CHAPTER IX

EXTRAMURAL SUPPORT FOR RESEARCH AND DEVELOPMENT PROJECTS BY CENTRAL GOVERNMENT

The purpose of the extramural research and development (R&D) project funding is to build general research capability in the country and provide special encouragement to scientists to pursue a research career. The National Science and Technology Management Information System (NSTMIS) division of the Department of Science and Technology has been maintaining a database on all extramural R&D projects funded by various Central Government Departments/Agencies as a part of the Management Information System since 1985. The division also brings out annually a directory of extramural R&D projects approved by various agencies during each financial year.

Almost all the Central S&T Departments such as Department of Atomic Energy (DAE), Department of Biotechnology (DBT), Department of Coal (DOC), Ministry of Communication & Information Technology (MOCIT) formerly Ministry of Information Technology, Department of Ocean Development (DOD), Department of Science & Technology (DST), Ministry of Environment and Forests (MOEF), Ministry of Food Processing Industries (MFPI), Ministry of Water Resources (MOWR), Ministry of Social Justice & Empowerment (MOSJE) formerly Ministry of Welfare (MOW), All India Council for Technical Education (AICTE), Central Board of Irrigation and Power (CBIP), Council of Scientific and Industrial Research (CSIR), Defence Research and Development Organisation (DRDO), Indian Council of Agricultural Research (ICAR), Indian Council of Medical Research (ICMR), Indian Space Research Organisation (ISRO) under Department of Space, University Grants Commission (UGC) have specified schemes to sponsor R&D projects. Indian Meteorological Department (IMD) and Steel Authority of India Ltd (SAIL) have not funded any EMR projects during 2000-01 to 2002-03. Central Government Departments/Agencies operate number of EMR Schemes under which they invite time bound projects from individual scientists in Universities/Colleges, Institutes of National Importance, National Laboratories, state level institutions, Public Sector Undertakings and other registered bodies.

The extramural R&D funding by Central S&T departments/agencies has increased at a compound annual growth rate of 15.04 per cent during the period 1993-94 to 2002-03. 2718 new projects costing

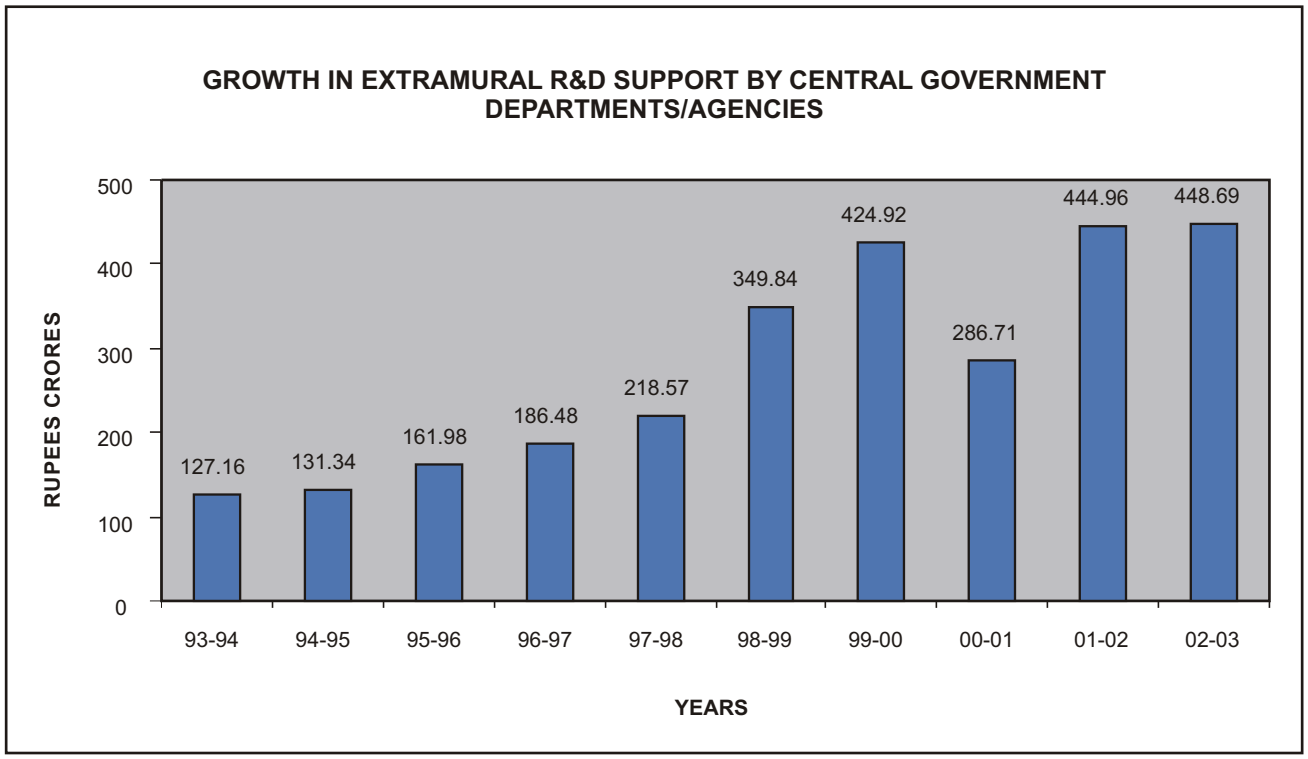


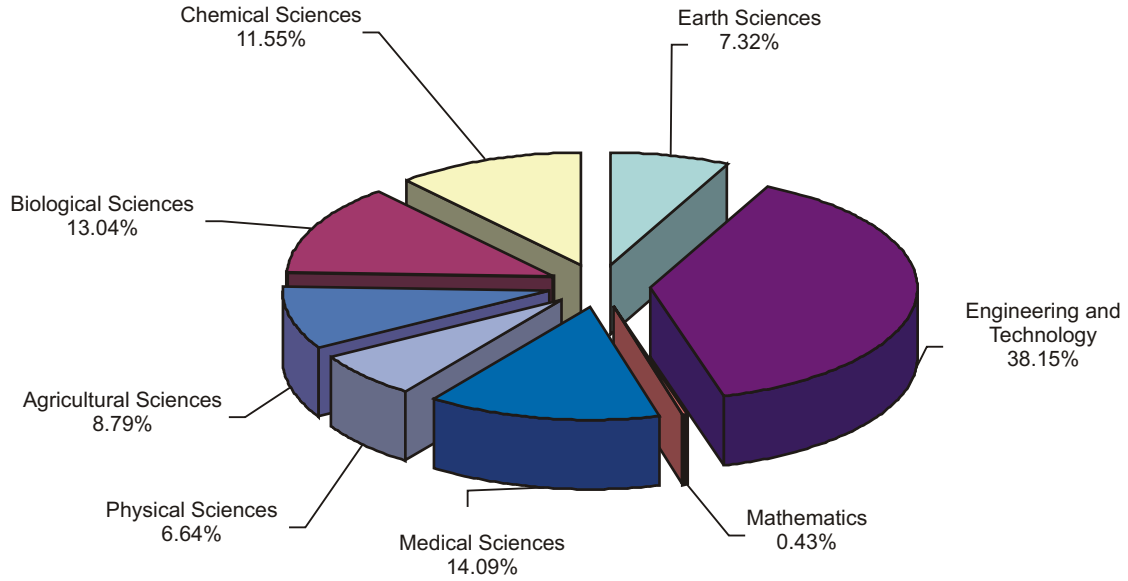
Table 9.1

AGENCY-WISE SUPPORT TO EXTRAMURAL R&D PROJECTS

(Rs. Lakhs)

Agency	2000-01		2001-02		2002-03	
	Number of Projects	Approved Cost	Number of Projects	Approved Cost	Number of Projects	Approved Cost
DAE	57	1182.48	60	3294.91	104	1708.48
DBT	135	3322.47	240	10396.53	124	4138.14
DOC	13	462.54	12	714.04	10	616.07
DOD	12	127.35	28	194.58	15	1511.13
DST	464	8382.36	525	11585.25	813	17656.25
DSIR	14	841.00	20	806.19	14	563.32
DOSHE	50	385.00	51	450.00	134	1168.00
MOCIT (formerly MIT)	39	2049.41	59	4200.71	26	1947.04
MOEF	44	794.37	63	754.13	40	527.43
MFPI	N.A.	N.A.	N.A.	N.A.	16	552.53
MNES	34	950.60	20	475.17	21	313.28
MOSJE (formerly MOW)	2	3.00	18	155.92	10	87.41
MOWR	3	58.11	1	57.80	Nil	Nil
AICTE	147	1048.18	194	1388.88	211	1757.36
CSIR	206	1612.46	122	900.34	304	2416.82
DRDO	64	1055.40	99	2512.82	103	2258.12
ICAR	176	1923.83	134	1484.81	162	2161.98
ICMR	209	3114.45	239	3606.53	194	3615.04
ISRO	32	264.71	39	271.48	43	396.98
UGC	308	1093.29	380	1245.90	374	1473.62
Total	2009	28671.00	2304	44495.99	2718	44869.00

SUBJECT AREA WISE R&D SUPPORT DURING THE YEAR 2002-03



1 Crore = 10 Million

TOTAL APPROVED COST : RS. 448.69 CRORES

Rs.448.69 crores were approved for funding by 19 responding agencies during the year 2002-03, as shown in Table 9.1. This table provides agency-wise information on number of extramural R&D projects approved and their cost during the years 2000-01, 2001-02 and 2002-03. It may be noted that the approved cost given in the tables in this chapter is the cost of the newly approved projects for the entire duration of the project period and not the actual expenditure during the year.

It may be worth mentioning here that Department of Science & Technology provided the highest extramural funding of Rs.176.56 crores (39%) followed by Department of Biotechnology and Indian Council of Medical Research with Rs.41.38 crores (9%) and Rs.36.15 crores (8%) respectively during 2002-03. The lowest support of Rs.0.87 crores for extramural R&D projects was by Ministry of Social Justice & Empowerment. The share of number of projects supported by the Department of Science & Technology was also highest (30%) when compared to other sponsoring agencies.

Subject area-wise number of projects and approved cost during 2000-01, 2001-02 and 2002-03 are given in Table 9.2. Amongst the eight subject areas, Engineering & Technology, Medical Sciences, Biological Sciences and Chemical Sciences were the main recipients of R&D support during 2002-03. The engineering and technology received maximum support

Table 9.2

SUBJECT AREA-WISE DISTRIBUTION OF EXTRAMURAL R&D PROJECTS

(Rs. Crores)

Subject	2000-01		2001-02		2002-03	
	Number of Projects	Approved Cost	Number of Projects	Approved Cost	Number of Projects	Approved Cost
Agriculture	234	32.53	255	49.85	260	39.43
Engg. & Technology	430	68.67	501	123.78	765	171.17
Medical Sciences	438	68.76	445	90.59	397	63.21
NATURAL SCIENCES						
Biological Sciences	215	28.23	325	59.21	389	58.52
Chemical Sciences	265	34.22	291	42.64	371	51.81
Earth Sciences	134	21.40	195	29.81	241	32.83
Mathematics	74	4.81	76	3.39	45	1.95
Physical Sciences	219	28.09	216	45.69	250	29.77
Total	2009	286.71	2304	444.96	2718	448.69

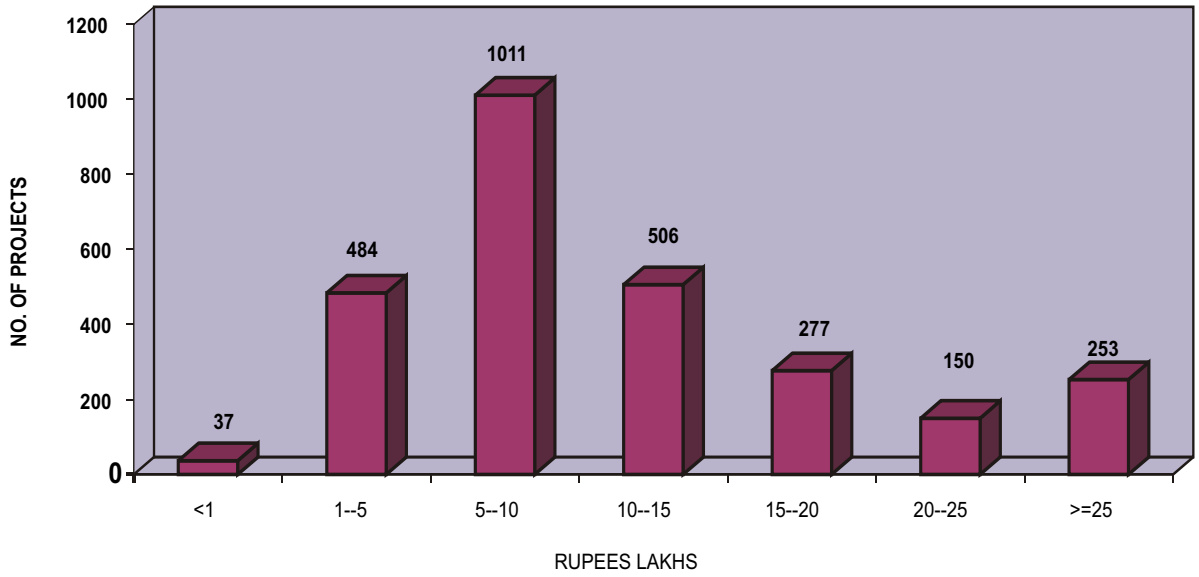
Table 9.3

DISTRIBUTION OF EXTRAMURAL R&D PROJECTS BY TYPES OF INSTITUTES

(Rs. Crores)

Institute Type	2000-01		2001-02		2002-03	
	Number of Projects	Approved Cost	Number of Projects	Approved Cost	Number of Projects	Approved Cost
Universities/Colleges	1025	103.22	1175	124.59	1305	139.10
Deemed Universities	141	17.20	161	26.70	190	58.33
Institutes of National Importance	261	37.27	277	62.29	435	67.30
National Laboratories	381	80.28	438	169.09	543	148.06
Others	201	48.74	253	62.29	245	35.90
Total	2009	286.71	2304	444.96	2718	448.69

DISTRIBUTION OF R&D PROJECTS BY APPROVED COST DURING THE YEAR 2002-03



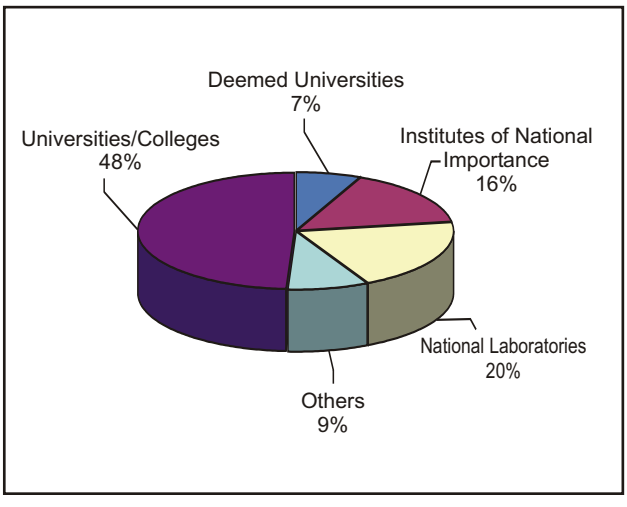
1 Crore = 10 Million

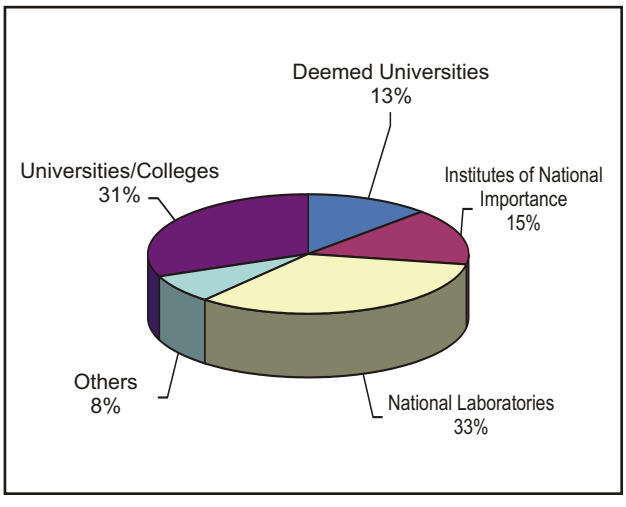
1 Lakh = 1,00,000

R&D PROJECTS BY TYPES OF INSTITUTES DURING THE YEAR 2002-2003

Total No of Projects: 2718

Total Approved Cost: Rs. 448.69 Crores





in terms of number of projects (28%), as well as funding (38%), Medical Sciences and Biological Sciences accounted for (14.6%), (14%) of the projects and (14.3%), (13%) of the total funding respectively. This was followed by Chemical Sciences with 13.6% of R&D projects and 11.6% of total funding. The extramural support to Mathematics was the lowest (0.4%).

The institutions receiving support from the funding agencies have been classified into 5 categories for convenience of analysis: Universities/Colleges, Deemed Universities, Institutes of National Importance, National Laboratories and other Institutions under State Governments, Voluntary Agencies, Registered Societies etc. (which are not covered in any of the above types).

The pattern of extramural R&D funding during 2000-01, 2001-02 and 2002-03 based on the above classification is given in Table 9.3. The number of R&D projects supported to academic sector (comprising Universities/Colleges, Deemed Universities and Institutes of National Importance) has hovered around 71% of the total projects during 2000-03 period. The national laboratories and the institutions in the 'Others' category accounted for about 19% and 10% of the projects respectively during the same period. The

Table 9.4

STATE-WISE SUPPORT TO EXTRAMURAL R&D PROJECTS

(Rs. Lakhs)

State	2000-01		2001-02		2002-03	
	Number of Projects	Approved Cost	Number of Projects	Approved Cost	Number of Projects	Approved Cost
Andaman & Nicobar	3	49.87	4	158.43	2	42.72
Andhra Pradesh	134	1722.36	167	4892.64	175	2793.81
Arunachal Pradesh	9	159.71	7	98.67	13	101.99
Assam	42	549.89	38	573.72	62	773.66
Bihar	15	139.48	10	87.56	9	237.73
Chandigarh	64	828.57	75	1808.50	70	930.19
Chhattisgarh	1	15.96	8	79.33	8	84.72
Delhi	223	4227.12	290	6763.73	251	3982.89
Goa	9	96.56	4	47.00	9	138.77
Gujarat	50	561.21	63	667.47	73	898.39
Haryana	32	211.89	36	431.08	44	436.02
Himachal Pradesh	18	185.39	34	617.99	19	426.60
Jammu & Kashmir	13	229.14	24	293.66	16	246.86
Jharkhand	35	475.83	38	932.71	33	1632.97
Karnataka	176	3257.03	222	3921.25	278	7573.53
Kerala	73	1067.50	84	1697.28	101	1865.79
Madhya Pradesh	51	689.44	41	905.64	44	412.98
Maharashtra	203	3420.00	236	4367.55	266	5785.16
Manipur	8	141.94	4	71.15	6	69.17
Meghalaya	7	79.09	6	78.01	9	199.01
Mizoram	2	32.63	4	42.65	2	27.03
Nagaland	2	18.39	4	60.98	3	45.15
Orissa	34	312.87	39	382.56	38	392.75
Pondicherry	9	121.86	12	119.01	21	178.80
Punjab	46	403.98	26	326.87	58	720.47
Rajasthan	35	512.60	47	700.41	53	503.77
Sikkim	1	32.20	3	44.42	2	25.66
Tamil Nadu	209	3207.73	225	5373.67	298	3359.15
Tripura	Nil	Nil	3	27.28	4	49.91
Uttar Pradesh	226	2745.10	242	3273.47	294	3836.16
Uttaranchal	45	297.37	73	1179.69	118	1950.88
West Bengal	234	2878.29	235	4471.61	339	5146.31
Total	2009	28671.00	2304	44495.99	2718	44869.00

Note : States and Union Territories not receiving EMR support are not mentioned.

extramural R&D funding support to the academic sector, however, was not comparable with its share of number of projects. It accounted for 59% of the total funding during 2002-03.

Table 9.4 gives information on state-wise support to extramural R&D projects. During 2002-03, 2718 projects were approved for funding by various sponsoring agencies. Nearly, 70% of the projects were received by the Institutes located in seven states viz. Maharashtra, Uttar Pradesh, West Bengal, Tamil Nadu, Karnataka, Delhi and Andhra Pradesh accounted for about 72% of total funding.

In addition to extramural mode, R&D projects are also carried out by the National Laboratories, Universities/Colleges, Public and Private Sector Industries and other research organisations out of the annual grants received by them. This is known as in-house or intramural R&D.

The expenditure on intramural projects constitutes the major component of the national R&D expenditure. The total national R&D expenditure reported in this document comprises both intramural and extramural R&D projects. Share of extramural R&D expenditure in national R&D expenditure for 2002-03 was 2.5%.

To sum up, the salient features are as under:

The extramural R&D support has shown an increasing trend over the past ten years with a compound annual growth rate of 15.04%.

The Department of Science & Technology (DST) (39%) and the Department of Biotechnology (DBT) (9%) were the two departments playing a major role in extramural R&D funding.

R&D support to the academic sector through extramural projects was 59% during 2002-03.

Support to national laboratories was of the order of 33% during 2002-03.

The share of extramural R&D funding in total National R&D expenditure for 2002-03 was 2.5%.