC	1.7	(13.0)	1.6	(8.0)	1.8	(8.8)
	CMHC	0.4	(2.9)	0.6	(2.9)	1.4	(7.1)
	EMR	0.8	(6.6)	1.1	(5.8)	1.1	(5.3)
	MOT	0.6	(4.7)	0.5	(2.5)	1.0	(4.8)
	NRC	0.6	(4.6)	0.7	(3.3)	0.7	(3.4)
	Other	2.6	(20.5)	3.3	(16.8)	3.7	(18.4)
	TOTAL	12.8	(100.0)	19.7	(100.0)	20.3	(100.0)

1.2 Research and Development Expenditures

TABLE 9

NATURAL AND HUMAN SCIENCES

FEDERAL EXPENDITURES ON RESEARCH AND DEVELOPEMENT BY PERFORMER, 1973-76

(\$ MILLIONS)

PERFORMER	1973-74		1974-75		1975-76	
	\$	%	\$	%	\$	%
INTRAMURAL	439.1	(55.2)	491.4	(55.1)	557.9	(55.9)
INDUSTRY	178.3	(22.2)	196.6	(20.9)	197.6	(19.8)
UNIVERSITIES & NON-PROFIT INSTITUTIONS	150.2	(18.9)	166.5	(18.7)	188.3	(18.9)
FOREIGN	20.6	(2.6)	31.9	(3.6)	37.9	(3.8)
OTHER CANADIAN	8.5	(1.1)	15.5	(1.7)	15.9	(1.6)
TOTAL	794.7	(100.0)	891.9	(100.0)	997.6	(100.0)

TABLE 10

NATURAL AND HUMAN SCIENCES

FEDERAL EXPENDITURES ON RESEARCH AND DEVELOPEMENT
BY TYPE OF FUNDING, 1973-76

(\$ MILLIONS)

TYPE OF FUNDING	1973-74		1974-75		1975-76	
	\$	%	\$	%	\$	%
CURRENT	747.9	(94.1)	842.0	(94.4)	916.6	(91.9)
IN-HOUSE R&D	374.3	(47.1)	420.3	(47.1)	453.0	(45.4)
R&D GRANTS	278.5	(35.0)	310.8	(34.8)	332.0	(33.3)
R&D CONTRACTS	68.5	(8.6)	79.9	(9.0)	95.7	(9.6)
RESEARCH FELLOWSHIPS	12.5	(1.6)	14.3	(1.6)	15.9	(1.6)
ADMIN. OF EXTRAMURAL PROGRAMS	14.1	(1.8)	16.7	(1.9)	19.9	(2.0)
CAPITAL EXPENDITURES	46.9	(5.9)	49.9	(5.6)	80.9	(8.1)
TOTAL	794.7	(100.0)	891.9	(100.0)	997.6	(100.0)

Current expenditures on research and development are expected to reach \$916.6 million in 1976; a rise of 8.8% over 1975. Current expenditures exclude construction and acquisition of land, buildings, machinery and equipment which are capital expenditures.

Half of total federal current expenditures on R & D will be directed towards in-house research.

Research grants will rise by 6.8% over 1975 and amount to \$332.0 million or 36.2% of the total.

Research contracts, administration of extramural programs and research fellowships will rise by 19.7%, 19.2% and 11.2% respectively.

TABLE 11

NATURAL AND HUMAN SCIENCES

FEDERAL INTRAMURAL AND EXTRAMURAL EXPENDITURES ON RESEARCH AND DEVELOPMENT

BY DEPARTMENT OR AGENCY, 1973-76

(\$ MILLIONS)

DEPARTMENT OR AGENCY	1973-74			1974-75			1975-76		
	INTRA- MURAL	EXTRA- MURAL	TOTAL	INTRA- MURAL	EXTRA- MURAL	TOTAL	INTRA- MURAL	EXTRA- MURAL	TOTAL
NRC	50.9	74.4	125.3	55.9	80.2	136.0	63.0	98.5	161.5
DOE	81.7	10.2	91.9	92.4	14.1	106.6	104.5	14.9	119.5
ITC	3.6	103.8	107.4	4.4	110.4	114.7	3.9	110.5	114.3
Agr	76.2	1.0	77.2	86.1	1.3	87.5	105.5	2.3	107.8
AECL	67.2	22.3	89.4	75.0	21.8	96.8	81.0	15.4	96.4
DND	45.1	13.6	58.7	51.3	15.1	66.4	55.3	14.4	69.7
MEC	0.8	38.8	39.6	0.9	41.4	42.3	1.0	46.9	47.9
EMR	36.1	5.6	41.7	37.4	4.2	41.6	41.7	4.4	46.1
NHW	10.7	20.2	30.8	12.9	25.5	38.4	12.8	26.2	39.0
DOC	16.8	16.4	33.2	18.7	15.5	34.3	22.4	14.3	36.7
MOT	9.8	5.7	15.5	6.3	7.5	13.8	11.7	11.6	23.3
IDRC	1.7	7.2	8.9	2.7	11.4	14.1	3.0	12.9	15.9
CIDA	0.6	8.8	9.4	0.6	11.2	11.9	0.7	13.2	13.9
CC	0.6	8.9	9.5	0.8	10.1	10.9	1.0	12.5	13.4
NM	6.2	---	6.2	7.6	---	7.6	9.6	---	9.6
AECB	---	7.3	7.3	---	10.4	10.4	---	9.1	9.1
DSS	---	---	---	0.1	2.3	2.4	0.4	7.8	8.2
INA	4.3	1.5	5.8	5.2	1.7	6.9	5.7	2.1	7.8
CMHC	0.5	0.9	1.4	0.5	2.6	3.2	1.0	6.0	7.0
PCO	0.2	0.6	0.7	1.6	4.1	5.7	1.6	3.8	5.4
Other	26.1	8.6	34.7	31.1	9.5	40.5	32.2	12.9	45.1
TOTAL	439.1	355.6	794.7	491.4	400.5	891.9	557.9	439.7	997.6

TABLE 12

NATURAL AND HUMAN SCIENCES

FEDERAL EXPENDITURES ON RESEARCH AND DEVELOPMENT

BY PERFORMER, BY FUNDING DEPARTMENT OR AGENCY, 1973-76

(\$ MILLIONS)

PERFORMER	DEPT. OR AGENCY	1973-74		1974-75		1975-76	
		\$	%	\$	%	\$	%
INTRAMURAL *****	Agri	76.2	(17.4)	86.1	(17.5)	105.5	(18.9)
	DOE	81.7	(18.6)	92.4	(18.8)	104.5	(18.7)
	AECL	67.2	(15.3)	75.0	(15.3)	81.0	(14.5)
	NRC	50.9	(11.6)	55.9	(11.4)	63.0	(11.3)
	DND	45.1	(10.3)	51.3	(10.4)	55.3	(9.9)
	EMR	36.1	(8.2)	37.4	(7.6)	41.7	(7.5)
	DOC	16.8	(3.8)	18.7	(3.8)	22.4	(4.0)
	NHW	10.7	(2.4)	12.9	(2.6)	12.8	(2.3)
	Other	54.4	(12.4)	61.7	(12.5)	71.7	(12.8)
	TOTAL	439.1	(100.0)	491.4	(100.0)	557.9	(100.0)
EXTRAMURAL ***** INDUSTRY	ITC	101.0	(57.3)	107.6	(57.7)	107.8	(54.5)
	NRC	13.4	(7.6)	16.5	(8.8)	20.6	(10.4)
	AECL	21.2	(12.0)	20.6	(11.0)	14.3	(7.3)
	DOC	14.8	(8.4)	13.1	(7.0)	13.0	(6.6)
	DND	9.6	(5.4)	10.2	(5.4)	9.7	(4.9)
	MOT	4.3	(2.4)	5.7	(3.1)	8.8	(4.4)
	DOE	4.9	(2.8)	5.2	(2.8)	8.5	(4.3)
	DSS	---	(---)	1.9	(1.0)	6.2	(3.1)
	Other	7.1	(4.0)	5.9	(3.2)	8.8	(4.5)
	TOTAL	176.3	(100.0)	186.6	(100.0)	197.6	(100.0)
UNIVERSITIES & NON-PROFIT INSTITUTIONS	NRC	60.0	(39.9)	59.7	(35.9)	70.6	(37.5)
	MRC	36.7	(24.5)	39.1	(23.5)	44.3	(23.5)
	NHW	19.4	(12.9)	21.5	(12.9)	21.5	(11.4)
	CC	8.9	(5.9)	10.1	(6.1)	12.5	(6.6)
	AECEB	7.2	(4.8)	10.4	(6.2)	9.1	(4.8)
	DOE	3.9	(2.6)	4.8	(2.9)	4.8	(2.6)
	PCO	0.6	(0.4)	4.1	(2.4)	3.8	(2.0)
	CMHC	0.6	(0.4)	1.7	(1.0)	3.3	(1.7)
	Other	12.8	(8.5)	15.2	(9.1)	18.6	(9.9)
TOTAL	150.2	(100.0)	166.5	(100.0)	188.3	(100.0)	
FOREIGN	CIDA	8.7	(42.4)	11.0	(34.5)	12.9	(34.1)
	IDRC	7.1	(34.2)	11.2	(35.1)	12.7	(33.4)
	NRC	0.9	(4.5)	3.8	(12.1)	7.1	(18.8)
	MRC	2.0	(9.8)	2.3	(7.2)	2.6	(7.0)
	DND	0.6	(2.7)	1.3	(4.1)	1.5	(4.0)
	Other	1.3	(6.4)	2.2	(7.0)	1.1	(2.8)
TOTAL	20.6	(100.0)	31.9	(100.0)	37.9	(100.0)	
OTHER CANADIAN	NHW	0.6	(6.6)	3.7	(23.6)	4.1	(25.9)
	DREE	2.2	(25.5)	2.0	(13.0)	3.0	(18.9)
	ITC	1.6	(18.7)	1.5	(9.9)	1.8	(11.1)
	DOE	1.4	(16.2)	4.1	(26.5)	1.5	(9.2)
	CMHC	0.2	(1.8)	0.4	(2.6)	1.1	(6.9)
	EMR	0.3	(3.8)	1.0	(6.7)	1.0	(6.1)
	Other	2.3	(27.5)	2.7	(17.7)	3.5	(22.0)
TOTAL	8.5	(100.0)	15.5	(100.0)	15.9	(100.0)	

TABLE 13

NATURAL AND HUMAN SCIENCES

FEDERAL SUPPORT OF RESEARCH AND DEVELOPMENT
IN CANADIAN UNIVERSITIES AND NON-PROFIT INSTITUTIONS
BY DEPARTMENT OR AGENCY, 1973-76

(\$ MILLIONS)

DEPARTMENT OR AGENCY	1973-74		1974-75		1975-76	
	GRANTS	CONTRACTS	GRANTS	CONTRACTS	GRANTS	CONTRACTS
NRC	58.6	0.2	58.2	0.2	68.9	0.2
MRC	35.0	---	37.4	---	42.3	---
NHW	18.8	0.2	20.8	0.1	20.4	0.4
AECB	7.2	---	10.4	---	9.1	---
CC	5.5	---	6.4	---	7.9	---
DOE	2.1	1.7	2.6	2.1	2.8	2.0
PCO	0.5	0.1	4.0	0.1	3.5	0.3
CMHC	0.6	---	1.7	---	3.3	---
Other	8.1	4.6	9.0	5.9	9.2	9.0
TOTAL	136.5	6.8	150.4	8.4	167.3	11.8

TABLE 14

NATURAL AND HUMAN SCIENCES

FEDERAL SUPPORT OF RESEARCH AND DEVELOPMENT
IN CANADIAN INDUSTRY
BY DEPARTMENT OR AGENCY, 1973-76

(\$ MILLIONS)

DEPARTMENT OR AGENCY	1973-74		1974-75		1975-76	
	GRANTS	CONTRACTS	GRANTS	CONTRACTS	GRANTS	CONTRACTS
ITC	101.0	0.1	107.4	0.3	107.4	0.4
NRC	11.9	0.8	13.7	1.9	15.2	4.4
AECI	---	21.2	---	20.6	---	14.3
DOC	---	14.8	---	13.1	---	13.0
DND	4.5	5.1	4.5	5.7	1.7	8.0
MOT	---	4.3	---	5.7	---	8.8
DOE	0.6	4.3	---	5.2	---	8.5
DSS	---	---	---	1.9	---	6.2
Other	3.3	3.7	0.5	5.5	0.7	8.1
TOTAL	121.3	54.3	126.0	59.7	124.9	71.6

1.3 Related Scientific Activity Expenditures

TABLE 15

NATURAL AND HUMAN SCIENCES

FEDERAL EXPENDITURES ON RELATED SCIENTIFIC ACTIVITIES
BY PERFORMER, 1973-76

(\$ MILLIONS)

PERFORMER	1973-74		1974-75		1975-76	
	\$	%	\$	%	\$	%
INTRAMURAL	334.8	(84.1)	398.4	(83.6)	442.4	(83.4)
UNIVERSITIES & NON-PROFIT INSTITUTIONS	31.1	(7.8)	35.7	(7.5)	39.9	(7.5)
FOREIGN	18.8	(4.7)	27.0	(5.7)	29.7	(5.6)
INDUSTRY	9.1	(2.3)	11.4	(2.4)	14.2	(2.7)
OTHER CANADIAN	4.2	(1.1)	4.2	(0.9)	4.4	(0.8)
TOTAL	398.0	(100.0)	476.7	(100.0)	530.6	(100.0)

TABLE 16

NATURAL AND HUMAN SCIENCES

FEDERAL INTRAMURAL AND EXTRAMURAL EXPENDITURES ON RELATED SCIENTIFIC ACTIVITIES
BY DEPARTMENT OR AGENCY, 1973-76

(\$ MILLIONS)

DEPARTMENT OR AGENCY	1973-74			1974-75			1975-76		
	INTRA- MURAL	EXTRA- MURAL	TOTAL	INTRA- MURAL	EXTRA- MURAL	TOTAL	INTRA- MURAL	EXTRA- MURAL	TOTAL
DOE	107.5	2.3	109.9	129.0	2.7	131.7	137.3	2.8	140.1
SC	74.5	---	74.5	94.3	---	94.3	109.8	---	109.8
EMR	33.7	3.3	37.0	38.1	3.5	41.6	40.4	4.3	44.7
NRC	21.0	7.8	28.8	18.6	8.5	27.1	19.5	9.8	29.3
CIDA	0.3	16.1	16.4	0.3	22.6	23.0	0.4	24.3	24.6
DND	15.4	1.4	16.9	17.6	1.5	19.1	19.2	1.8	21.0
NHW	5.2	5.4	10.5	7.9	7.3	15.2	10.3	7.1	17.4
CC	0.8	12.6	13.4	0.9	13.4	14.3	1.2	14.2	15.4
IDRC	4.4	3.2	7.6	7.0	5.3	12.3	7.9	6.1	14.0
NL	7.6	---	7.6	8.6	---	8.6	10.5	---	10.5
CCA	8.0	---	8.0	8.8	---	8.8	10.2	---	10.2
TBS	7.3	---	7.3	7.0	---	7.0	7.0	---	7.0
M&I	5.3	---	5.3	6.6	---	6.6	6.9	---	6.9
PA	4.1	---	4.1	5.3	---	5.3	6.1	---	6.1
Fin	5.0	---	5.0	5.0	---	5.0	5.7	---	5.7
NM	4.0	---	4.0	4.2	---	4.2	5.6	---	5.6
AECL	3.5	0.5	4.0	4.9	0.6	5.5	4.4	0.4	4.9
MJA	1.7	0.7	2.4	3.2	0.9	4.1	3.4	1.3	4.8
SofS	1.1	1.6	2.7	1.3	2.2	3.5	1.8	2.2	4.1
Agr	3.4	---	3.4	3.6	---	3.6	4.0	---	4.0
Other	21.2	8.3	29.5	26.1	10.0	36.1	30.8	13.8	44.6
TOTAL	334.8	63.2	398.0	398.4	78.3	476.7	442.4	88.2	530.6



2

Natural Sciences

2.1 Total Scientific Activity Expenditures

TABLE 17

NATURAL SCIENCES

FEDERAL EXPENDITURES ON SCIENTIFIC ACTIVITIES BY PERFORMER, 1973-76

(\$ MILLIONS)

PERFORMER	1973-74		1974-75		1975-76	
	\$	%	\$	%	\$	%
INTRAMURAL	599.3	(62.9)	669.8	(63.1)	749.9	(63.9)
INDUSTRY	178.2	(18.7)	199.2	(17.8)	199.0	(16.9)
UNIVERSITIES & NON-PROFIT INSTITUTIONS	146.0	(15.3)	155.0	(14.6)	172.7	(14.7)
FOREIGN	23.1	(2.4)	37.5	(3.5)	42.7	(3.6)
OTHER CANADIAN	6.4	(0.7)	10.5	(1.0)	9.8	(0.8)
TOTAL	953.0	(100.0)	1,061.9	(100.0)	1,174.1	(100.0)

Expenditures allocated to **intramural activities** are expected to reach \$749.9 million in 1976, a rise of \$80.1 million in current dollars, or 11.9%, a growth rate higher than that of the federal natural science budget as a whole.

Extramural activities are expected to reach \$424.2 million next year, an increase of 8.1% over 1975, with a growth rate lower than that for the entire federal natural science budget. However, this relative decline is very unevenly distributed among the various performers.

Canadian industry is expected to receive \$199.0 million, a rise of 5.2% over 1975. Between 1974 and 1975 this increase had been 6.1%. Industry is expected to receive 16.9% of the total federal budget for natural sciences.

Universities and non-profit institutions will be allocated \$172.7 million, an increase of 11.4%. They represent 14.7% of the total.

The share of foreign performers will increase by 13.9% and it is expected to reach \$42.7 million, which represents 3.6% of the total budget.

Other Canadian performers are expected to see their funds decrease in 1976. They will drop from \$10.5 million in 1975 to \$9.8 million. This decline follows an increase of 64.1% between 1974 and 1975.

TABLE 18

NATURAL SCIENCES

FEDERAL EXPENDITURES ON SCIENTIFIC ACTIVITIES
BY PERFORMER, BY ACTIVITY, 1973-76

(\$ MILLIONS)

PERFORMER	1973-74			1974-75			1975-76		
	R&D	RSA	TOTAL	R&D	RSA	TOTAL	R&D	RSA	TOTAL
INTRAMURAL	399.4	199.9	599.3	440.3	229.5	669.8	502.5	247.3	749.9
INDUSTRY	172.7	5.5	178.2	181.8	7.3	189.2	189.2	9.8	199.0
UNIVERSITIES & NON-PROFIT INS.	130.6	15.4	146.0	138.3	16.6	155.0	154.2	18.5	172.7
FOREIGN	11.0	12.1	23.1	19.0	18.5	37.5	22.4	20.3	42.7
OTHER CANADIAN	5.2	1.3	6.4	9.4	1.1	10.5	8.8	1.1	9.8
TOTAL	718.9	234.1	953.0	788.7	273.2	1,061.9	877.1	297.0	1,174.1

Total federal expenditures in the natural sciences are expected to reach \$1,174.1 million in 1976, an increase of \$112.2 million or 10.6% over 1975. Between 1974 and 1975, the growth rate was 11.4%.

Research and development expenditures are expected to equal \$877.1 million in 1976, a rise of \$88.3 million or 11.2% over 1975. Between 1974 and 1975 the growth rate was 9.7%.

Related scientific activities will account for \$297.0 million in 1976, a rise of \$23.8 million or 8.7% over the previous year. Between 1974 and 1975 the growth rate was 16.7%.

Research and development and related scientific activities are expected to account for respectively 74.7% and 25.3% of the federal natural science budget. In 1974 and 1975 these figures were 75.4% and 24.6%, and 74.3% and 25.7%, respectively. The ratio of three to one has remained constant throughout the period.

TABLE 19

NATURAL SCIENCES

FEDERAL EXPENDITURES ON SCIENTIFIC ACTIVITIES

BY DEPARTMENT OR AGENCY, BY ACTIVITY, 1973-76

(\$ MILLIONS)

DEPARTMENT OR AGENCY	1973-74			1974-75			1975-76		
	R&D	RSA	TOTAL	R&D	RSA	TOTAL	R&D	RSA	TOTAL
DOE	89.9	105.8	195.6	104.1	127.2	231.4	117.0	135.4	252.4
NRC	125.3	28.8	154.1	136.0	27.1	163.1	161.5	29.3	190.8
ITC	106.2	0.8	107.0	113.3	0.9	114.3	112.7	1.1	113.8
Agr	75.6	3.4	79.0	85.8	3.6	89.4	106.1	4.0	110.0
AECL	89.4	4.0	93.5	96.8	5.5	102.3	96.4	4.9	101.3
DND	58.1	16.2	74.3	65.3	18.1	83.4	68.7	19.9	88.6
EMR	40.3	36.5	76.8	39.9	41.1	81.0	44.3	44.1	88.4
MEC	39.6	1.6	41.2	42.3	1.5	43.8	47.9	1.6	49.5
DOC	33.1	0.3	33.5	34.3	0.3	34.6	36.6	0.3	36.9
NHW	23.5	4.5	27.9	24.7	6.7	31.4	23.7	8.6	32.2
CIDA	3.1	15.8	18.9	4.4	22.0	26.4	4.6	23.6	28.2
MOT	13.4	1.5	14.9	11.1	1.6	12.6	17.4	2.0	19.4
IDRC	4.8	2.5	7.2	7.1	3.7	10.8	7.9	4.1	12.0
CCA	---	7.8	7.8	---	8.6	8.6	---	9.9	9.9
DSS	---	---	---	2.3	0.6	2.9	7.7	2.1	9.8
Other	16.5	4.7	21.2	21.2	4.7	25.9	24.7	5.9	30.7
TOTAL	718.9	234.1	953.0	788.7	273.2	1,061.9	877.1	297.0	1,174.1

TABLE 20

NATURAL SCIENCES

FEDERAL INTRAMURAL AND EXTRAMURAL EXPENDITURES ON SCIENTIFIC ACTIVITIES

BY DEPARTMENT OR AGENCY, 1973-76

(\$ MILLIONS)

DEPARTMENT OR AGENCY	1973-74			1974-75			1975-76		
	INTRA- MURAL	EXTRA- MURAL	TOTAL	INTRA- MURAL	EXTRA- MURAL	TOTAL	INTRA- MURAL	EXTRA- MURAL	TOTAL
DOE	185.4	10.2	195.6	216.6	14.7	231.4	236.7	15.8	252.4
NRC	71.9	82.2	154.1	74.5	88.6	163.1	82.5	108.3	190.8
ITC	3.4	103.7	107.0	4.0	110.2	114.3	3.4	110.4	113.8
Agr	78.2	0.8	79.0	88.1	1.3	89.4	107.8	2.2	110.0
AECL	70.7	22.8	93.5	79.9	22.4	102.3	85.5	15.8	101.3
DND	59.5	14.8	74.3	67.1	16.4	83.4	72.7	15.9	88.6
EMR	68.1	8.8	76.8	73.5	7.5	81.0	79.9	8.5	88.4
MRC	0.9	40.4	41.2	1.0	42.9	43.8	1.1	48.4	49.5
DOC	17.1	16.3	33.5	19.1	15.5	34.6	22.7	14.2	36.9
NHW	12.3	15.7	27.9	14.5	16.8	31.4	15.8	16.5	32.2
CIDA	0.3	18.6	18.9	0.4	26.0	26.4	0.4	27.8	28.2
MOT	9.9	5.0	14.9	6.3	6.3	12.6	11.4	8.0	19.4
IDRC	2.9	4.4	7.2	4.3	6.5	10.8	4.7	7.3	12.0
CCA	7.8	---	7.8	8.6	---	8.6	9.9	---	9.9
DSS	---	---	---	0.1	2.8	2.9	0.5	9.3	9.8
Other	11.0	10.2	21.2	11.8	14.1	25.9	15.0	15.7	30.7
TOTAL	599.3	353.7	953.0	669.8	392.1	1,061.9	749.9	424.2	1,174.1

Intramural expenditures on the natural sciences are expected to reach \$749.9 million in 1976, an increase of \$80.1 million or 11.9% over the previous year.

Extramural expenditures on the natural sciences are expected to reach \$424.2 million, an increase of 8.1% over 1975.

The share of federally funded scientific activities carried out intramurally has remained almost constant during the last few years, with about 63% of the total budget for natural sciences.

Four departments and agencies account for more than half of the total federal expenditures on the natural sciences: The Department of the Environment with \$252.5 million, the National Research Council with \$190.8 million, Industry, Trade and Commerce with \$113.8 million and the Department of Agriculture with \$110.0 million, totalling \$667.1 million.

Atomic Energy of Canada Limited will also spend more than \$100 million on natural sciences activities in 1976.

Almost ninety-five per cent (94.7%) of total federal expenditures on the natural sciences is accounted for by the twelve departments and agencies represented in the chart above.

Two government agencies alone, the National Research Council and Industry, Trade and Commerce, provide 51% of the funds for extramural activities in the natural sciences. They distribute \$218.8 million out of a total of \$424.2 million. No other agency or department will provide more than \$50 million.

Intramural expenditures are more evenly distributed. Six departments and agencies will spend more than \$50 million in this area.

TABLE 21

NATURAL SCIENCES

FEDERAL EXPENDITURES ON SCIENTIFIC ACTIVITIES
 BY PERFORMER, BY FUNDING DEPARTMENT OR AGENCY, 1973-76
 (\$ MILLIONS)

PERFORMER	DEPT. OR AGENCY	1973-74		1974-75		1975-76	
		\$	%	\$	%	\$	%
INTRAMURAL *****	DOE	185.4	(30.9)	216.6	(32.3)	236.7	(31.6)
	Agr	78.2	(13.0)	88.1	(13.2)	107.8	(14.4)
	AECCL	70.7	(11.8)	79.9	(11.9)	85.5	(11.4)
	NRC	71.9	(12.0)	74.5	(11.1)	82.5	(11.0)
	EMR	69.1	(11.4)	73.5	(11.0)	79.9	(10.7)
	DND	59.5	(9.9)	67.1	(10.0)	72.7	(9.7)
	DOC	17.1	(2.9)	19.1	(2.8)	22.7	(3.0)
	NHW	12.3	(2.0)	14.5	(2.2)	15.8	(2.1)
	Other	36.2	(6.0)	36.5	(5.4)	46.3	(6.2)
	TOTAL	599.3	(100.0)	669.8	(100.0)	749.9	(100.0)
	EXTRAMURAL ***** INDUSTRY	ITC	101.0	(56.7)	107.4	(56.8)	107.4
NRC		13.4	(7.5)	16.5	(8.7)	20.6	(10.4)
AECCL		21.7	(12.2)	21.2	(11.2)	14.8	(7.4)
DOC		14.8	(8.3)	13.1	(6.9)	13.0	(6.5)
DND		11.0	(6.2)	11.6	(6.2)	11.4	(5.7)
DOE		5.1	(2.8)	6.0	(3.2)	9.4	(4.7)
DSS		---	(---)	2.3	(1.2)	7.7	(3.9)
MOT		4.1	(2.3)	5.0	(2.6)	6.1	(3.0)
Other		7.1	(4.0)	6.1	(3.2)	8.7	(4.4)
TOTAL		178.2	(100.0)	189.2	(100.0)	193.0	(100.0)
UNIVERSITIES & NON-PROFIT INSTITUTIONS		NRC	67.0	(43.9)	67.4	(43.5)	79.6
	NRC	38.3	(26.2)	40.5	(26.1)	45.6	(26.4)
	NHW	15.3	(10.5)	16.4	(10.6)	15.9	(9.2)
	AECCL	7.2	(5.0)	10.4	(6.7)	9.1	(5.2)
	CIDA	4.5	(3.1)	4.6	(2.9)	4.6	(2.6)
	DOE	3.7	(2.5)	4.3	(2.8)	4.5	(2.6)
	DND	3.3	(2.2)	3.4	(2.2)	3.0	(1.7)
	Agr	0.8	(0.5)	1.1	(0.7)	2.2	(1.3)
	Other	5.9	(4.0)	7.0	(4.5)	8.3	(4.8)
	TOTAL	146.0	(100.0)	155.0	(100.0)	172.7	(100.0)
FOREIGN	CIDA	14.0	(60.7)	21.5	(57.3)	23.3	(54.6)
	NRC	1.2	(5.1)	4.1	(11.0)	7.4	(17.4)
	IDRC	4.2	(18.0)	6.2	(16.7)	6.9	(16.3)
	Other	3.7	(16.2)	5.6	(15.0)	5.0	(11.7)
TOTAL	23.1	(100.0)	37.5	(100.0)	42.7	(100.0)	
OTHER CANADIAN	DREE	1.5	(22.9)	1.5	(14.6)	2.5	(25.3)
	DOE	1.5	(22.6)	4.3	(41.3)	1.6	(16.7)
	ITC	1.0	(16.3)	1.0	(10.0)	1.3	(13.0)
	EMR	0.9	(12.7)	1.1	(10.9)	1.1	(10.9)
	CMHC	0.1	(1.9)	0.4	(3.3)	1.0	(10.2)
	NRC	0.6	(9.0)	0.7	(6.2)	0.7	(7.1)
	Other	0.9	(14.7)	1.4	(13.8)	1.7	(17.0)
	TOTAL	6.4	(100.0)	10.5	(100.0)	9.8	(100.0)

Federal expenditures on intramural natural science activities are expected to reach \$749.9 million in 1976. This is an increase of 11.9% over last year. Between 1974 and 1975 the increase had been 11.8%.

Six departments and agencies will spend nearly ninety per cent of the \$749.9 million.

The Department of the Environment is by far the largest intramural natural science spender with over twice the expenditure of the next largest department, the Department of Agriculture.

The share of each of the six major agencies and departments has remained constant during the three-year period.

Industry, Trade and Commerce remains the largest supporter of activities in the natural sciences in industry, accounting for just over half of the total.

The National Research Council, as in recent years, will provide the lion's share of support to universities and non-profit institutions. This share is even expected to rise from 43.5% of the total amount in 1975 to 46.1% in 1976.

As for other funders, the most important one, being the Medical Research Council, their share is expected to remain more or less the same throughout the period.

Support of foreign performers is expected to rise 13.9% in 1976, reaching \$42.7 million. The Canadian International Development Agency is expected to account for more than 50% of such funds.

Other Canadian performers, which are made up of provincial research councils, provincial and municipal governments and private individuals, are expected to receive \$9.8 million or 0.8% of the total federal natural science budget in 1976. The Department of Regional Economic Expansion will be the main funder.

2.2 Research and Development Expenditures

TABLE 22
NATURAL SCIENCES

FEDERAL EXPENDITURES ON RESEARCH AND DEVELOPEMENT
BY PERFORMER, 1973-76

(\$ MILLIONS)

PERFORMER	1973-74		1974-75		1975-76	
	\$	%	\$	%	\$	%
INTRAMURAL	399.4	(55.6)	440.3	(55.8)	502.5	(57.3)
INDUSTRY	172.7	(24.0)	181.8	(23.1)	189.2	(21.6)
UNIVERSITIES & NON-PROFIT INSTITUTIONS	130.6	(18.2)	138.3	(17.5)	154.2	(17.6)
FOREIGN	11.0	(1.5)	19.0	(2.4)	22.4	(2.6)
OTHER CANADIAN	5.2	(0.7)	9.4	(1.2)	8.8	(1.0)
TOTAL	718.9	(100.0)	788.7	(100.0)	877.1	(100.0)

TABLE 23
NATURAL SCIENCES

FEDERAL EXPENDITURES ON RESEARCH AND DEVELOPEMENT
BY TYPE OF FUNDING, 1973-76

(\$ MILLIONS)

TYPE OF FUNDING	1973-74		1974-75		1975-76	
	\$	%	\$	%	\$	%
CURRENT	673.8	(93.7)	740.8	(93.8)	798.4	(91.0)
IN-HOUSE R&D	341.9	(47.6)	377.3	(47.8)	407.3	(46.4)
R&D GRANTS	253.4	(35.3)	271.8	(34.5)	286.3	(32.6)
R&D CONTRACTS	59.8	(8.3)	69.9	(8.9)	80.7	(9.2)
RESEARCH FELLOWSHIPS	8.5	(1.2)	9.4	(1.2)	10.1	(1.2)
ADMIN. OF EXTRAMURAL PROGRAMS	10.0	(1.4)	12.3	(1.6)	14.0	(1.6)
CAPITAL EXPENDITURES	45.1	(6.3)	48.0	(6.1)	78.7	(9.0)
TOTAL	718.9	(100.0)	788.7	(100.0)	877.1	(100.0)

TABLE 24

NATURAL SCIENCES

FEDERAL INTRAMURAL AND EXTRAMURAL EXPENDITURES ON RESEARCH AND DEVELOPMENT

BY DEPARTMENT OR AGENCY, 1973-76

(\$ MILLIONS)

DEPARTMENT OR AGENCY	1973-74			1974-75			1975-76		
	INTRA- MURAL	EXTRA- MURAL	TOTAL	INTRA- MURAL	EXTRA- MURAL	TOTAL	INTRA- MURAL	EXTRA- MURAL	TOTAL
NRC	50.9	74.4	125.3	55.9	80.2	136.0	63.0	98.5	161.5
DOE	80.3	9.6	89.9	90.8	13.4	104.1	102.7	14.3	117.0
ITC	3.4	102.9	106.2	4.0	109.3	113.3	3.4	109.3	112.7
Agr	74.8	0.8	75.6	84.6	1.3	85.8	103.9	2.2	106.1
AECL	67.2	22.3	89.4	75.0	21.8	96.8	81.0	15.4	96.4
DND	44.7	13.4	58.1	50.5	14.9	65.3	54.5	14.2	68.7
MBC	0.8	38.8	39.6	0.9	41.4	42.3	1.0	46.9	47.9
EMR	34.9	5.5	40.3	35.9	4.0	39.9	40.1	4.2	44.3
DOC	16.8	16.3	33.1	18.7	15.5	34.3	22.4	14.2	36.6
NHW	8.8	14.7	23.5	9.4	15.3	24.7	8.7	15.0	23.7
MOT	9.2	4.3	13.4	5.5	5.5	11.1	10.4	7.0	17.4
AECB	---	7.3	7.3	---	10.4	10.4	---	9.1	9.1
IDEC	0.9	3.9	4.8	1.3	5.8	7.1	1.5	6.5	7.9
DSS	---	---	---	0.1	2.2	2.3	0.4	7.3	7.7
NM	3.3	---	3.3	4.1	---	4.1	5.7	---	5.7
Other	3.5	5.5	9.0	3.5	7.6	11.1	4.0	10.5	14.5
TOTAL	399.4	319.5	718.9	440.3	348.5	788.7	502.5	374.6	877.1

In 1976, federal expenditures on research and development in the natural sciences are expected to reach \$877.1 million, an increase of 11.2% over the previous year and 74.7% of the total federal budget for the natural sciences.

Intramural expenditures on R & D in the same area are expected to reach \$502.5 million, an increase of 14.1% over 1975. Between 1974 and 1975 the increase was 10.2%.

Extramural expenditures on R & D in the area concerned are expected to reach \$374.6 million, an increase of 7.4% over 1975. Between 1974 and 1975, the increase was 9.0%.

The distribution between intramural and extramural expenditures on research and development in the natural sciences is estimated at 57.3% and 42.7% respectively. This compares to 55.8% and 44.2% in 1975 and 55.6% and 44.4% in 1974.

The National Research Council will be the largest spender of federal research and development funds for the natural sciences. Its expenditures will reach an estimated \$161.5 million, of which 39% will be for intramural research and 61% for extramural research.

Four other agencies and departments will spend about \$100 million. From the top down, these are the Department of the Environment with 87.8% of expenditures for intramural activities, the Department of Industry, Trade and Commerce with 97% of expenditures for extramural activities, making it the top department for expenditures of this type, the Department of Agriculture with 97.9% of expenditures for intramural activities and Atomic Energy of Canada Limited with 84% for intramural expenditures.

Three agencies and departments are expected to see a decline in funds for research and development in the natural sciences. These are the Department of Industry, Trade and Commerce (whose extramural expenditures will not be affected), Atomic Energy of Canada Limited and the Department of National Health and Welfare.

TABLE 25

NATURAL SCIENCES

FEDERAL EXPENDITURES ON RESEARCH AND DEVELOPMENT
 BY PERFORMER, BY FUNDING DEPARTMENT OR AGENCY, 1973-76
 (\$ MILLIONS)

PERFORMER	DEPT. OR AGENCY	1973-74		1974-75		1975-76		
		\$	%	\$	%	\$	%	
INTRAMURAL *****	Agri	74.8	(18.7)	84.6	(19.2)	103.9	(20.7)	
	DOE	80.3	(20.1)	90.8	(20.6)	102.7	(20.4)	
	AECL	67.2	(16.9)	75.0	(17.0)	81.0	(16.1)	
	NRC	50.9	(12.7)	55.9	(12.7)	63.0	(12.5)	
	DND	44.7	(11.2)	50.5	(11.5)	54.5	(10.8)	
	EMR	34.9	(8.7)	35.9	(8.2)	40.1	(8.0)	
	DOC	16.8	(4.2)	18.7	(4.3)	22.4	(4.5)	
	MOT	9.2	(2.3)	5.5	(1.3)	10.4	(2.1)	
	NHW	8.9	(2.2)	9.4	(2.1)	8.7	(1.7)	
	Other	11.8	(3.0)	14.0	(3.2)	15.9	(3.2)	
	TOTAL		399.4	(100.0)	440.3	(100.0)	502.5	(100.0)
EXTRAMURAL ***** INDUSTRY	ITC	101.0	(58.5)	107.4	(59.0)	107.4	(56.8)	
	NRC	13.4	(7.8)	16.5	(3.1)	20.6	(10.9)	
	AECL	21.2	(12.3)	20.6	(11.3)	14.3	(7.6)	
	DOC	14.8	(8.6)	13.1	(7.2)	13.0	(6.8)	
	DND	9.6	(5.5)	10.1	(5.6)	9.6	(5.1)	
	DOE	4.7	(2.7)	5.0	(2.7)	3.5	(4.4)	
	DSS	---	(---)	1.8	(1.0)	5.9	(3.1)	
	MOT	3.6	(2.1)	4.6	(2.6)	5.6	(3.0)	
	Other	4.4	(2.5)	2.7	(1.5)	4.4	(2.3)	
	TOTAL		172.7	(100.0)	181.8	(100.0)	183.2	(100.0)
	UNIVERSITIES & NON-PROFIT INSTITUTIONS	NRC	60.0	(45.9)	59.7	(43.2)	70.6	(45.8)
MRC		36.7	(28.1)	39.1	(28.3)	44.3	(28.7)	
NHW		14.4	(11.0)	14.9	(10.8)	14.5	(9.4)	
AECL		7.2	(5.5)	10.4	(7.5)	9.1	(5.9)	
DOE		3.5	(2.7)	4.2	(3.0)	4.4	(2.8)	
DND		3.3	(2.5)	3.4	(2.4)	3.0	(1.9)	
Agri		0.8	(0.6)	1.1	(0.8)	2.2	(1.4)	
EMR		1.2	(0.9)	1.2	(0.9)	1.2	(0.8)	
Other		3.5	(2.7)	4.3	(3.1)	5.0	(3.2)	
TOTAL			130.6	(100.0)	138.3	(100.0)	154.2	(100.0)
FOREIGN	NRC	0.9	(9.4)	3.8	(20.3)	7.1	(31.8)	
	IDRC	3.7	(33.8)	5.6	(29.4)	6.2	(27.7)	
	CIDA	2.7	(24.9)	4.1	(21.4)	4.2	(18.8)	
	MRC	2.0	(18.3)	2.3	(12.1)	2.6	(11.8)	
	Other	1.6	(14.5)	3.2	(16.7)	2.2	(9.9)	
TOTAL		11.0	(100.0)	19.0	(100.0)	22.4	(100.0)	
OTHER CANADIAN	DREE	1.5	(28.4)	1.5	(16.4)	2.5	(28.4)	
	DOE	1.4	(26.4)	4.1	(43.8)	1.4	(16.5)	
	ITC	1.0	(20.3)	1.0	(11.2)	1.3	(14.5)	
	CMHC	0.1	(2.3)	0.4	(3.7)	1.0	(11.4)	
	EMR	0.3	(5.9)	1.0	(11.1)	1.0	(11.0)	
	Other	0.9	(16.7)	1.3	(13.8)	1.6	(18.3)	
	TOTAL		5.2	(100.0)	9.4	(100.0)	9.8	(100.0)

Intramural expenditures on research and development by the Departments of Agriculture and the Environment are expected to be \$206.6 million or 41.1% of total federal expenditures in this area. Growth rates for the two major performers will be 22.8% and 13.1% respectively, which puts the Department of Agriculture ahead of the Department of the Environment.

The next four departments and agencies will spend an estimated \$238.6 million or 47.5%, leaving 11.4% of intramural research and development expenditures to be shared by all other departments and agencies.

The Department of Industry, Trade and Commerce is the largest federal supporter of R & D in industry, accounting for 56.8% of the total.

The National Research Council comes second in support of R & D in industry, but provides the largest share of support for R & D in universities and non-profit institutions.

Universities and non-profit institutions receive 94.6% of their federal R & D funds from six departments and agencies. The largest share, 74.5%, is provided by two federal agencies: the National Research Council and the Medical Research Council.

Receiving an estimated 2.6% of federal expenditures on R & D, foreign performers will see their share rise from \$19 million to \$22.4 million. More than 50% will come from the National Research Council and the International Development Research Centre.

Other Canadian performers, which include provincial councils, provincial and municipal governments and private individuals, are expected to receive \$8.8 million or 1% of total federal expenditures on R & D in the natural sciences.

TABLE 26

NATURAL SCIENCES

FEDERAL SUPPORT OF RESEARCH AND DEVELOPMENT
 IN CANADIAN UNIVERSITIES AND NON-PROFIT INSTITUTIONS
 BY DEPARTMENT OR AGENCY, 1973-76

(\$ MILLIONS)

DEPARTMENT OR AGENCY	1973-74		1974-75		1975-76	
	GRANTS	CONTRACTS	GRANTS	CONTRACTS	GRANTS	CONTRACTS
NRC	58.6	0.2	58.2	0.2	68.9	0.2
MRC	35.0	---	37.4	---	42.3	---
NHM	14.3	0.2	14.9	---	14.5	---
AECB	7.2	---	10.4	---	9.1	---
DOE	1.8	1.6	2.1	2.0	2.4	1.9
DND	2.9	0.3	2.9	0.5	2.3	0.7
Agr	0.8	---	0.8	0.3	0.8	1.4
Other	2.2	2.5	2.2	3.3	2.0	4.1
TOTAL	122.8	4.8	129.0	6.2	142.3	8.4

TABLE 27

NATURAL SCIENCES

FEDERAL SUPPORT OF RESEARCH AND DEVELOPMENT
 IN CANADIAN INDUSTRY
 BY DEPARTMENT OR AGENCY, 1973-76

(\$ MILLIONS)

DEPARTMENT OR AGENCY	1973-74		1974-75		1975-76	
	GRANTS	CONTRACTS	GRANTS	CONTRACTS	GRANTS	CONTRACTS
ITC	101.0	---	107.4	---	107.4	---
NRC	11.9	0.8	13.7	1.9	15.2	4.4
AECL	---	21.2	---	20.6	---	14.3
DOC	---	14.8	---	13.1	---	13.0
DND	4.5	5.1	4.5	5.6	1.7	8.0
DOE	0.6	4.1	---	5.0	---	8.3
DSS	---	---	---	1.8	---	5.9
Other	3.3	4.7	0.4	7.0	0.5	9.5
TOTAL	121.3	50.7	125.9	55.0	124.7	63.4

2.3 Related Scientific Activity Expenditures

TABLE 28

NATURAL SCIENCES

FEDERAL EXPENDITURES ON RELATED SCIENTIFIC ACTIVITIES
BY PERFORMER, 1973-76

(\$ MILLIONS)

PERFORMER	1973-74		1974-75		1975-76	
	\$	%	\$	%	\$	%
INTRAMURAL	199.9	(85.4)	229.5	(84.0)	247.3	(83.3)
FOREIGN	12.1	(5.2)	18.5	(6.8)	20.3	(6.8)
UNIVERSITIES & NON-PROFIT INSTITUTIONS	15.4	(6.6)	16.6	(6.1)	19.5	(6.2)
INDUSTRY	5.5	(2.4)	7.3	(2.7)	9.8	(3.3)
OTHER CANADIAN	1.3	(0.5)	1.1	(0.4)	1.1	(0.4)
TOTAL	234.1	(100.0)	273.2	(100.0)	297.0	(100.0)

TABLE 29

NATURAL SCIENCES

FEDERAL EXPENDITURES ON RELATED SCIENTIFIC ACTIVITIES
BY ACTIVITY, 1973-76

(\$ MILLIONS)

ACTIVITY	1973-74		1974-75		1975-76	
	\$	%	\$	%	\$	%
CURRENT	215.2	(91.9)	252.5	(92.5)	280.3	(94.4)
SCI. DATA COLLECTION	108.1	(46.2)	126.0	(46.1)	139.1	(46.8)
SCI. INFORMATION	46.4	(19.8)	53.6	(19.6)	60.2	(20.3)
TESTING & STANDARDIZATION	27.6	(11.8)	31.7	(11.6)	34.9	(11.7)
FEASIBILITY STUDIES	15.6	(6.7)	22.4	(8.2)	25.2	(8.5)
EDUCATIONAL SUPPORT	15.0	(6.4)	16.0	(5.9)	17.7	(6.0)
ADMIN. OF EXTRAMURAL PROG.	2.3	(1.0)	2.8	(1.0)	3.2	(1.1)
CAPITAL	19.0	(8.1)	20.6	(7.5)	16.7	(5.6)
TOTAL	234.1	(100.0)	273.2	(100.0)	297.0	(100.0)

Federal expenditures on related scientific activities are expected to reach \$297.0 million, or 25.3% of the total. This is an increase of 8.7% over the previous year.

Current expenditures will account for 94.4% of the total, while capital expenditures are expected to reach 5.6%.

Collection of scientific data alone will account for \$139.1 million or 46.8% of a total of \$297.0 million.

TABLE 30

NATURAL SCIENCES

FEDERAL INTRAMURAL AND EXTRAMURAL EXPENDITURES ON RELATED SCIENTIFIC ACTIVITIES
 BY DEPARTMENT OR AGENCY, 1973-76
 (\$ MILLIONS)

DEPARTMENT OR AGENCY	1973-74			1974-75			1975-76		
	INTRA- MURAL	EXTRA- MURAL	TOTAL	INTRA- MURAL	EXTRA- MURAL	TOTAL	INTRA- MURAL	EXTRA- MURAL	TOTAL
DOE	105.2	0.6	105.8	125.9	1.4	127.2	133.9	1.5	135.4
EMR	33.2	3.3	36.5	37.6	3.5	41.1	39.8	4.3	44.1
NEC	21.0	7.8	28.8	18.6	8.5	27.1	19.5	9.8	29.3
CIDA	---	15.8	15.8	---	22.0	22.0	---	23.6	23.6
DND	14.8	1.4	16.2	16.6	1.5	18.1	18.2	1.8	19.9
CCA	7.8	---	7.8	8.6	---	8.6	9.9	---	9.9
NHW	3.4	1.0	4.5	5.1	1.6	6.7	7.1	1.5	8.6
AECL	3.5	0.5	4.0	4.9	0.6	5.5	4.4	0.4	4.9
IDRC	2.0	0.5	2.5	2.9	0.7	3.7	3.3	0.8	4.1
Agr	3.4	---	3.4	3.6	---	3.6	4.0	---	4.0
NM	2.3	---	2.3	2.2	---	2.2	3.3	---	3.3
DSS	---	---	---	---	0.6	0.6	0.1	2.0	2.1
MOT	0.7	0.8	1.5	0.8	0.8	1.6	1.0	1.0	2.0
MRC	0.1	1.6	1.6	0.1	1.4	1.5	0.1	1.5	1.6
CPDC	0.8	0.1	0.9	0.9	0.2	1.1	0.9	0.3	1.2
Other	1.8	0.8	2.6	1.7	1.0	2.7	1.8	1.2	3.0
TOTAL	199.9	34.2	234.1	229.5	43.6	273.2	247.3	49.6	297.0

The proportion of intramural and extramural expenditures on related scientific activities will be 83.3% and 16.7% respectively.

The Department of the Environment will be the largest performer of related scientific activities in the natural sciences in 1976, with expected expenditures of \$135.4 million or 45.6% of the total; 98.9% will be performed intramurally.

The Canadian International Development Agency will be the largest funder of extramural related scientific activities in the natural sciences; its allotment of \$23.6 million will equal 47.6% of the extramural total.



TABLE 31

NATURAL SCIENCES

FEDERAL CURRENT EXPENDITURES ON RELATED SCIENTIFIC ACTIVITIES

BY ACTIVITY, BY DEPARTMENT OR AGENCY, 1973-76

(\$ MILLIONS)

ACTIVITY	DEPT. OR AGENCY	1973-74		1974-75		1975-76	
		\$	%	\$	%	\$	%
SCIENTIFIC DATA COLLECTION	DOE	79.9	(73.9)	93.7	(74.4)	104.2	(74.9)
	EMR	22.1	(20.4)	25.4	(20.1)	27.2	(19.6)
	NHW	1.5	(1.4)	2.3	(1.8)	2.0	(1.4)
	HM	1.3	(1.2)	1.2	(1.0)	1.9	(1.4)
	AECL	1.1	(1.0)	1.2	(0.9)	1.2	(0.9)
	Other	2.3	(2.1)	2.3	(1.8)	2.5	(1.8)
	TOTAL	108.1	(100.0)	126.0	(100.0)	139.1	(100.0)
SCIENTIFIC INFORMATION	EMR	11.7	(25.2)	12.7	(23.7)	13.8	(23.0)
	DOE	9.3	(20.1)	11.4	(21.2)	12.9	(21.4)
	NRC	8.1	(17.4)	9.4	(17.6)	10.4	(17.2)
	CCA	6.6	(14.3)	7.1	(13.2)	8.0	(13.3)
	IDRC	1.9	(4.1)	2.8	(5.3)	3.2	(5.2)
	Other	8.8	(19.0)	10.2	(19.0)	12.0	(19.8)
	TOTAL	46.4	(100.0)	53.6	(100.0)	60.2	(100.0)
TESTING & STANDARD- IZATION	DND	12.9	(46.8)	14.5	(45.7)	16.1	(46.3)
	NRC	6.1	(22.2)	6.9	(21.8)	7.2	(20.5)
	NHW	2.3	(8.4)	3.6	(11.4)	5.0	(14.2)
	DOE	3.0	(11.0)	1.8	(5.6)	1.9	(5.6)
	CCA	0.9	(3.2)	1.2	(3.7)	1.6	(4.4)
	Other	2.3	(8.5)	3.8	(11.8)	5.1	(9.6)
	TOTAL	27.6	(100.0)	31.7	(100.0)	34.9	(100.0)
FEASIBILITY STUDIES	CIDA	11.3	(72.2)	17.4	(77.7)	19.1	(75.7)
	DND	1.6	(10.4)	1.7	(7.7)	1.7	(6.9)
	DSS	---	(---)	0.4	(1.9)	1.4	(5.7)
	DOE	0.8	(5.2)	1.1	(4.9)	1.1	(4.5)
	Other	1.9	(12.1)	1.8	(7.8)	1.9	(7.4)
	TOTAL	15.6	(100.0)	22.4	(100.0)	25.2	(100.0)
EDUCATIONAL SUPPORT	NRC	6.3	(45.7)	7.4	(46.0)	8.6	(48.5)
	CIDA	4.5	(30.3)	4.6	(28.4)	4.6	(25.7)
	DOE	1.4	(9.3)	1.8	(11.4)	2.0	(11.5)
	NRC	1.3	(8.5)	1.1	(7.0)	1.2	(6.8)
	Other	0.9	(6.3)	1.1	(7.1)	1.3	(7.6)
	TOTAL	15.0	(100.0)	16.0	(100.0)	17.7	(100.0)
ADMIN. OF EXTRAMURAL PROGRAMS	NRC	1.6	(68.3)	1.7	(62.6)	1.9	(59.4)
	IDRC	0.5	(21.9)	0.8	(27.3)	0.9	(26.9)
	Other	0.2	(9.8)	0.3	(10.1)	0.4	(13.8)
	TOTAL	2.3	(100.0)	2.8	(100.0)	3.2	(100.0)
TOTAL CURRENT FOR R.S.A.	DOE	94.5	(43.9)	109.8	(43.5)	122.1	(43.6)
	EMR	35.4	(16.4)	39.8	(15.8)	42.9	(15.3)
	NRC	23.6	(11.0)	26.5	(10.5)	29.1	(10.4)
	CIDA	15.8	(7.4)	22.0	(8.7)	23.6	(8.4)
	DND	15.8	(7.4)	17.7	(7.0)	19.5	(7.0)
	CCA	7.5	(3.5)	8.3	(3.3)	9.6	(3.4)
	Other	22.5	(10.5)	28.5	(11.3)	33.5	(11.9)
	TOTAL	215.2	(100.0)	252.5	(100.0)	280.3	(100.0)

3

Human Sciences

3.1 Total Scientific Activity Expenditures

TABLE 32

HUMAN SCIENCES

FEDERAL EXPENDITURES ON SCIENTIFIC ACTIVITIES
BY PERFORMER, 1973-76

(\$ MILLIONS)

PERFORMER	1973-74		1974-75		1975-76	
	\$	%	\$	%	\$	%
INTRAMURAL	174.6	(72.8)	219.9	(71.7)	250.4	(70.7)
UNIVERSITIES	28.6	(11.9)	34.6	(11.3)	40.2	(11.3)
FOREIGN	16.3	(6.8)	21.4	(7.0)	24.9	(7.0)
NON-PROFIT INSTITUTIONS	6.6	(2.8)	12.6	(4.1)	15.4	(4.3)
INDUSTRY	7.3	(3.0)	8.9	(2.9)	12.8	(3.6)
OTHER CANADIAN	6.3	(2.6)	9.2	(3.0)	10.5	(3.0)
TOTAL	239.7	(100.0)	306.7	(100.0)	354.0	(100.0)

The federal government remains the major performer of all human science activities that are funded by the government, maintaining close to 72% of the total over the period 1974-1976, although there is a slight decrease from year to year.

The next largest performer, the university sector, will receive \$40.2 million in 1976, accounting for 11.4% of the total, largely unchanged from previous years.

Non-profit institutions, foreign performers and industry will receive \$15.4 million, \$24.9 million and \$12.8 million, or an estimated 4.4%, 7.2% and 3.6% respectively, of the total human science budget. CIDA and the IDRC together provide 82% of the funds for scientific activities carried out abroad

Finally, provincial and municipal governments will receive \$10.5 million or 3% of the total.

TABLE 33

HUMAN SCIENCES

FEDERAL EXPENDITURES ON SCIENTIFIC ACTIVITIES
 BY PERFORMER, BY ACTIVITY, 1973-76
 (\$ MILLIONS)

PERFORMER	1973-74			1974-75			1975-76		
	R&D	RSA	TOTAL	R&D	RSA	TOTAL	R&D	RSA	TOTAL
INTRAMURAL	39.7	134.9	174.6	51.1	168.8	219.9	55.4	195.0	250.4
UNIVERSITIES	15.1	13.5	28.6	18.6	16.0	34.6	22.6	17.6	40.2
FOREIGN	9.6	6.7	16.3	12.9	8.5	21.4	15.5	9.4	24.9
NON-PROFIT INS	4.5	2.2	6.6	9.6	3.1	12.6	11.5	3.9	15.4
INDUSTRY	3.7	3.6	7.3	4.8	4.1	8.9	8.4	4.4	12.8
OTHER CANADIAN	3.3	3.0	6.3	6.2	3.0	9.2	7.1	3.4	10.5
TOTAL	75.8	163.9	239.7	103.1	203.5	306.7	120.5	233.6	354.0

Total expenditures on activities in the human sciences will reach \$354.0 million in 1976, an increase of \$47.3 million or 15.4%, in current dollars, over 1975. Between 1974 and 1975 this increase was 27.9%.

Research and development will receive a little more than one-third, or \$120.5 million, a rise of 16.9% over the previous year. Over this three-year period at least, research and development has consistently shown a higher growth rate than related scientific activities.

Related scientific activities, which include data collection, scientific information, and so on, will receive almost two-thirds of the total human sciences expenditures and 77.9% of the intramural expenditures or \$233.6 million and \$195.0 million respectively. These are increases of 14.8% and 15.5% over 1975.

TABLE 34

HUMAN SCIENCES

FEDERAL EXPENDITURES ON SCIENTIFIC ACTIVITIES
 BY DEPARTMENT OR AGENCY, BY ACTIVITY, 1973-76
 (\$ MILLIONS)

DEPARTMENT OR AGENCY	1973-74			1974-75			1975-76		
	R&D	RSA	TOTAL	R&D	RSA	TOTAL	R&D	RSA	TOTAL
SC	2.0	74.5	76.5	2.4	94.3	96.7	3.0	109.8	112.8
CC	9.5	13.4	22.9	10.9	14.3	25.2	13.4	15.4	28.8
NHW	7.3	6.1	13.4	13.7	8.5	22.2	15.3	8.9	24.2
IDRC	4.1	5.2	9.3	6.9	8.6	15.6	8.0	10.0	18.0
NL	---	7.6	7.6	---	8.6	8.6	---	10.5	10.5
CIDA	6.4	0.6	6.9	7.4	1.0	8.4	9.3	1.0	10.3
M&I	3.0	5.3	8.4	2.8	6.6	9.5	3.4	6.9	10.3
MUA	2.9	2.4	5.3	3.2	4.1	7.3	4.1	4.8	8.8
INA	4.0	1.5	5.5	4.9	1.8	6.7	5.8	2.3	8.1
CMHC	1.1	0.9	2.0	2.3	1.5	3.8	4.5	3.1	7.6
DOE	2.0	4.1	6.1	2.4	4.5	6.9	2.4	4.7	7.1
TBS	---	7.3	7.4	---	7.0	7.1	---	7.0	7.1
MOT	2.1	0.9	3.0	2.8	1.1	3.9	5.8	1.0	6.8
NM	2.9	1.7	4.6	3.4	2.0	5.5	3.9	2.3	6.2
PA	---	4.1	4.1	---	5.3	5.3	---	6.1	6.1
Other	28.4	28.5	56.9	39.8	34.3	74.1	41.4	39.9	81.4
TOTAL	75.8	163.9	239.7	103.1	203.5	306.7	120.5	233.6	354.0

TABLE 35

HUMAN SCIENCES

FEDERAL INTRAMURAL AND EXTRAMURAL EXPENDITURES ON SCIENTIFIC ACTIVITIES

BY DEPARTMENT OR AGENCY, 1973-76

(\$ MILLIONS)

DEPARTMENT OR AGENCY	1973-74			1974-75			1975-76		
	INTRA- MURAL	EXTRA- MURAL	TOTAL	INTRA- MURAL	EXTRA- MURAL	TOTAL	INTRA- MURAL	EXTRA- MURAL	TOTAL
SC	76.5	---	76.5	96.7	---	96.7	112.8	---	112.8
CC	1.4	21.4	22.9	1.7	23.5	25.2	2.1	26.7	28.8
NHW	3.6	9.8	13.4	6.2	15.9	22.2	7.4	16.8	24.2
IDRC	3.2	6.1	9.3	5.4	10.2	15.6	6.2	11.8	18.0
NL	7.6	---	7.6	8.6	---	8.6	10.5	---	10.5
CIDA	0.6	6.4	6.9	0.6	7.8	8.4	0.7	9.6	10.3
M&I	7.3	1.1	8.4	8.7	0.7	9.5	9.2	1.0	10.3
MUA	3.1	2.3	5.3	4.3	2.9	7.3	4.8	4.0	8.8
INA	4.6	1.0	5.5	5.6	1.2	6.7	6.6	1.5	8.1
CMHC	0.7	1.3	2.0	0.8	3.1	3.8	1.5	6.1	7.6
DOE	3.8	2.4	6.1	4.8	2.1	6.9	5.1	2.0	7.1
TBS	7.3	0.1	7.4	7.0	0.1	7.1	7.0	0.1	7.1
MOT	0.8	2.2	3.0	1.0	2.9	3.9	1.7	5.1	6.8
NM	4.6	---	4.6	5.5	---	5.5	6.2	---	6.2
PA	4.1	---	4.1	5.3	---	5.3	6.1	---	6.1
Other	45.6	11.2	56.9	57.8	16.3	74.1	62.4	18.9	81.4
TOTAL	174.6	65.1	239.7	219.9	86.7	306.7	250.4	103.6	354.0

Statistics Canada is by far the leading spender in the human sciences. With \$112.8 million, it will receive 31.9% of total expenditures.

The Canada Council, the Department of National Health and Welfare and the International Development Research Centre come second, with respectively \$28.8, \$24.2 and \$18.0 million or 8.1%, 6.8% and 5.1%.

Between two and three per cent of the total will be spent by each of National Library, the Canadian International Development Agency, the Department of Manpower and Immigration, the Ministry of State for Urban Affairs, the Department of Indian and Northern Affairs, Central Mortgage and Housing Corporation and the Treasury Board Secretariat.

Six agencies or departments will spend between one and two per cent, leaving the remaining 20% to be spent by "other".

There is considerable variation in growth rates shown by departments and agencies. For example the Treasury Board Secretariat has shown a decline in expenditures on activities in the human sciences over the last two years while the Privy Council Office, Central Mortgage and Housing Corporation and the Ministry of Transport have shown increases of over 100% during the same period.

All federal departments or agencies listed here can be classified as primarily intramural or primarily extramural spenders excepting the Ministry of State for Urban Affairs, which distributes its science budget more or less evenly between extramural and in-house expenditures.

Total intramural expenditures account for 70.7% of the total budget. However, if we subtract the share taken by Statistics Canada, an extreme case, we see that the distribution between intramural and extramural expenditures evens out to respectively \$137.6 million and \$103.6 million or 57% and 43%.

TABLE 36
HUMAN SCIENCES

FEDERAL EXPENDITURES ON SCIENTIFIC ACTIVITIES
BY PERFORMER, BY FUNDING DEPARTMENT OR AGENCY, 1973-76
(\$ MILLIONS)

PERFORMER	DEPT. OR AGENCY	1973-74		1974-75		1975-76		
		\$	%	\$	%	\$	%	
INTRAMURAL *****	SC	76.5	(43.8)	96.7	(44.0)	112.8	(45.0)	
	NL	7.6	(4.4)	8.6	(3.9)	10.5	(4.2)	
	M&I	7.3	(4.2)	8.7	(4.0)	9.2	(3.7)	
	NHW	3.6	(2.0)	6.2	(2.8)	7.4	(2.9)	
	TBS	7.3	(4.2)	7.0	(3.2)	7.0	(2.8)	
	INA	4.6	(2.6)	5.6	(2.5)	6.6	(2.6)	
	HM	4.6	(2.6)	5.5	(2.5)	6.2	(2.5)	
	IDRC	3.2	(1.8)	5.4	(2.4)	6.2	(2.5)	
	PA	4.1	(2.3)	5.3	(2.4)	6.1	(2.4)	
	PSC	5.0	(2.9)	7.6	(3.5)	5.9	(2.3)	
	Other	50.9	(29.1)	63.4	(28.8)	72.6	(29.0)	
	TOTAL	174.6	(100.0)	219.9	(100.0)	250.4	(100.0)	
	EXTRAMURAL ***** UNIVERSITIES	CC	17.9	(62.4)	19.9	(57.6)	23.0	(57.2)
		NHW	5.3	(18.4)	6.9	(20.1)	7.4	(18.3)
SoFS		1.6	(5.6)	2.1	(6.1)	2.5	(6.3)	
CMHC		0.1	(0.3)	0.6	(1.7)	1.2	(2.9)	
MOT		0.5	(1.9)	1.0	(2.7)	1.1	(2.7)	
Other		3.2	(11.3)	4.1	(11.7)	5.1	(12.6)	
TOTAL		28.6	(100.0)	34.6	(100.0)	40.2	(100.0)	
FOREIGN	IDRC	6.1	(37.4)	10.2	(47.6)	11.8	(47.3)	
	CIDA	6.0	(36.8)	6.9	(32.4)	9.7	(34.9)	
	CC	3.6	(21.8)	3.5	(16.6)	3.7	(15.0)	
	NHW	0.3	(1.6)	0.3	(1.6)	0.3	(1.3)	
	MSST	0.2	(0.9)	0.2	(0.8)	0.2	(0.7)	
	Other	0.2	(1.5)	0.2	(1.0)	0.2	(0.8)	
	TOTAL	16.3	(100.0)	21.4	(100.0)	24.9	(100.0)	
NON-PROFIT INSTITUTIONS	PCO	0.9	(14.3)	4.6	(36.2)	4.4	(28.4)	
	CMHC	0.9	(13.9)	2.1	(16.2)	4.0	(26.3)	
	NHW	3.5	(52.8)	4.1	(32.7)	4.0	(25.9)	
	MUA	0.5	(7.0)	1.1	(8.8)	2.0	(13.1)	
	Other	0.9	(12.0)	0.8	(6.1)	1.0	(6.3)	
	TOTAL	6.6	(100.0)	12.6	(100.0)	15.4	(100.0)	
INDUSTRY	MOT	1.2	(16.8)	1.7	(18.6)	3.4	(26.6)	
	CTC	1.0	(13.5)	1.0	(10.9)	1.1	(8.7)	
	CBC	0.8	(10.8)	0.9	(9.9)	1.0	(7.9)	
	M&I	0.6	(8.9)	0.6	(6.7)	0.8	(6.3)	
	Other	3.6	(50.0)	4.8	(53.8)	6.5	(50.5)	
	TOTAL	7.3	(100.0)	8.9	(100.0)	12.8	(100.0)	
OTHER CANADIAN	NHW	0.8	(12.3)	4.3	(47.2)	4.8	(45.7)	
	DOE	1.4	(22.2)	0.9	(9.9)	0.8	(7.4)	
	MUA	0.3	(5.1)	0.6	(6.5)	0.7	(6.6)	
	Jus	0.5	(7.5)	0.5	(5.7)	0.6	(6.2)	
	Other	3.3	(52.9)	2.8	(30.7)	3.6	(34.2)	
	TOTAL	6.3	(100.0)	9.2	(100.0)	10.5	(100.0)	

Expenditure on intramural scientific activities are expected to rise from \$219.9 million to \$250.4 million between 1975 and 1976, showing an increase of 13.9%.

Statistics Canada remains the largest performer of intramural research, with expenditures for human science activities that are expected to reach \$112.8 million in 1976, an increase of \$16.1 million or 16.6% over the previous year.

The Department of National Health and Welfare and the International Development Research Centre rank among the major performers of intramural research even though the majority of their funds are set aside for extramural expenditures.

Universities will be the largest extramural performers of activities in the human sciences in 1976. More than half of their funds (57.2%) will come from the Canada Council. Their allotted funds are expected to increase by 16.2%.

Support of foreign performers of activities in the human sciences will reach \$24.9 million in 1976, an increase of 16.3% over the previous year. Three agencies accounted for 97.2% of this support.

Non-profit institutions will receive \$15.4 million in 1976, an increase of 22.2% over 1975. Among all funders, budgets are expected to vary considerably compared to 1975. Variations were even more pronounced, however, between 1974 and 1975.

Expenditures for other performers are expected to reach \$23.2 million or an increase of 28.2% between 1975 and 1976. This includes Canadian industry (\$12.6 million), provincial and municipal governments (\$7.5 million) and \$3.0 million for other Canadian performers.

3.2 Research and Development Expenditures

TABLE 37

HUMAN SCIENCES

FEDERAL EXPENDITURES ON RESEARCH AND DEVELOPEMENT BY PERFORMER, 1973-76

(\$ MILLIONS)

PERFORMER	1973-74		1974-75		1975-76	
	\$	%	\$	%	\$	%
INTRAMURAL	39.7	(52.3)	51.1	(49.6)	55.4	(46.0)
UNIVERSITIES	15.1	(19.9)	18.6	(18.0)	22.6	(18.7)
FOREIGN	9.6	(12.7)	12.9	(12.5)	15.5	(12.9)
NON-PROFIT INSTITUTIONS	4.5	(5.9)	9.6	(9.3)	11.5	(9.6)
INDUSTRY	3.7	(4.8)	4.8	(4.7)	8.4	(7.0)
OTHER CANADIAN	3.3	(4.4)	6.2	(6.0)	7.1	(5.9)
TOTAL	75.8	(100.0)	103.1	(100.0)	120.5	(100.0)

Federal expenditures on research and development in the human sciences will reach \$120.5 million in 1976, an increase of \$17.4 million or 16.9% over 1975. This compares to a \$27.3 million increment or 36% between 1974 and 1975.

Intramural expenditures account for almost half of the research and development budget (46%) and will show an increase of \$4.3 million in 1976. Their share of the budget is decreasing, however; it was 52.3% in 1974 and 49.6% in 1975.

The university sector is the next largest performer in research and development, claiming \$22.6 million or 18.7% of the total. Its share has remained stable during the last few years.

Non-profit institutions will receive \$11.5 million in 1976, showing the fastest growth rate.

Foreign performers are expected to receive nearly 13% or \$15.5 million for research and development. Their share remains stable.

Industry's share has increased to 7% in 1976 from about 5% in the preceding two years. In absolute figures, their expenditures have more than doubled from \$3.7 million to \$8.4 million in the last year.

Provincial and municipal governments will receive an estimated \$7.1 million from the federal government for research and development in the human sciences.

TABLE 38

HUMAN SCIENCES

FEDERAL EXPENDITURES ON RESEARCH AND DEVELOPEMENT
 BY TYPE OF FUNDING, 1973-76
 (\$ MILLIONS)

TYPE OF FUNDING	1973-74		1974-75		1975-76	
	\$	%	\$	%	\$	%
CURRENT	74.1	(97.7)	101.2	(98.2)	118.2	(98.1)
IN-HOUSE R&D	32.3	(42.6)	43.0	(41.7)	45.7	(38.0)
R&D GRANTS	25.1	(33.0)	38.9	(37.7)	45.7	(38.0)
R&D CONTRACTS	8.7	(11.4)	10.1	(9.8)	15.0	(12.5)
RESEARCH FELLOWSHIPS	4.0	(5.3)	4.8	(4.7)	5.8	(4.8)
ADMIN. OF EXTRAMURAL PROGRAMS	4.0	(5.3)	4.4	(4.2)	5.9	(4.9)
CAPITAL EXPENDITURES	1.7	(2.3)	1.9	(1.8)	2.2	(1.9)
TOTAL	75.8	(100.0)	103.1	(100.0)	120.5	(100.0)

TABLE 39

HUMAN SCIENCES

FEDERAL INTRAMURAL AND EXTRAMURAL EXPENDITURES ON RESEARCH AND DEVELOPMENT
 BY DEPARTMENT OR AGENCY, 1973-76
 (\$ MILLIONS)

DEPARTMENT OR AGENCY	1973-74			1974-75			1975-76		
	INTRA- MURAL	EXTRA- MURAL	TOTAL	INTRA- MURAL	EXTRA- MURAL	TOTAL	INTRA- MURAL	EXTRA- MURAL	TOTAL
NHW	1.8	5.5	7.3	3.4	10.2	13.7	4.1	11.2	15.3
CC	0.6	8.9	9.5	0.8	10.1	10.9	1.0	12.5	13.4
CIDA	0.3	6.1	6.4	0.3	7.1	7.4	0.3	9.0	9.3
IDRC	0.8	3.3	4.1	1.3	5.6	6.9	1.5	6.5	8.0
MOT	0.7	1.4	2.1	0.8	2.0	2.8	1.3	4.5	5.8
INA	3.4	0.6	4.0	4.2	0.7	4.9	4.9	0.9	5.8
PCO	0.2	0.6	0.7	1.6	4.1	5.7	1.6	3.8	5.4
CMHC	0.5	0.6	1.1	0.5	1.8	2.3	1.0	3.6	4.5
ECC	3.6	0.2	3.9	4.1	0.1	4.3	4.3	0.1	4.4
MUA	1.4	1.5	2.9	1.1	2.0	3.2	1.4	2.7	4.1
PSC	4.3	---	4.3	6.6	---	6.6	3.9	0.2	4.1
Jus	2.3	0.7	3.0	2.7	0.9	3.6	2.7	1.2	4.0
NM	2.9	---	2.9	3.4	---	3.4	3.9	---	3.9
M&I	2.0	1.1	3.0	2.1	0.7	2.8	2.4	1.0	3.4
SC	2.0	---	2.0	2.4	---	2.4	3.0	---	3.0
Other	13.0	5.6	18.6	15.6	6.5	22.2	18.1	8.1	26.1
TOTAL	39.7	36.2	75.8	51.1	52.0	103.1	55.4	65.1	120.5

The leading spender for research and development will be National Health and Welfare with an expected budget of \$15.3 million. The major part of this will be expended extramurally. Between 1974 and 1976, the Department's expenditures have doubled, going from \$7.3 million to \$15.3 million. This is mainly because funds for R & D related to the income security and social welfare programs have tripled.

The Canada Council, after being the largest spender on research and development in 1974, ranked second in 1975 and will continue to do so in 1976, with a budget of \$13.4 million. Most of this amount (93%) will go to extramural research.

Statistics Canada, the largest spender on scientific activities in the human sciences, ranks fifteenth when we consider expenditures for research and development alone with \$3.0 million or 2.6% of its departmental total of \$112.8 million.

Extramural activities are expected to receive 54.1% of the total R & D budget of \$120.5 million while intramural activities receive the remaining 45.9%. The portion devoted to extramural activities has increased slightly over the last three years from 47.7% in 1974 and 50.4% in 1975.

TABLE 40

HUMAN SCIENCES

FEDERAL EXPENDITURES ON RESEARCH AND DEVELOPMENT
 BY PERFORMER, BY FUNDING DEPARTMENT OR AGENCY, 1973-76
 (\$ MILLIONS)

PERFORMER	DEPT. OR AGENCY	1973-74		1974-75		1975-76	
		\$	%	\$	%	\$	%
INTRAMURAL *****	INA	3.4	(8.6)	4.2	(8.3)	4.9	(8.9)
	ECC	3.6	(9.1)	4.1	(8.1)	4.3	(7.8)
	NHW	1.8	(4.6)	3.4	(6.7)	4.1	(7.4)
	NM	2.9	(7.3)	3.4	(6.7)	3.9	(7.0)
	PSC	4.3	(10.9)	6.6	(12.8)	3.9	(7.0)
	SC	2.0	(5.1)	2.4	(4.8)	3.0	(5.5)
	Jus	2.3	(5.7)	2.7	(5.3)	2.7	(5.0)
	BofC	1.9	(4.7)	2.2	(4.4)	2.7	(4.8)
	M&I	2.0	(5.0)	2.1	(4.1)	2.4	(4.2)
	Lab	1.6	(4.0)	1.7	(3.2)	2.1	(3.7)
	Other	13.8	(34.9)	18.2	(35.6)	21.5	(38.8)
	TOTAL		39.7	(100.0)	51.1	(100.0)	55.4
EXTRAMURAL ***** UNIVERSITIES	CC	8.9	(58.8)	10.1	(54.6)	12.5	(55.2)
	NHW	2.8	(18.7)	4.1	(21.9)	4.5	(20.1)
	MOT	0.4	(2.6)	0.7	(3.8)	0.8	(3.7)
	SofS	0.6	(3.8)	0.7	(3.6)	0.8	(3.6)
	SG	0.1	(0.4)	0.3	(1.4)	0.6	(2.7)
	Other	2.4	(15.8)	2.7	(14.6)	3.3	(14.6)
TOTAL		15.1	(100.0)	18.6	(100.0)	22.6	(100.0)
FOREIGN	CIDA	6.0	(62.3)	6.9	(53.8)	8.7	(56.0)
	IDEC	3.3	(34.8)	5.6	(43.4)	6.5	(41.7)
	Other	0.3	(2.9)	0.4	(2.8)	0.4	(2.3)
TOTAL		9.6	(100.0)	12.9	(100.0)	15.5	(100.0)
NON-PROFIT INSTITUTIONS	PCO	0.6	(13.0)	4.1	(42.6)	3.8	(32.8)
	CMHC	0.6	(12.5)	1.5	(15.7)	3.0	(25.6)
	NHW	2.2	(49.2)	2.5	(25.7)	2.4	(20.7)
	Other	1.1	(25.3)	1.5	(16.0)	2.4	(20.8)
TOTAL		4.5	(100.0)	9.6	(100.0)	11.5	(100.0)
INDUSTRY	MOT	0.6	(16.6)	1.1	(22.1)	3.2	(37.5)
	M&I	0.6	(17.5)	0.6	(12.4)	0.8	(9.5)
	CTC	0.5	(14.5)	0.6	(12.0)	0.7	(8.0)
	UIC	0.1	(3.8)	0.4	(8.9)	0.4	(5.1)
	Other	1.8	(47.6)	2.1	(44.5)	3.4	(39.9)
TOTAL		3.7	(100.0)	4.8	(100.0)	8.4	(100.0)
OTHER CANADIAN	NHW	0.4	(10.7)	3.5	(56.0)	3.8	(53.8)
	Jus	0.5	(14.2)	0.5	(8.5)	0.6	(9.1)
	MOT	0.4	(12.5)	0.2	(3.7)	0.5	(7.5)
	DREE	0.7	(20.8)	0.5	(8.0)	0.5	(7.2)
	Other	1.4	(41.7)	1.5	(23.8)	1.6	(22.5)
TOTAL		3.3	(100.0)	6.2	(100.0)	7.1	(100.0)

TABLE 41

HUMAN SCIENCES

FEDERAL SUPPORT OF RESEARCH AND DEVELOPMENT
IN CANADIAN UNIVERSITIES AND NON-PROFIT INSTITUTIONS
BY DEPARTMENT OR AGENCY, 1973-76

(\$ MILLIONS)

DEPARTMENT OR AGENCY	1973-74		1974-75		1975-76	
	GRANTS	CONTRACTS	GRANTS	CONTRACTS	GRANTS	CONTRACTS
CC	5.5	---	6.4	---	7.9	---
NHW	4.6	--	5.8	0.1	5.9	0.3
PCO	0.5	0.1	4.0	0.1	3.5	0.3
CMHC	0.6	---	1.7	---	3.3	---
MJA	0.5	0.4	1.0	0.2	1.7	0.1
SofS	0.5	0.2	0.5	0.3	0.6	0.3
MOT	0.3	0.1	0.5	0.2	0.6	0.2
Other	1.3	1.2	1.6	1.3	1.6	2.2
TOTAL	13.7	2.0	21.4	2.1	25.1	3.4

TABLE 42

HUMAN SCIENCES

FEDERAL SUPPORT OF RESEARCH AND DEVELOPMENT
IN CANADIAN INDUSTRY
BY DEPARTMENT OR AGENCY, 1973-76

(\$ MILLIONS)

DEPARTMENT OR AGENCY	1973-74		1974-75		1975-76	
	GRANTS	CONTRACTS	GRANTS	CONTRACTS	GRANTS	CONTRACTS
NOT	---	0.6	---	1.1	---	3.2
M&I	---	0.6	---	0.6	---	0.8
CTC	---	0.5	---	0.6	---	0.7
UIC	---	0.1	---	0.4	---	0.4
IYC	---	0.1	---	0.3	---	0.4
Other	--	1.7	0.1	1.8	0.2	2.8
TOTAL	---	3.7	0.1	4.7	0.2	8.2

3.3 Related Scientific Activity Expenditures

TABLE 43

HUMAN SCIENCES

FEDERAL EXPENDITURES ON RELATED SCIENTIFIC ACTIVITIES
BY PERFORMER, 1973-76

(\$ MILLIONS)

PERFORMER	1973-74		1974-75		1975-76	
	\$	%	\$	%	\$	%
INTRAMURAL	134.9	(82.3)	168.8	(82.9)	195.0	(83.5)
UNIVERSITIES	13.5	(8.3)	16.0	(7.9)	17.6	(7.5)
FOREIGN	6.7	(4.1)	8.5	(4.2)	9.4	(4.0)
INDUSTRY	3.6	(2.2)	4.1	(2.0)	4.4	(1.9)
NON-PROFIT INSTITUTIONS	2.2	(1.3)	3.1	(1.5)	3.9	(1.7)
OTHER CANADIAN	3.0	(1.8)	3.0	(1.5)	3.4	(1.4)
TOTAL	163.9	(100.0)	203.5	(100.0)	233.6	(100.0)

Federal expenditures on related scientific activities are expected to equal \$233.6 million in 1976, a \$30.1 million increase over 1975. This is less than the \$39.6 million rise between 1974 and 1975.

The largest performance sector, intramural, is slowly increasing its share of the total, from 82.3% to 83.5%. Intramural performers of related scientific activities are expected to receive \$195.0 million in 1976. Statistics Canada is expected to spend \$109.8 million of this total.

Canadian universities have seen their share of the total shrink over the last three years, from 8.3% to 7.9% and then to 7.5%. They are expected to receive \$17.6 million in 1976.

The remaining 1976 funds for related scientific activities will go to foreign performers, industry, non-profit institutions and other Canadian performers. Together they will share an estimated \$21.1 million, with respective increase of 10.6%, 7.3%, 25.8% and 13.3% over the previous year.

TABLE 44

HUMAN SCIENCES

FEDERAL EXPENDITURES ON RELATED SCIENTIFIC ACTIVITIES
BY ACTIVITY, 1973-76

(\$ MILLIONS)

ACTIVITY	1973-74		1974-75		1975-76	
	\$	%	\$	%	\$	%
CURRENT	162.4	(99.1)	200.7	(98.6)	232.3	(99.4)
DATA COLLECTION	88.3	(53.9)	108.9	(53.5)	128.6	(55.1)
OPERATIONS & POLICY STUDIES	29.8	(18.2)	37.0	(18.2)	40.5	(17.3)
INFORMATION SERVICES	24.6	(15.0)	30.6	(15.0)	37.1	(15.9)
EDUCATIONAL SUPPORT	14.2	(8.6)	16.7	(8.2)	17.8	(7.6)
ECONOMIC & FEASIBILITY STUDIES	3.4	(2.1)	4.5	(2.2)	4.8	(2.1)
ADMIN. OF EXTRAMURAL PROGRAMS	2.2	(1.3)	3.0	(1.5)	3.4	(1.5)
CAPITAL	1.5	(0.9)	2.8	(1.4)	1.3	(0.6)
TOTAL	163.9	(100.0)	203.5	(100.0)	233.6	(100.0)

TABLE 45

HUMAN SCIENCES

FEDERAL INTRAMURAL AND EXTRAMURAL EXPENDITURES ON RELATED SCIENTIFIC ACTIVITIES

BY DEPARTMENT OR AGENCY, 1973-76

(\$ MILLIONS)

DEPARTMENT OR AGENCY	1973-74			1974-75			1975-76		
	INTRA- MURAL	EXTRA- MURAL	TOTAL	INTRA- MURAL	EXTRA- MURAL	TOTAL	INTRA- MURAL	EXTRA- MURAL	TOTAL
SC	74.5	---	74.5	94.3	---	94.3	109.8	---	109.8
CC	0.8	12.6	13.4	0.9	13.4	14.3	1.2	14.2	15.4
NL	7.6	---	7.6	8.6	---	8.6	10.5	---	10.5
IDRC	2.4	2.7	5.2	4.0	4.6	8.6	4.7	5.3	10.0
NHW	1.7	4.4	6.1	2.8	5.7	8.5	3.2	5.6	8.9
TBS	7.3	---	7.3	7.0	---	7.0	7.0	---	7.0
M&I	5.3	---	5.3	6.6	---	6.6	6.9	---	6.9
PA	4.1	---	4.1	5.3	---	5.3	6.1	---	6.1
Fin	5.0	---	5.0	5.0	---	5.0	5.7	---	5.7
MUA	1.7	0.7	2.4	3.2	0.9	4.1	3.4	1.3	4.8
DOE	2.4	1.7	4.1	3.1	1.4	4.5	3.4	1.4	4.7
SofS	1.1	1.6	2.7	1.3	2.2	3.5	1.8	2.2	4.1
EA	3.1	0.1	3.2	3.1	0.1	3.2	3.8	0.1	3.9
MSST	1.8	0.1	1.9	2.8	0.2	2.9	3.1	0.2	3.3
CMHC	0.2	0.7	0.9	0.3	1.3	1.5	0.5	2.5	3.1
Other	16.0	4.3	20.4	20.5	5.1	25.6	24.0	5.6	29.6
TOTAL	134.9	29.0	163.9	168.8	34.7	203.5	195.0	38.6	233.6

Statistics Canada will be the largest spender on related scientific activities in 1976. It will receive an estimated \$109.8 million or 47% of the total. These funds will be spent only on intramural activities.

Canada Council will have the highest extramural expenditures on related scientific activities, an estimated \$14.2 million. Although its budget represents only 6.6% of the total federal expenditures on related scientific activities, it is expected to spend 36.8% of the \$38.6 million set aside for extramural expenditures.

Together, Statistics Canada and Canada Council will share an estimated 53.6% of federal expenditures on related scientific activities, almost unchanged from the two previous years.

If Statistics Canada is disregarded, the National Library is the largest spender on intramural related scientific activities, spending an estimated \$10.5 million, well ahead of the Treasury Board Secretariat which spends a third less at \$7.0 million.

TABLE 46

HUMAN SCIENCES

FEDERAL CURRENT EXPENDITURES ON RELATED SCIENTIFIC ACTIVITIES

BY ACTIVITY, BY DEPARTMENT OR AGENCY, 1973-76

(\$ MILLIONS)

ACTIVITY	DEPT. OR AGENCY	1973-74		1974-75		1975-76	
		\$	%	\$	%	\$	%
DATA COLLECTION	SC	72.2	(81.8)	90.4	(82.9)	107.3	(83.4)
	EA	3.1	(3.5)	3.1	(2.9)	3.8	(2.9)
	CMHC	0.5	(0.6)	1.0	(0.9)	2.0	(1.5)
	DOE	2.2	(2.4)	1.8	(1.7)	2.0	(1.5)
	CDC	1.4	(1.6)	1.5	(1.4)	1.7	(1.3)
	NHM	1.7	(1.9)	2.3	(2.1)	1.7	(1.3)
	Other	7.2	(8.1)	8.8	(8.1)	10.2	(7.9)
	TOTAL	88.3	(100.0)	108.9	(100.0)	128.6	(100.0)
OPERATIONS & POLICY STUDIES	TBS	6.4	(21.3)	6.1	(16.5)	6.0	(14.9)
	M&I	5.0	(16.9)	4.5	(12.2)	4.6	(11.3)
	Fin	3.7	(12.5)	3.7	(10.1)	4.2	(10.4)
	MUA	2.0	(6.7)	3.5	(9.5)	4.0	(9.9)
	NHM	0.7	(2.2)	2.0	(5.4)	2.4	(6.0)
	MSST	1.1	(3.7)	1.8	(5.0)	2.2	(5.4)
	Other	11.0	(36.7)	15.3	(41.4)	17.0	(42.1)
	TOTAL	29.8	(100.0)	37.0	(100.0)	40.5	(100.0)
INFORMATION SERVICES	NL	7.5	(30.3)	8.5	(27.8)	10.5	(28.2)
	IDRC	3.9	(16.0)	6.6	(21.5)	7.6	(20.5)
	PA	4.0	(16.1)	5.1	(16.7)	6.1	(16.4)
	CC	2.6	(10.7)	3.0	(10.0)	3.4	(9.0)
	DOE	1.5	(6.1)	1.5	(4.9)	1.8	(4.8)
	NHM	1.0	(4.0)	1.0	(3.4)	1.7	(4.6)
	Other	4.1	(16.7)	4.8	(15.7)	6.1	(16.5)
	TOTAL	24.6	(100.0)	30.6	(100.0)	37.1	(100.0)
EDUCATIONAL SUPPORT	CC	9.9	(70.0)	10.1	(60.3)	10.6	(59.4)
	NHM	1.5	(10.6)	1.6	(9.7)	1.6	(8.8)
	SofS	1.0	(6.8)	1.2	(7.2)	1.5	(8.3)
	M&I	-	(-)	1.2	(7.3)	1.2	(6.6)
	NM	0.6	(4.1)	0.7	(4.3)	0.8	(4.7)
	Other	1.1	(7.9)	1.9	(11.2)	2.2	(12.2)
	TOTAL	14.2	(100.0)	16.7	(100.0)	17.8	(100.0)
	ECONOMIC & FEASIBILITY STUDIES	FFRB	0.5	(14.1)	1.5	(32.8)	1.5
NHM		1.0	(28.0)	1.3	(28.6)	1.3	(26.4)
INA		0.3	(8.2)	0.5	(12.2)	0.5	(11.0)
SC		0.4	(10.9)	0.2	(4.4)	0.4	(9.1)
MOT		-	(-)	0.4	(9.6)	0.4	(8.0)
Other		1.3	(38.8)	0.6	(12.4)	0.7	(14.3)
TOTAL		3.4	(100.0)	4.5	(100.0)	4.8	(100.0)
ADMIN. OF EXTRAMURAL PROGRAMS		IDRC	1.0	(46.0)	1.7	(54.7)	1.9
	CC	0.7	(34.5)	0.8	(27.5)	1.0	(30.9)
	Other	0.4	(19.5)	0.5	(17.8)	0.4	(12.6)
	TOTAL	2.2	(100.0)	3.0	(100.0)	3.4	(100.0)
TOTAL CURRENT FOR R.S.A.	SC	73.5	(45.2)	92.0	(45.8)	108.9	(46.9)
	CC	13.4	(8.2)	14.3	(7.1)	15.4	(6.6)
	NL	7.5	(4.6)	8.5	(4.2)	10.5	(4.5)
	IDRC	5.2	(3.2)	8.6	(4.3)	10.0	(4.3)
	NHM	6.1	(3.7)	8.5	(4.2)	8.9	(3.8)
	TBS	7.3	(4.5)	7.0	(3.5)	7.0	(3.0)
	Other	49.6	(30.5)	61.8	(30.8)	71.7	(30.9)
	TOTAL	162.4	(100.0)	200.7	(100.0)	232.3	(100.0)



APPENDIX Technical Notes

These technical notes are intended to assist the reader in using the data presented in this document. In addition to providing the definitions which were used in gathering the data, this chapter includes some examples and illustrations for purposes of clarification.

Appendix 4 comprises the following sections:

- I SCOPE AND LIMITATIONS OF DATA
- II DEFINITIONS
 - A Scientific Activities
 - B Performers
 - C Expenditure Coverage

I Scope and limitations of data

Each year Statistics Canada mails questionnaires to all federal government departments and agencies performing or funding scientific activities, with separate surveys being conducted for the natural and human sciences. These departments receive assistance from Statistics Canada to ensure consistency of response. Also, as members of the Interdepartmental Committee on Scientific Expenditures, they may review and amend the survey definitions and content according to the experience of the respondents and the changing requirements for data.

Data included in this publication were reported by 58 federal departments and agencies who fund and/or perform scientific activities:

Department of Agriculture
Atomic Energy of Canada Limited
Atomic Energy Control Board
Bank of Canada
Canada Council
Canadian Arsenals Limited
Canadian Broadcasting Corporation
Canadian Dairy Commission
Canadian International Development Agency
Canadian Livestock Feed Board
Canadian Patents and Development Limited
Canadian Radio-Television Commission
Canadian Transport Commission
Central Mortgage and Housing Corporation
Commissioner of Official Languages
Department of Communications
Department of Consumer and Corporate Affairs
Economic Council of Canada
Department of Energy, Mines and Resources
Department of the Environment
Department of External Affairs
Department of Finance
Food Prices Review Board
Department of Indian and Northern Affairs

Information Canada
Department of Industry, Trade and Commerce
International Development Research Centre
Department of Justice
Department of Manpower and Immigration
Medical Research Council
Department of Labour
National Capital Commission
Department of National Defence
National Film Board
National Harbours Board
Department of National Health and Welfare
National Library
National Museums
National Research Council
Department of National Revenue
Post Office Department
Privy Council Office
Public Archives
Public Service Commission
Public Works Department
Department of Regional Economic Expansion
Saint Lawrence Seaway Authority
Science Council of Canada
Ministry of State for Science and Technology
Secretary of State Department
Ministry of the Solicitor General
Statistics Canada
Ministry of Transport
Treasury Board Secretariat
Ministry of State for Urban Affairs
Department of Supply and Service
Unemployment Insurance Commission
Department of Veterans Affairs

Some of the above cannot be properly defined as federal departments or agencies, however, they are federal organizations entirely funded by the federal government, their inclusion more accurately reflects the total of scientific activities conducted by the federal government.

The reader is advised that the official establishment of the Department of the Environment in June, 1971, altered the level of resources allocated to several other departments and agencies during this and subsequent fiscal years: added to the responsibilities of the former Department of Fisheries and Forestry were INA's Canadian Wildlife Service, MOT's Meteorological Service, the Water Resources Program of EMR, the Air Pollution Control and Public Health Engineering Divisions of NHW, and DREE's Canada Land Inventory.

Expenditures on scientific activities in the natural and human sciences are reported to Statistics Canada on a three-year cycle based on the estimates submitted annually to Treasury Board by each department and agency. Data for 1974 and previous years are considered as actual expenditures since they reflect transactions of completed government fiscal years. Amounts reported for 1975 and 1976 are estimates and are subject to further government decisions — the effects of which will be reflected in future reports. For this reason, estimates for the last two years of the previous report have been updated here to reflect the budgetary decisions and departmental

revisions in the classification of scientific activities made since its publication.

Since most departments and agencies do not maintain records of their activities corresponding to the classification adhered to in this report, it is necessary for them to estimate their expenditures and manpower allocated to each item within these classifications. The precision of these estimates is expected to vary from department to department and even within the programs of one department: for example, an agency such as the National Research Council, which is wholly engaged in scientific activities, should experience less difficulty in categorizing its scientific activities than, perhaps, the Department of Indian and Northern Affairs whose scientific resources are part of larger and broader programs. Concern on this score, however, should be minimized by the fact that departments and agencies have participated in Statistics Canada surveys on federal activities in the natural sciences since 1959, and in human science surveys since 1970; further, Statistics Canada staff assisted all respondents in the interpretation of concepts and definitions, and evaluated responses for consistency and accuracy.

II Definitions

The following definitions reflect the existence of two separate Statistics Canada surveys on federal scientific activities: one on the natural sciences and a second on the human sciences. These definitions are as presented in the guidelines accompanying the Statistics Canada survey questionnaires.

A. SCIENTIFIC ACTIVITIES

(a) Natural Sciences:

The natural sciences encompass all the disciplines grouped under the life, physical, environmental, mathematical and engineering sciences.

The *life sciences* include the biological sciences, which deal with the origin, development, structure, function and interaction of living things, and the clinical medical sciences, which are concerned with the use of scientific knowledge for the identification, treatment and cure of disease.

The *physical sciences* are concerned with the understanding of the material universe and its phenomena. They include the subfields of astronomy, chemistry, physics and other physical sciences.

The *environmental sciences* are concerned with the properties of the solar system that affect man's survival and welfare. They include the fields of

atmospheric sciences, geological sciences, oceanography, and other environmental sciences.

The *mathematical sciences* employ logical reasoning with the aid of symbols and are concerned with the development of methods of operation employing such symbols.

The *engineering sciences* are concerned with studies directed towards developing engineering principles or towards making specific scientific principles usable in engineering practice.

RESEARCH AND EXPERIMENTAL DEVELOPMENT is considered as creative work undertaken on a systematic basis to increase the stock of scientific and technical knowledge and to use it in new applications. The central characteristic of R&D is an appreciable element of novelty — new knowledge (new information integrated into existing hypotheses; new hypotheses derived from new facts, the re-evaluation of known data) or new products or processes are sought. The routine gathering of information to fulfil administrative or operational requirements is not included.

The concept of research and experimental development covers a wide range of activities — from that of the independent researcher trying to satisfy his personal curiosity, to that of the multi-disciplinary team constructing a prototype. Most

often it is classified under three categories: basic research, applied research, and experimental development. While it is difficult to consistently apply these concepts to the real work situation, it is felt that they serve as useful general indications of the type, or mix of types, of R&D being carried out.

Basic research is original investigation undertaken in order to gain new scientific knowledge with the primary purpose of contributing to the conceptual development of science. Its motivation is to increase the accumulated, objective and systematic knowledge of the inherent properties and interactions of matter, space, energy, natural phenomena and biosystems.

In free basic research the original impulse is scientific curiosity. Oriented basic research is directed towards the definition and solution of fundamental technical or scientific problems in a general area of interest. The difference between the two types of basic research is mainly that the impulse for the latter is primarily technological need.

Basic research yields new hypotheses, theories, and general laws. The resulting information is usually non-negotiable and freely published and circulated. Results often affect a broad field of science and may have several ultimate applications.

Applied research is original investigation undertaken to gain new scientific knowledge with the primary purpose of applying such knowledge to the solution of practical or technical problems. It is required to determine possible uses for the findings of basic research and to select the appropriate method of achieving some specific predetermined objective.

The results of applied research are usually valid for a limited number of products, operations, methods, and systems. Ideas are developed into operational forms, and the knowledge or information derived is often patented.

Experimental development is the application of scientific knowledge to produce specific new materials, devices, products and processes or to make technically significant improvement to existing ones. It consists of systematic work whose objective, drawing on existing knowledge, is to gather all the information necessary to provide the technical elements of a decision to produce new materials, devices, and products, or to implement new processes and systems for commercial sale or operational utilization. It includes pilot plant and prototype design and testing.

RELATED SCIENTIFIC ACTIVITIES are closely linked to R&D and include scientific data collec-

tion, scientific information, testing and standardization, feasibility studies and scholarship programs.

Scientific data collection is the gathering, processing, collating and analyzing of data on natural phenomena. These data result from surveys, from routine laboratory analyses or from compilations of operating records. The collection of specimens for museums, zoological or botanical displays is also included. Data collected primarily for internal administrative purposes are excluded.

Data collected as part of a research project are included in the research activity. Similarly, the development of significantly new techniques for data collection are considered as R&D.

Examples of scientific data collection include routine geological, hydrographic, oceanographic and topographical surveys; maintenance of meteorological records; wildlife and fishery surveys.

Scientific information is that information and knowledge acquired as a result of scientific activities. The costs attributable to this activity are those for the operation of scientific and technical libraries and for the dissemination of information or knowledge by means of scientific and technical journals, books, newsletters, computer tapes, exhibits, films, scientific conferences and symposia.

Testing and standardization is work directed towards the establishment of national standards for materials, devices, products and processes, the calibration of secondary standards and non-routine quality testing, which is separately identifiable from R&D. The development of new measures for standards, or of new methods of measuring or testing, is R&D.

Feasibility studies are technical investigations of proposed innovative engineering projects to provide necessary additional information for decisions on implementation.

Education support consists of grants to individuals or institutions intended to support the education (beyond the Bachelor's degree level) of students in technology and the natural sciences. Grants intended primarily to support the research activities of individuals are considered as R&D (either R&D grants or research fellowships).

(b) Human Sciences:

The human sciences encompass the disciplines generally referred to as the "social sciences and humanities"; no distinction is made between the two groups of disciplines since it is not clear that such a breakdown is possible or desirable for statistical purposes. Thus, the human sciences include all disciplines involving the study of human

actions and conditions and the social, economic and institutional mechanisms affecting them. This includes the sciences of anthropology, economics, human geography, law and sociology, political science and the social aspects of architecture, design, psychology and linguistics. In addition, applied social science fields such as public and business administration, commerce, communications, criminology, demography, agricultural economics, industrial relations, social work, and urban and regional studies, are included.

Two groups of activities are surveyed in the human sciences: research and development and related scientific activities, the latter being related to and generally complementing or extending R&D.

RESEARCH AND DEVELOPMENT in the context of the human sciences is creative work undertaken on a systematic basis towards the acquisition of new knowledge about man, his actions and his institutions, and the application of this knowledge in new ways. 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. To be classified as research and development, projects must generally involve a substantial element of novelty, uncertainty and innovation, have a well-defined project design, and result in a written report of results and procedures.

Research and Development covers a wide range of activities. Two categories of R&D have been defined and although, in many cases, it will be difficult to separate R&D, these categories are intended to serve as general indicators.

Research is original investigation undertaken on a systematic basis to gain new knowledge. Examples include: the investigation of the socio-economic backgrounds of different categories of criminals; and investigation of the influence of corporate structure on successful and unsuccessful technological innovation.

Experimental development is the application of knowledge for the creation of specific new products, processes and operational models, systems or organizations, or for the significant improvement of existing ones. The development of new teaching methods and equipment, and the development of a demographic model for population forecasts are two examples of experimental development.

RELATED SCIENTIFIC ACTIVITIES complement or extend research and development activities. Five such activities are defined below:

General purpose data collection is the routine gathering, processing, collating, analysis and pub-

lication 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. Examples are the quinquennial censuses, and surveys of employment and production.

Information services include all services intended to provide information which is of potential use in any other scientific activity. They include library, archival, abstraction, translation and specialized information retrieval services; referral, advisory and clearing house services; conferences, publications and films for general scientific information dissemination.

Education, (in the limited context of this survey) consists of grants to individuals or institutions intended to support the advanced education (beyond the Bachelor's degree level) of students in the human sciences. Grants intended to support the research activities of individuals are reported as R&D (either R&D grants or research fellowships, as appropriate).

Economic and feasibility studies are investigations of the socio-economic characteristics and implications of specific situations (e.g. study of the viability of a petro-chemical complex in the Prairie region, cost-benefit study of a proposed paper manufacturing center in Manitoba). Such studies are generally limited to a specific problem and involve the application of established human science techniques and methodologies.

Operations and policy studies involve 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, such as conducted by Ministries of State. This includes the work of the government royal commissions and task forces, except when R&D projects can be identified and costed.

B. PERFORMERS

The performer is defined by the type of institution where the scientific activity is conducted. The basic distinction is between intramural and extramural performance.

(a) *Intramural performers* are the federal departments and agencies that conduct scientific work in their own establishments (in-house) using their own personnel. Included in intramural performance are expenditures on equipment and supplies that are

used within these establishments. The costs of administering intramural and extramural scientific programs are also included.

(b) *Extramural performers* are identified as:

Canadian industry: business and government enterprises. Included are public utilities, government owned firms, and non-profit institutions and associations mainly serving industry and not controlled by another institution (e.g. Pulp and Paper Research Institute). Industrial research institutes affiliated with a university belong in the Canadian universities sector.

Canadian universities: include affiliated institutes owned, administered or staffed by universities.

Canadian non-profit institutions: charitable foundations, voluntary health organizations, scientific and professional societies, and other organizations not established to earn profits. Non-profit institutions mainly serving or controlled by another sector are included in that sector.

Provincial and municipal governments: departments and agencies of these governments.

Other Canadian performers: provincial research councils and foundations, and individuals not working in any other sector.

Foreign: all foreign governments, companies (including foreign subsidiaries of Canadian firms), non-resident foreign nationals and Canadians studying or teaching abroad.

C. EXPENDITURE COVERAGE

Expenditures reported for scientific activities reflect total costs, that is, they include the direct costs of scientific programs and non-program ("indirect") costs; the latter include the value of services supplied by other departments, accommodation provided by the reporting agency and administration program costs attributable to scientific activities; they apply only to the intramural activities of departments and agencies.

Expenditures are reported as either current or capital. Current expenditures are, in terms of the standard object, and in government accounts, expenditures on: personnel; transportation and communication; information; professional and special services; rentals; purchased repair and upkeep; utilities, materials and supplies; transfer payments; and "all other expenditures". Capital expenditures are expenditures on construction and acquisition of land, buildings and equipment, and construction and acquisition of machinery and equipment; they are recorded for intramural performance only.

Expenditure data cover the federal government fiscal year beginning April 1 of one year and ending March 31 of the following year; thus, fiscal year 1976 began April 1, 1975 and will end March 31, 1976.

