

## ABOUT THE DIRECTORY

### INTRODUCTION

**Centre for Human and Organisational Resource Development (CHORD)** division of the Department of Science & Technology (DST) has been compiling information annually on extramural (also called sponsored) R&D projects since 1990-91 in order to exchange information on Research and Development (R&D) projects with different interest groups. This compiled information is published as an annual Directory of Extramural Research and Development projects approved for funding by various agencies during the year.

The task of collecting, compiling, analyzing and publishing the directory for the year 2016-17 was sponsored by the Department of Science & Technology to Manpower Management Centre (MMC), New Delhi. The present directory, 27<sup>th</sup> in the series, gives details of 4711 sponsored R&D projects approved during the year 2016-17 by 17 Central Government Ministries/Departments/Agencies.

The following Ministries/Departments/Agencies of the Central Government have furnished the list of projects approved by them:

- 1 Council of Scientific and Industrial Research (CSIR)
- 2 Defence Research and Development Organisation (DRDO)
- 3 Department of Atomic Energy (DAE)
- 4 Department of Bio-Technology (DBT)
- 5 Department of Science and Technology (DST)
- 6 Department of Scientific and Industrial Research (DSIR)
- 7 Indian Council of Agricultural Research (ICAR)
- 8 Indian Council of Medical Research (ICMR)
- 9 Indian Space Research Organisation (ISRO)
- 10 Ministry of AYUSH (AYUSH)
- 11 Ministry of Earth Sciences (MOES)
- 12 Ministry of Electronics & Information Technology (MEITY)
- 13 Ministry of Environment, Forests & Climate Change (MOEFCC)
- 14 Ministry of New & Renewable Energy (MNRE)
- 15 Ministry of Power (MOP)
- 16 Ministry of Steel (MOS)
- 17 Petroleum Conservation Research Association (PCRA)

**Note:**

Ministry of Social Justice and Empowerment has been removed from the list as they do not conduct projects related to R&D in S&T. The addresses of all above mentioned agencies are given in **Annexure-1**.

## LIMITATIONS

Manpower Management Centre (MMC) collects data from number of Divisions in the Central Scientific Ministries/Departments/Agencies which promote Extramural R&D projects as per the standardized questionnaire designed by the CHORD division, DST. Each division has several schemes under which R&D projects are sanctioned and hence it opens up multiple contact points for MMC to interact and thereby it's a time consuming process. Often shortage of staff at these Ministries/Departments/Agencies leads to delay of data dissemination and hence MMC has to follow-up multiple times over recurring months to get the data. Despite repeated efforts and personal visits of Research Team of MMC, quite a few funding agencies took months to provide the data. Moreover, data accuracy is also challenge as data provided by several funding agencies was in abbreviated form such as acronym of Institution, name, missing designations, incomplete addresses/PIN of the Institutes, no details regarding duration of the projects & subject-areas etc. Cross-validation through organization website's was also difficult as most updated data was not available on the website. The Research Team of MMC had to put in extra efforts to complete this information by communicating several times with the funding agencies. As the listing of projects is based on the inputs received from the responding agencies, it is presumed that the information furnished by them was complete. The project cost refers to the initial approved cost of the project for the initial approved duration of the project. It is quite possible that some of the projects mentioned in this directory may not be R&D Projects in the strict sense of the term.

Despite these limitations, a lot of support was extended by Dr. Parveen Arora and Shri P K Arya and their team at DST to enable and conduct LPAC meetings, exchange ideas and fulfillment of any gaps for ensuring data collection. It is sincerely hoped that this directory will serve as a useful source of information for scientists, technologists, funding agencies, implementing institutions, planners and policy makers.

## ORGANISATION OF THE DIRECTORY

The projects have been listed in the directory by major subject area-wise. Under each major subject area, the projects have been arranged by funding agency-wise and also scheme-wise within funding agency. Under each scheme, the projects have been arranged alphabetically as per the title of the project. For each project, the information included is record number, title of the project, name of the funding agency/scheme, name and address of the investigator/institute, approved cost of the project and the duration of the project. The third column of the directory gives the name of funding agency and scheme. For example, this has been given as "DAE-BRNS". Here "DAE" is the name of the funding agency i.e. Department of Atomic Energy and "BRNS" is the acronym used for the name of the scheme under which the project was approved. For explanation of abbreviations/acronym for the agencies and schemes, the readers are advised to see **Table 1 & 2** under the Section "**BRIEF ANALYSIS**". For a quick reference, Index pages on Principal Investigator and Institute etc., have been provided in the directory at the end. The addresses of the funding agencies have been given at **Annexure-1**. **Annexure-2** gives institute-wise extramural R&D support committed during the year 2016-17. A brief analysis on the pattern of funding during the year 2016-17 is given in the following paragraphs.

## BRIEF ANALYSIS

As shown in **Table 1**, 4711 new extramural R&D projects costing **Rs. 2454.02 Crore** were approved by 17 responding agencies during the year 2016-17. While Scheme-wise support to these extramural R&D projects by responding agencies is given in **Table 2**.

**Table 1**

### **Agency-wise Support to Extramural R&D Projects approved during 2016-17**

S. No.	Department/Ministry/Agency	No. of Projects		Total Approved Cost (Rs. Crore)	
		No.	%age	Rs.	%age
<b>1</b>	Council of Scientific and Industrial Research (CSIR)	231	4.90	45.25	1.84
<b>2</b>	Defence Research and Development Organisation (DRDO)	120	2.55	232.73	9.48
<b>3</b>	Department of Atomic Energy (DAE)	208	4.42	58.86	2.40
<b>4</b>	Department of Bio-Technology (DBT)	578	12.27	347.41	14.16
<b>5</b>	Department of Science and Technology (DST)	3156	66.99	1535.74	62.58
<b>6</b>	Department of Scientific and Industrial Research (DSIR)	32	0.68	13.47	0.55
<b>7</b>	Indian Council of Agricultural Research (ICAR)	41	0.87	6.34	0.26
<b>8</b>	Indian Council of Medical Research (ICMR)	121	2.57	37.08	1.51
<b>9</b>	Indian Space Research Organisation (ISRO)	96	2.04	18.02	0.73
<b>10</b>	Ministry of AYUSH (AYUSH)	16	0.34	7.60	0.31
<b>11</b>	Ministry of Earth Sciences (MOES)	25	0.53	9.71	0.40
<b>12</b>	Ministry of Electronics & Information Technology (MEITY)	11	0.23	26.08	1.06
<b>13</b>	Ministry of Environment, Forests & Climate Change (MOEFCC)	30	0.64	16.03	0.65
<b>14</b>	Ministry of New & Renewable Energy (MNRE)	34	0.72	90.36	3.68
<b>15</b>	Ministry of Power (MOP)	8	0.17	2.71	0.11
<b>16</b>	Ministry of Steel (MOS)	1	0.02	5.82	0.24
<b>17</b>	Petroleum Conservation Research Association (PCRA)	3	0.06	0.81	0.03
<b>Total</b>		<b>4711</b>	<b>100</b>	<b>2454.02</b>	<b>100</b>

#### **Note:**

- Nil Reports for the year 2016-17 were provided by the Department/Ministry/Agencies namely: Ministry of Coal, Ministry of Water Resources, University Grants Commission.
- Nil Reports for the year 2016-17 were provided by the some of the schemes by select Department/Ministry/Agencies namely:  
All India Council for Technical Education-RPS, Department of Scientific & Industrial Research-TDDP, Defence Research Development Organisation-LSRB, Department of Science & Technology-ICPS, Indian Council of Agricultural Research-Crop Sc. & Hort. Sc. & Fisheries, Indian Council of Medical Research – CAR, Ministry of Environment Forests & Climate Change-NRCP & NNRMS, Ministry of Electronics & Information Technology-TDC.
- The addresses of all the above agencies are given in **Annexure-1**.

**Table 2**  
**Scheme-wise Support to Extramural R & D Projects approved during 2016-17**

<b>S. No.</b>	<b>Department/Ministry/Agency</b>	<b>Number of Projects</b>	<b>Total Approved Cost (Rs. Crore)</b>
	<b>-Schemes</b>		
<b>1</b>	<b>Council of Scientific and Industrial Research (CSIR)</b>		
	- Emeritus Scientist (ES)	46	10.39
	- General Scheme (GS)	185	34.85
<b>2</b>	<b>Defence Research and Development Organisation (DRDO)</b>		
	- Aeronautical Research & Development Board (AR&DB)	65	16.97
	- Grants-in-aid Scheme (GIA)	43	212.43
	- Naval Research Board (NRB)	12	3.32
<b>3</b>	<b>Department of Atomic Energy (DAE)</b>		
	- Board for Research in Nuclear Sciences (BRNS)	208	58.86
<b>4</b>	<b>Department of Bio-Technology (DBT)</b>		
	- Research & Development (R&D)	578	347.41
<b>5</b>	<b>Department of Science and Technology (DST)</b>		
	- Advanced Manufacturing Technologies (AMT)	38	41.49
	- Advanced Ultra Super Critical Technologies (AUSCT)	2	98.07
	- Building Energy Efficiency (BEE)	37	28.09
	- Drugs & Pharmaceutical Research Programme (DPRP)	14	32.33
	- Innovation, Technology Development & Deployment (ITDD)	18	15.57
	- Instrument Development Programme (IDP)	27	14.74
	- Intensification of Research in High Priority Areas (IRHPA)	3	21.83
	- International Bilateral Cooperation (IBC)	140	34.28
	- International Multilateral & Regional Cooperation (IMRC)	5	3.47
	- Materials for Energy Storage (MES)	18	15.57
	- Mega Facilities for Basic Research Programme (MEGASC)	1	20.77
	- Methanol Projects (MNP)	7	17.12
	- Nano-Mission (N-M)	51	47.11
	- National Council for Science & Technology Communication (NCSTC)	162	27.64
	- Natural Resources Data Management System (NRDMS)	18	3.06
	- Scheduled Caste Sub Plan (SCSP)	14	4.15
	- Scheme for Young Scientists & Technologists (SYST)	24	4.93
	- Science & Engineering Research Board - Early Career Research (SERB-ECR)	804	255.17
	- Science & Engineering Research Board - Empowerment & Equity (SERB-EMEQ)	221	70.22
	- Science & Engineering Research Board - Engineering (SERB-EP)	140	58.33
	- Science & Engineering Research Board - Science (SERB-SC)	818	319.45
	- Science & Technology for Women (WS)	45	16.33
	- Science & Technology Institutional & Human Capacity Building	30	93.50



(STIHCB)		
- Solar Energy (SE)	48	35.59
- SPLICE - Climate Change Programme (SPLICE-CCP)	60	87.07
- Technology Intervention for Mountain Ecosystem: Livelihood Enhancement through Action Research & Networking programme in North-Western Himalayas (TIME-LEARN)	30	7.39
- Technology Interventions for Addressing Societal Needs (TIASN)	10	4.61
- Technology Interventions for Disabled & Elderly Programme (TIDE)	12	5.11
- Technology Interventions for Empowerment of Tribal Population (TITE)	4	2.63
- Waste Management Technologies (WMT)	17	30.82
- Water Technology Initiative Programme (WTI)	83	55.21
- Women Scientist Scheme - A (WOS-A)	255	64.06
<b>6 Department of Scientific and Industrial Research (DSIR)</b>		
- Patent Acquisition, Collaborative Research & Technology Development (PACE)	8	11.14
- Promoting Innovations in Individuals, Start-ups & MSMEs (PRISM)	24	2.33
<b>7 Indian Council of Agricultural Research (ICAR)</b>		
- Agricultural Education - Extramural Fund (AGEDU)	23	1.09
- Agricultural Engineering - Extramural Fund (AGENG)	2	0.54
- Agricultural Extension - Extramural Fund (AGEXT)	13	2.08
- Natural Resource Management - Extramural Fund (NRM)	3	2.63
<b>8 Indian Council of Medical Research (ICMR)</b>		
- Ad-hoc (ADHOC)	85	27.94
- Task Force (TF)	36	9.14
<b>9 Indian Space Research Organisation (ISRO)</b>		
- Research Sponsored (RESPOND)	47	9.35
- Space Science Promotion (SSP)	49	8.67
<b>10 Ministry of AYUSH (AYUSH)</b>		
- Ayurveda - Extramural Research (AYURVEDA)	4	0.99
- Homoeopathy - Extramural Research (HOMOEOPATH)	3	1.53
- Siddha - Extramural Research (SIDDHA)	3	2.00
- Unani - Extramural Research (UNANI)	5	2.55
- Yoga & Naturopathy - Extramural Research (YOGA)	1	0.54
<b>11 Ministry of Earth Sciences (MOES)</b>		
- R&D in Earth & Atmospheric Sciences (R&DEAS)	25	9.71
<b>12 Ministry of Electronics &amp; Information Technology (MEITY)</b>		
- Research & Development (R&D)	11	26.08
<b>13 Ministry of Environment, Forests &amp; Climate Change (MOEFCC)</b>		
- Assistance to Botanic Garden Scheme (ABGS)	11	8.58
- Ecosystem Research Programme (ECRP)	9	3.31
- Environment Research Programme (ENVRP)	9	3.58
- Research Project in Socio Economic issues of the Environment (RPSE)	1	0.56
<b>14 Ministry of New &amp; Renewable Energy (MNRE)</b>		

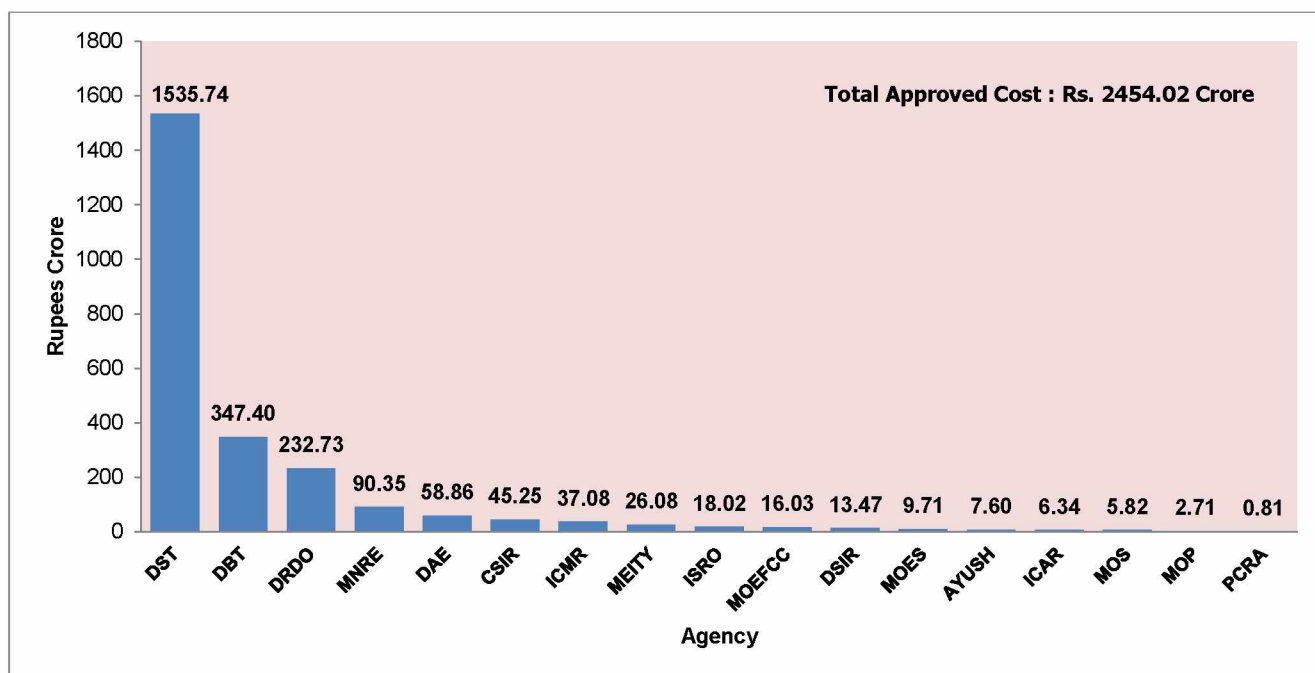
- Research, Development & Demonstration (RDD)	34	90.36
<b>15 Ministry of Power (MOP)</b>		
- Research Scheme on Power (RSOP)	8	2.71
<b>16 Ministry of Steel (MOS)</b>		
- Steel Development Fund (SDF)	1	5.82
<b>17 Petroleum Conservation Research Association (PCRA)</b>		
- Research & Development (R&D)	3	0.81
<b>Total</b>	<b>4711</b>	<b>2454.02</b>

## FUNDING AGENCY-WISE ANALYSIS

**Figure 1** shows the pattern of funding by various Central Government Extramural R&D sponsoring agencies. It may be seen that the Department of Science & Technology (DST) accounted for the maximum support of Rs. 1535.74 Crore (62.58%) followed by Department of Biotechnology with Rs. 347.40 Crore (14.16%). The two departments namely Department of Science & Technology (DST) & Department of Biotechnology (DBT) together played major role in extramural R&D funding in the country by contributing more than 76.74% of the total extramural R&D support at national level.

The other agencies that funded large sanctions have been the Defence Research and Development Organisation (DRDO) with Rs. 232.73 (9.48%) followed by Ministry of New & Renewable Energy (MNRE) at Rs. 90.35 Crore (3.68%). Support of 58.86 Crore (2.40%) was provided by Department of Atomic Energy (DAE). The Council of Scientific and Industrial Research (CSIR) provided funding of Rs. 45.25 Crore (1.84%).

### R&D SUPPORT BY CENTRAL S&T AGENCIES DURING 2016-17



**Figure 1**

## SUBJECT AREA-WISE ANALYSIS

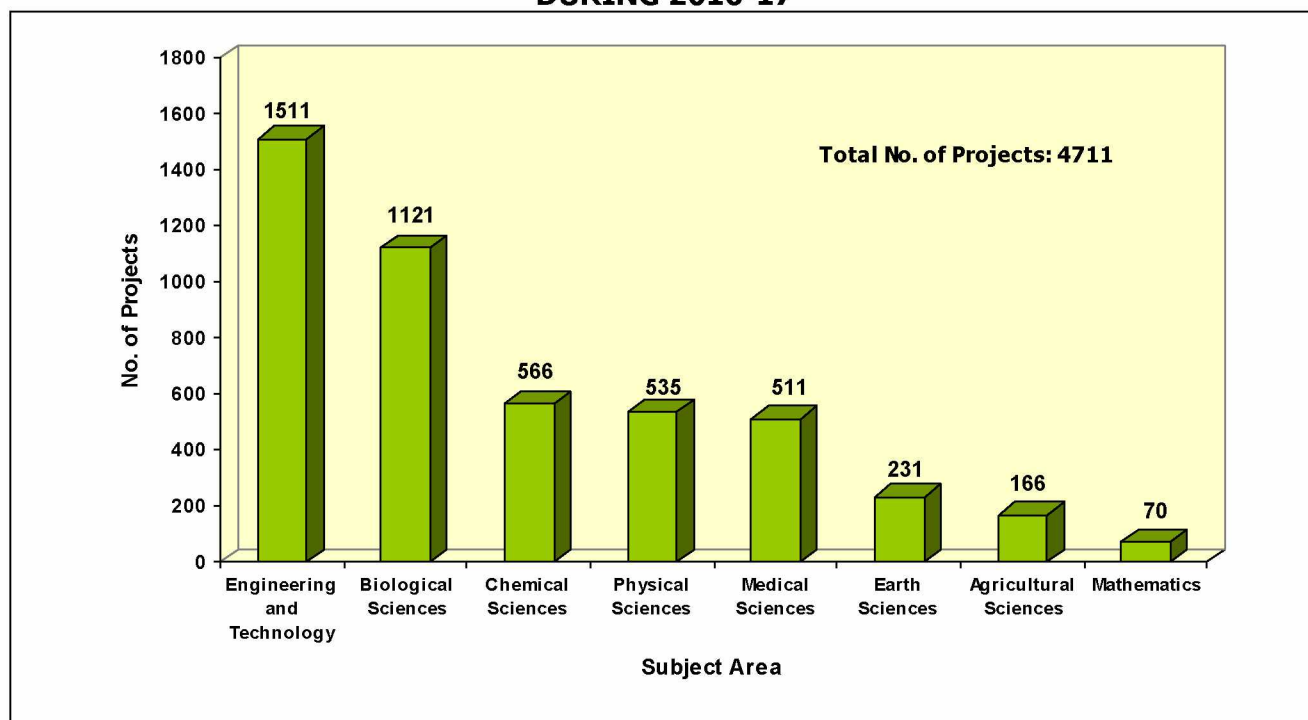
The projects are classified in eight major subject areas as under:

- |                          |                             |                      |
|--------------------------|-----------------------------|----------------------|
| a) Agricultural Sciences | b) Biological Sciences      | c) Chemical Sciences |
| d) Earth Sciences        | e) Engineering & Technology | f) Mathematics       |
| g) Medical Sciences      | h) Physical Sciences        |                      |

The classification of R&D projects has been done based on the **subject area** indicated by the agencies and also based on the title of the projects. Some of the projects may be multi-disciplinary in nature but have been classified into one of the subject areas mentioned above, depending on their major thrust. **Figure 2** shows number of extramural R&D projects approved in each subject area during the year 2016-17. It shows that maximum number of projects in the area of Engineering & Technology, Biological Sciences & Chemical Sciences. Maximum number of projects i.e. 1511 were in the area of 'Engineering & Technology'. Out of these 1511 projects, the maximum number of projects i.e. 1246 were approved by the Department of Science & Technology (DST) followed by 106 projects by Defence Research and Development Organisation (DRDO), 39 projects by Department of Atomic Energy (DAE). A total of 1121 projects were funded by agencies namely DST (609), DBT (429), CSIR (36), MOEFCC (30), DAE (14), DRDO (1), DSIR (1), MNRE (1) in the 'Biological Sciences' area.

The next in order is 'Chemical Sciences' in which 566 projects were approved, as seen in **Figure 2**. Out of these, the maximum number of projects i.e. 422 were approved by Department of Science & Technology (DST), followed by 81 projects by Council of Scientific & Industrial Research (CSIR) and 49 projects by Department of Atomic Energy (DAE).

### SUBJECT AREA-WISE NUMBER OF R&D PROJECTS APPROVED DURING 2016-17

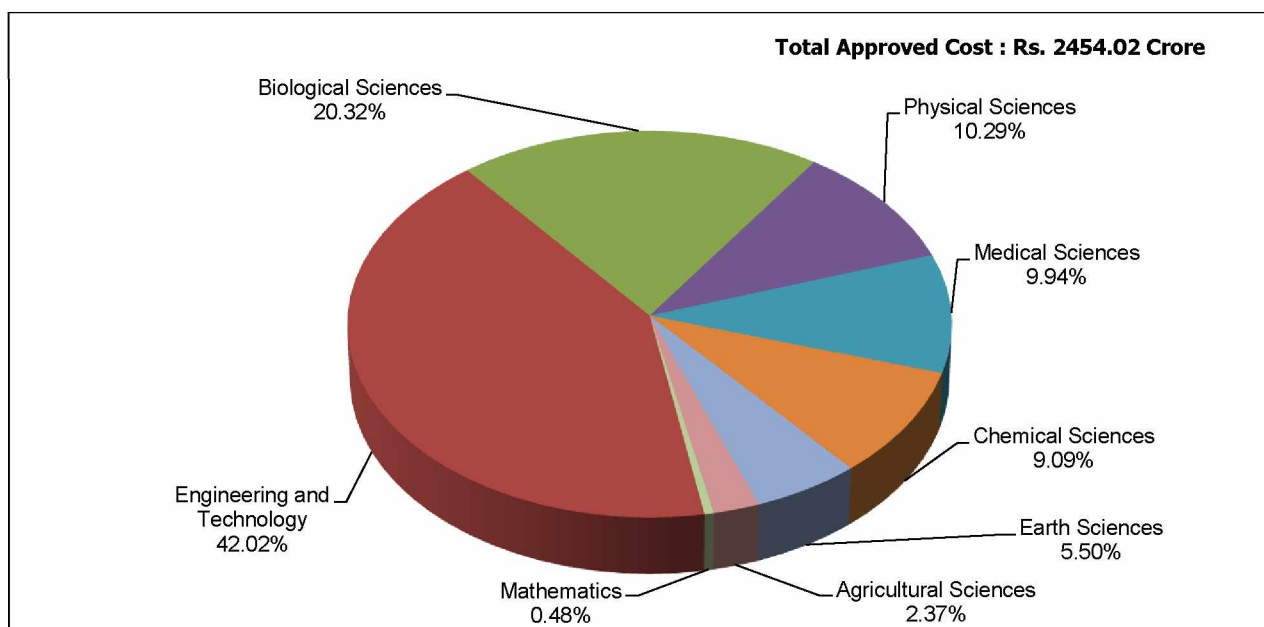


**Figure 2**



**Figure 3** shows subject area-wise **R&D support** during the year 2016-17. Among the top 3 recipients Subject Area **Engineering and Technology** area received maximum financial support of 42.02 per cent followed by **Biological Sciences** at 20.32 per cent and **Physical Sciences** at 10.29 per cent. **Medical Sciences** area received financial support of 9.94 per cent followed by **Chemical Sciences** at 9.09 per cent. Projects in the area of **Earth Sciences** and **Agricultural Sciences** received financial support of 5.50 per cent and 2.37 per cent respectively. The least financial support of 0.48 per cent was received by **Mathematics**.

#### SUBJECT AREA-WISE R&D SUPPORT BY APPROVED COST DURING 2016-17



**Figure 3**

**Table 3** gives information about the subject area-wise distribution of Extramural R&D projects along with their total approved cost.

**Table 3**  
**Subject Area-Wise Distribution of Extramural R&D Projects and their Approved Cost During 2016-17**

Subject Area	Number of Projects	(Rs. Crore)
		Total Approved Cost
Agricultural Sciences	166	58.19
Engineering and Technology	1511	1031.07
Medical Sciences	511	243.9
<b>Natural Sciences :</b>		
Biological Sciences	1121	498.56
Chemical Sciences	566	223.05
Earth Sciences	231	134.95
Mathematics	70	11.75
Physical Sciences	535	252.54
<b>Total</b>	<b>4711</b>	<b>2454.02</b>



## TYPES OF INSTITUTE-WISE ANALYSIS

The institutions have been classified into five categories such as:

- A. Universities/Colleges
- B. Deemed Universities
- C. Institutes of National Importance
  - Indian Institute of Technology, All India Institute of Medical Sciences, Indian Statistical Institute, P.G. Institute of Medical Education & Research and Sree Chitra Tirunal Institute for Medical Sciences & Technology
- D. National Research Laboratories
  - Laboratories under CSIR, ICAR, ICMR, DRDO and autonomous institutions under Central Government Ministries/Departments, Central Public Sector Undertakings
- E. Others
  - Institutions which are not covered under A, B, C & D above.

The distribution of Extramural R&D Projects by types of Institutes with their approved cost has been indicated in **Table 4**. The number given in column 2 in this Table refers to **unique institutes** which received 4711 projects for implementation.

**Table 4**

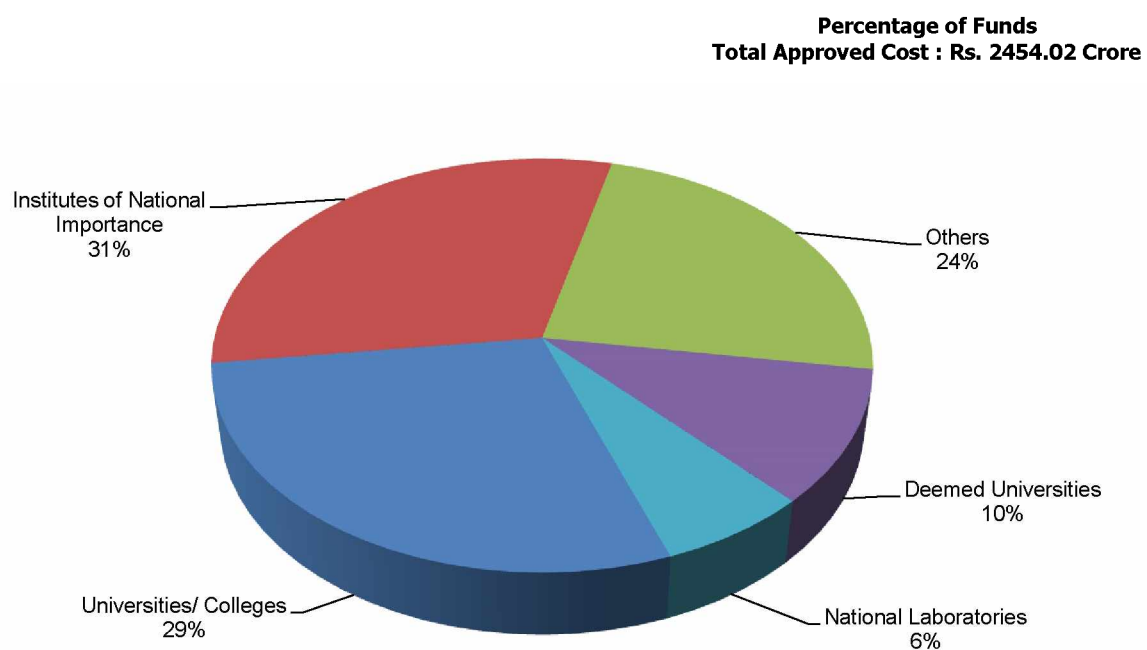
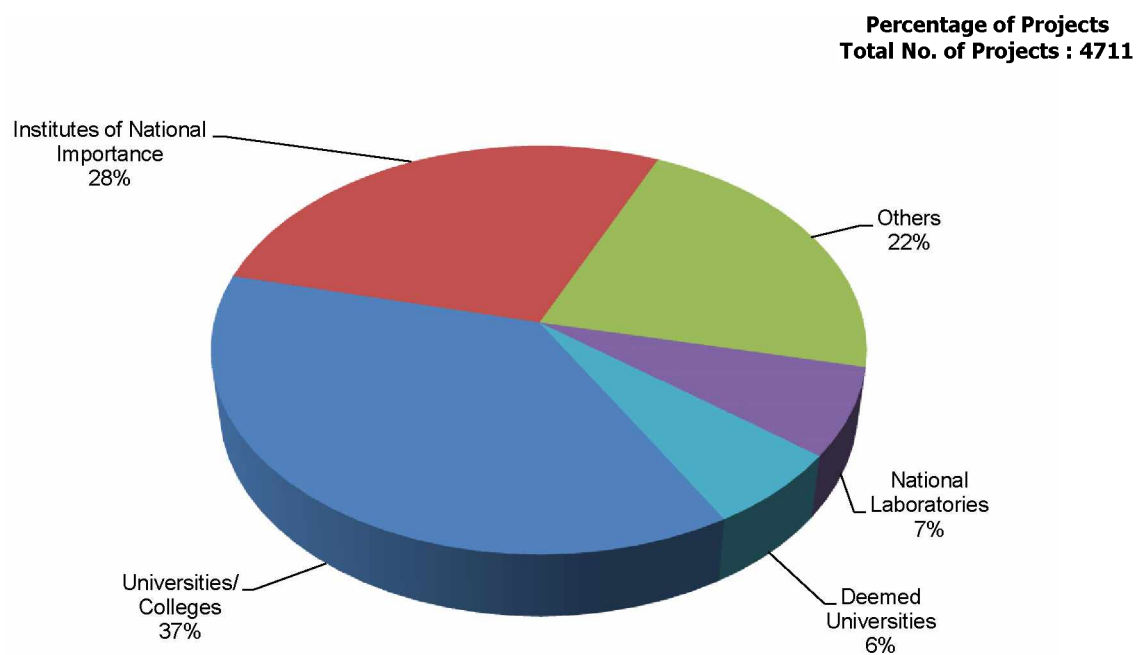
### **Distribution of Extramural R&D projects by Types of Institutes & their Approved Cost During 2016-17**

Types of Institutes	Number of Institutes	Number of Projects	Total Approved Cost (Rs. Crore)	Percentage of Total Approved Cost
(1)	(2)	(3)	(4)	(5)
Universities/Colleges	468	1743	701.71	28.59
Deemed Universities	24	289	257.12	10.48
Institutes of National Importance	67	1307	755.22	30.77
National Laboratories	44	330	160.4	6.54
Others	493	1021	577.18	23.52
<b>Total:</b>	<b>1096</b>	<b>4690</b>	<b>2451.63</b>	<b>99.9</b>
Individual Scientists*		<b>21</b>	<b>2.38</b>	<b>0.1</b>
<b>G.Total:</b>		<b>4711</b>	<b>2454.02</b>	<b>100</b>

\* **Note:** Distribution is shown at the end of Annexure 2.

**Figure 4** hereunder shows the percentage distribution of number of projects and its approved cost by types of Institutions during the year 2016-17. The maximum number i.e. 37% of the projects were sanctioned to Universities/Colleges with financial support of 29%. Institute of National Importance received 28% of the projects with financial support of 31%. 22% of the total projects were given to Others category and 7% to National Laboratories with financial support of 24% and 7% respectively. 6% of the projects were given to Deemed Universities with financial support of 10%. The total financial support to academic sector (A, B & C categories) was 70%.

# **DISTRIBUTION OF R&D PROJECTS BY TYPES OF INSTITUTES & APPROVED COST DURING 2016-17**

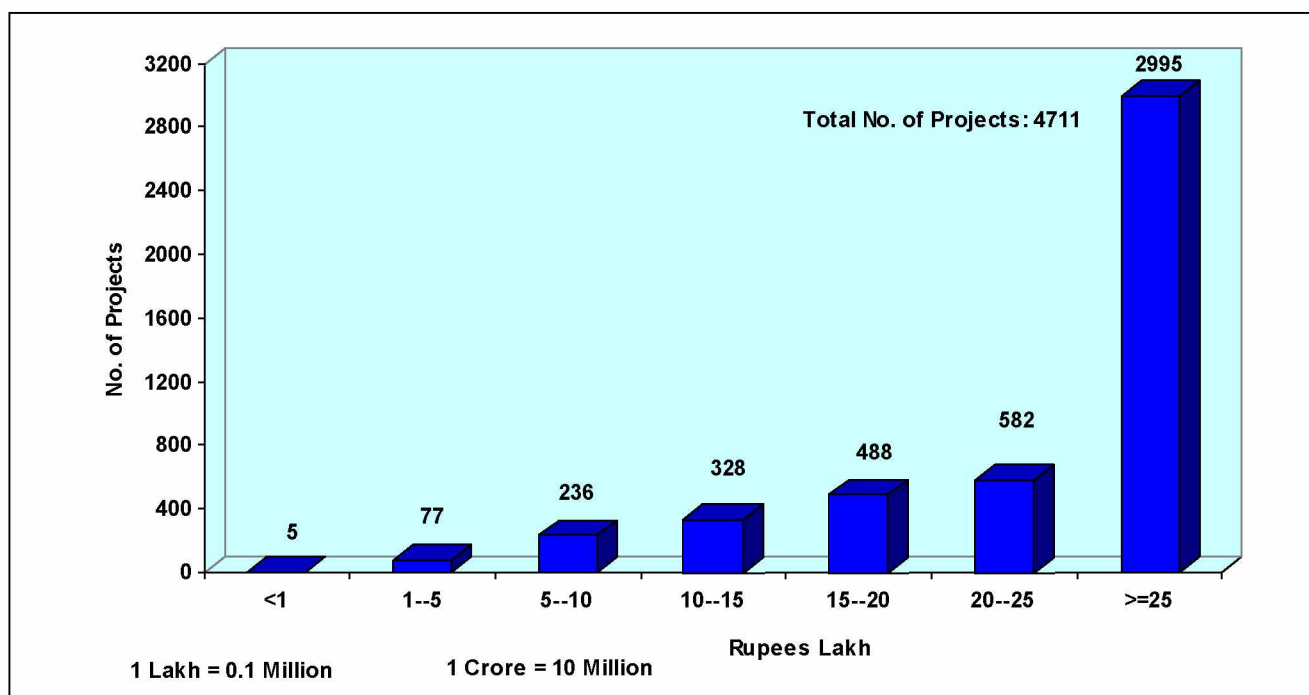


**Figure 4**

## COST RANGE-WISE ANALYSIS

As per **Figure 5**, the analysis indicates that 2995 projects were in the cost range of Rs. 25 lakh & above. In addition to these, there were 1716 projects costing less than Rs. 25 lakh i.e. 582 projects were between the cost range of Rs. 20 to 25 lakh followed by 488 projects in the cost range of Rs. 15 to 20 lakh, 328 projects were in the cost range of Rs. 10 to 15 and 236 projects were in the cost range of Rs. 5 to 10 lakh. 77 projects were between the cost range of Rs. 1 to 5 lakhs, There were 5 projects costing less than Rs.1 lakh.

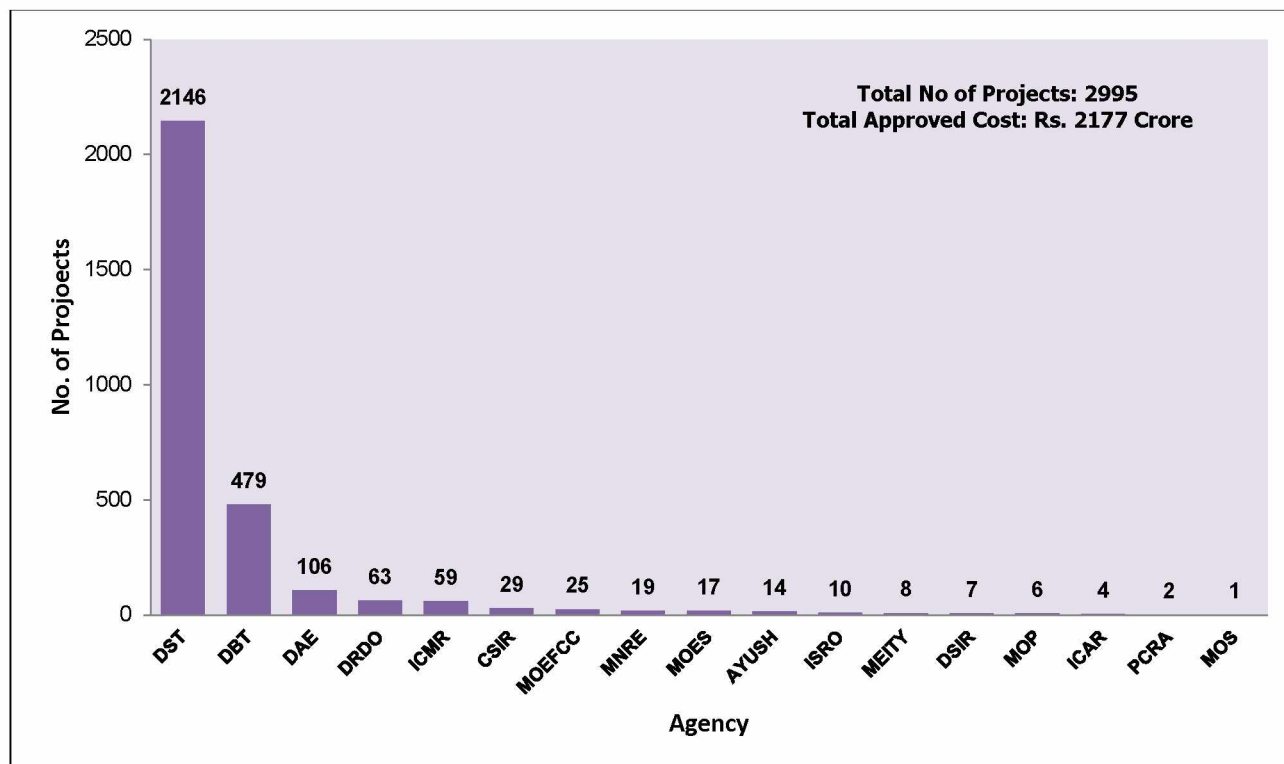
### DISTRIBUTION OF R&D PROJECTS BY APPROVED COST DURING 2016-17



**Figure 5**

Agency-wise distribution of 2995 large projects costing equal to and above Rs. 25 lakh each has been given in **Figure-6**. Out of this, maximum number of projects i.e. 2146 were funded by the Department of Science & Technology (DST) followed by 479 by the Department of Biotechnology (DBT), 106 projects by Department of Atomic Energy (DAE), 63 projects by Defence Research & Development Organisation (DRDO), 59 projects by Indian Council of Medical Research (ICMR), 29 projects by Council of Scientific & Industrial Research (CSIR). A total of 113 projects were funded by other agencies i.e. MOEFCC (25), MNRE (19), MOES (17), AYUSH (14), ISRO (10), MEITY (8), DSIR (7), MOP (6), ICAR (4), PCRA (2), MOS (1).

**AGENCY-WISE DISTRIBUTION OF R&D PROJECTS  
COSTING Rs. 25 LAKH & ABOVE DURING 2016-17**



**Figure 6**

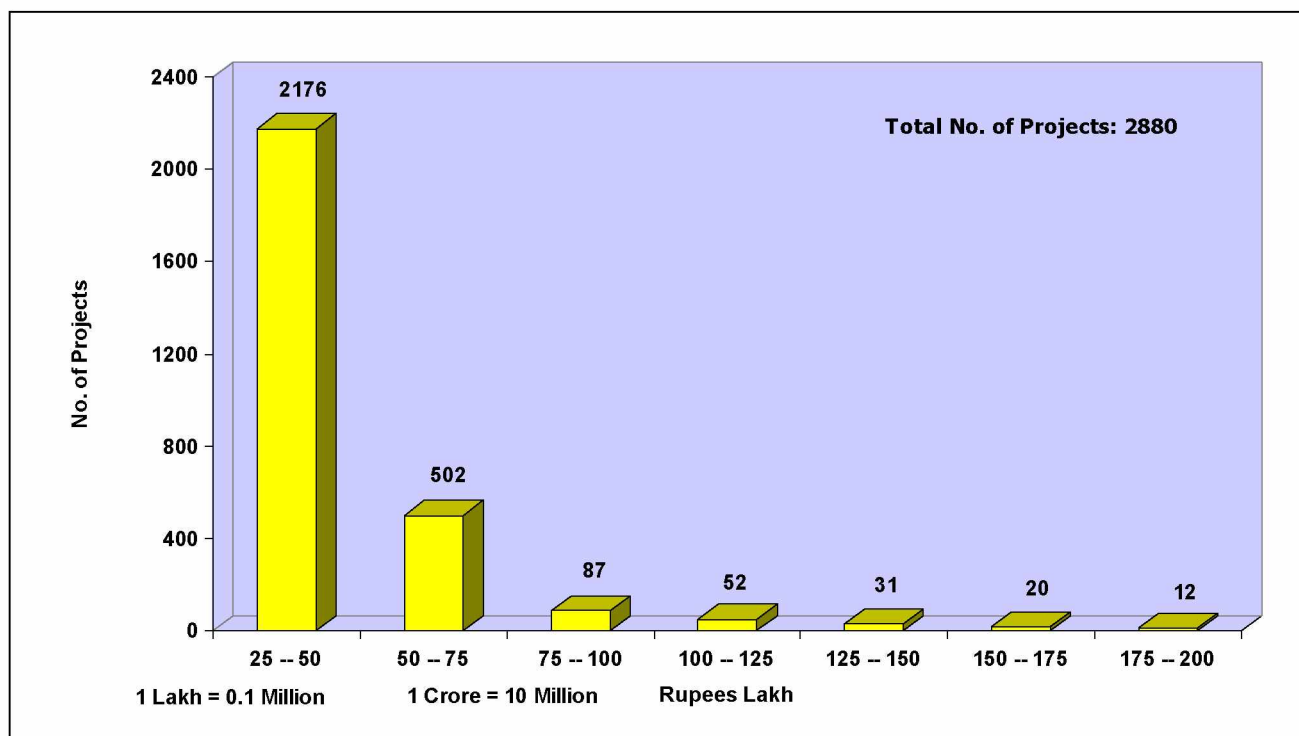
As may be seen from **Figure 5**, the total number of projects costing Rs. 25 lakh and above were 2995. Distribution of these projects, along with total approved cost has been shown in **Table 5 & 6 and Figure 7 & 8**. The highest number of projects i.e. 2176 were in the cost range of Rs. 25-50 lakh, 502 in the range of Rs. 50-75 lakh and 87 projects were in the range of Rs. 75-100 lakh. There were 52 projects between the cost range of Rs. 1-2 Crore.

**Table 5  
Distribution of Extramural R&D Projects costing Rs. 25 Lakh to  $\geq 2$  Crore  
During 2016-17**

Cost Range (Rs. Lakh)	Number of Projects	Total Approved Cost (Rs. Crore)
25 - 50	2176	780
50 - 75	502	300
75 - 100	87	74
100 - 125	52	58
125 - 150	31	42
150 - 175	20	32
175 - 200	12	23
<b>Total</b>	<b>2880</b>	<b>1309</b>



**DISTRIBUTION OF R&D PROJECTS BY APPROVED COST OF  
RS. 25 LAKH TO  $\geq 2$  CRORE DURING 2016-17**

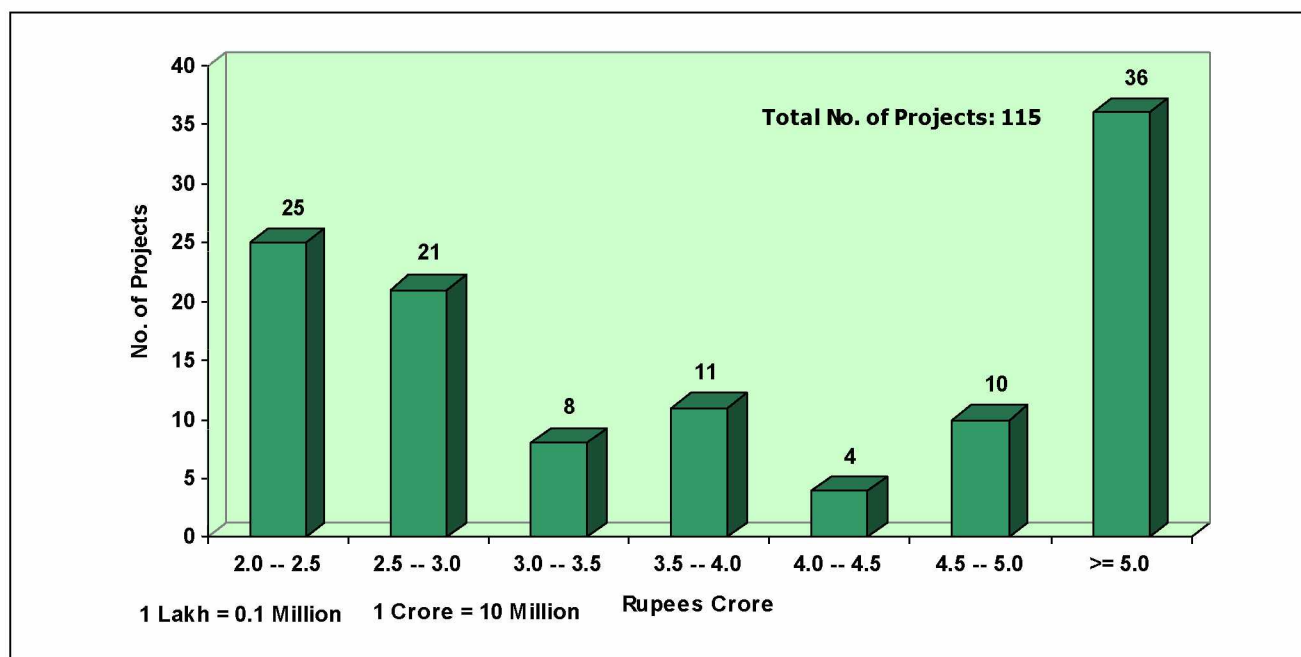


**Figure 7**

**Table 6**  
**Distribution of Extramural R&D Projects costing Rs. 2 Crore to  $\geq 5$  Crore**  
**During 2016-17**

Cost Range (Rs. Crore)	Number of Projects	Total Approved Cost (Rs. Crore)
2.0 - 2.5	25	57
2.5 - 3.0	21	59
3.0 - 3.5	8	26
3.5 - 4.0	11	41
4.0 - 4.5	4	17
4.5 - 5.0	10	48
$\geq 5.0$	36	620
<b>Total:</b>	<b>115</b>	<b>868</b>

**DISTRIBUTION OF R&D PROJECTS BY APPROVED COST OF  
Rs. 2 CRORE TO  $\geq$  5 CRORE DURING 2016-17**

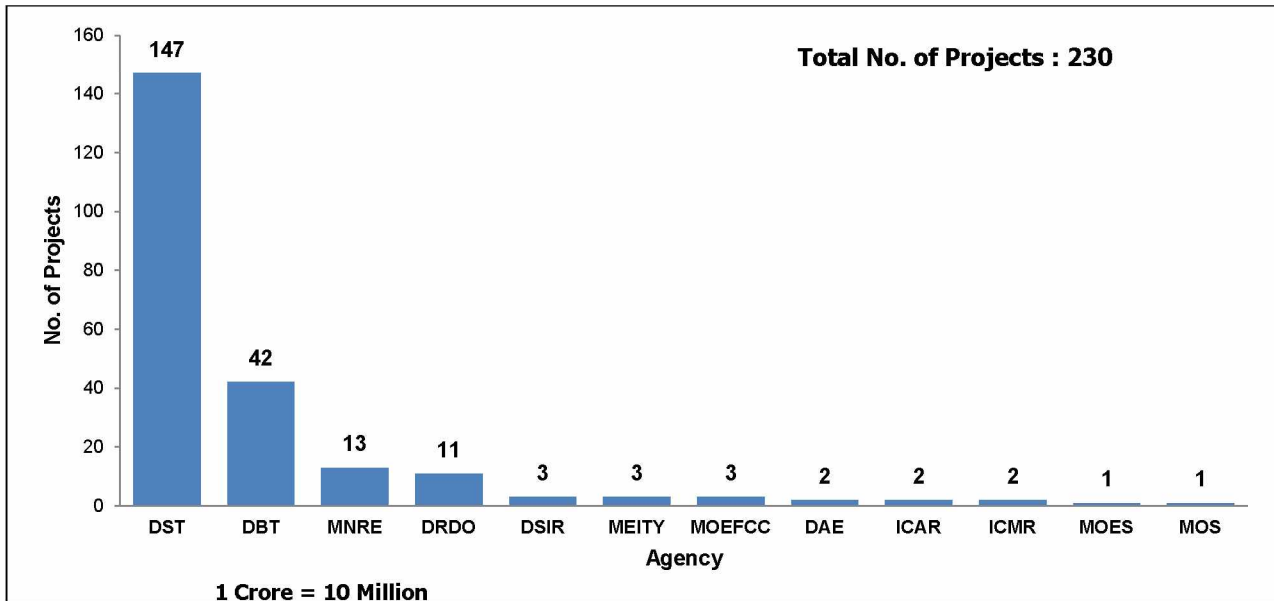


**Figure 8**

As per **Figure 8**, the high valued projects sanctioned during the year were 115. The high valued projects sanctioned by Department of Science & Technology (DST) were 76, followed by Department of Bio-technology (DBT) with 15 projects followed by Ministry of New & Renewable Energy (MNRE) with 10 projects with the single highest value project for the organizations being Rs. 51.81 Crore, Rs. 22.23 Crore, Rs. 31.17 Crore respectively.

**Figure 9** indicates that there were 230 projects costing Rs. 1 Crore & above which were funded by 10 agencies during 2016-17. Majority of these projects i.e. 147 (63.91%) were funded by the Department of Science & Technology (DST) followed by 42 (18.26%) projects by Department of Biotechnology (DBT), 13 (5.65%) projects by Ministry of New & Renewable Energy (MNRE), 11 projects by Defence Research and Development Organisation (DRDO). The remaining 17 (6.7%) projects were funded by other eight agencies namely DSIR (3), MEITY (3), MOEFCC (3), DAE (2), ICAR (2), ICMR (2), MOES (1) and MOS (1).

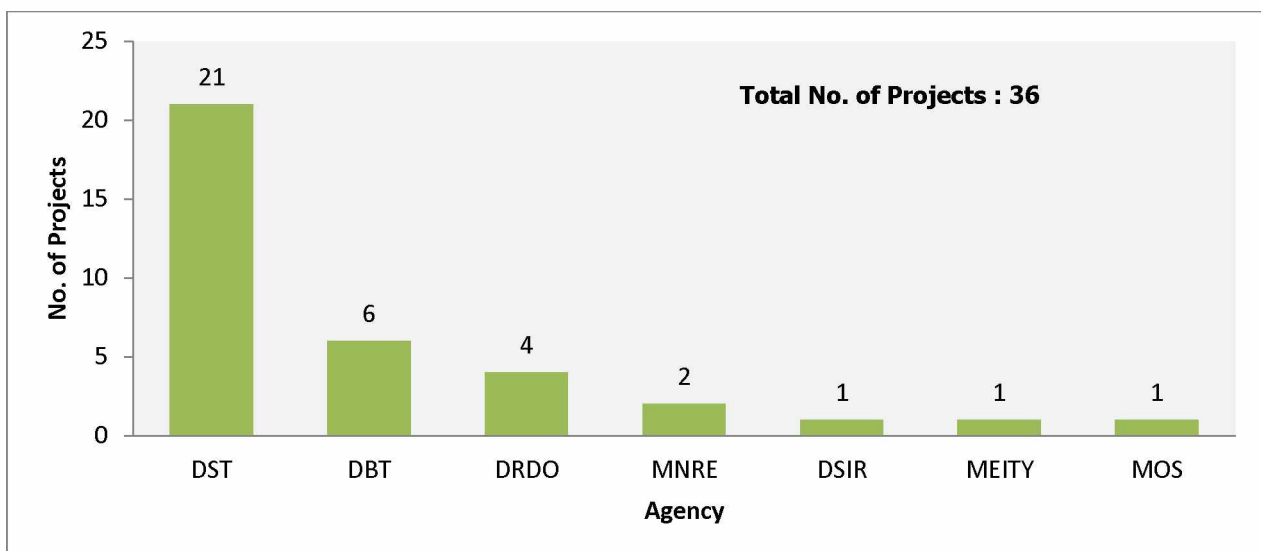
**AGENCY-WISE DISTRIBUTION OF R&D PROJECTS  
COSTING RS. 1 CRORE & ABOVE DURING 2016-17**



**Figure 9**

It may be seen from **Figure 10** that there were 36 projects costing Rs. Five Crore and above sanctioned by six agencies. The maximum number of projects i.e. 21 were funded by the Department of Science & Technology (DST), 6 projects by the Department of Biotechnology (DBT) followed by 4 projects by the Defence Research and Development Organisation (DRDO). The remaining 5 projects were funded by the other 4 agencies namely by MNRE (2), MEITY (1), DSIR (1), and MOS (1).

**AGENCY-WISE DISTRIBUTION OF R&D PROJECTS COSTING  
Rs. 5 CRORE & ABOVE DURING 2016-17**



**Figure 10**

## GENDER-WISE ANALYSIS : PRINCIPAL INVESTIGATORS (PIs)

The gender-wise distribution of 3921 PIs for 4711 Extramural R&D Projects is shown in **Table 7**. It is pertinent to note that women participation as Principal Investigators of Extramural Projects was 24 per cent in comparison to 26 per cent during 2015-16. These female PIs have taken up 23 per cent of the total 4711 projects this year in comparison to 25 per cent of total projects 4303 during the previous year of 2015-16.

**Table 7**  
**Gender-wise Distribution of Principal Investigators During 2016-17**

Gender	Principal Investigator		Projects	
	Number	%age	Number	%age
Male	2799	71	3469	74
Female	941	24	1061	22
Heads*	181	5	181	4
<b>Total</b>	<b>3921</b>	<b>100</b>	<b>4711</b>	<b>100</b>

\* **Note:** Projects approved to Heads of Organisations & Institutions, their gender information is not available.

## GENDER-WISE ANALYSIS : CO-PRINCIPAL INVESTIGATORS (CO-PIs)

As a new initiative DST through its Extramural R&D survey requested for information on Co-PI. The gender-wise distribution of 2145 Co-PIs for 1248 Extramural R&D Projects is shown in **Table 8**. Women participation as Co-PIs of Extramural projects was 18 per cent.

**Table 8**  
**Gender-wise Distribution of Co-Principal Investigators During 2016-17**

Gender	Co-Principal Investigator	
	Number	%age
Male	1756	82
Female	389	18
<b>Total</b>	<b>2145</b>	<b>100</b>

\* **Note :** Co-PIs data is based upon survey response received from various funding agencies

## STATE-WISE ANALYSIS

The detailed data regarding State-wise support to extramural R&D projects is given in **Annexure -3**, which shows that the highest number of 640 projects were funded in Tamil Nadu at a total cost of Rs. 331.86 Crore (13.52%), followed by 440 projects in Delhi costing Rs. 274.11 Crore (11.17%), 425 projects in Maharashtra costing Rs. 289.88 Crore (11.81%), 396 projects in Karnataka costing Rs. 269.46 Crore (10.98%) and 370 projects in West Bengal costing Rs. 179.24 Crore (7.30%). The information about the remaining States can be seen from Annexure-3.

In all 3921 PIs and 1118 Institutions inclusive of "Individual Scientists & Others" handled 4711 Extramural R&D Projects in 33 States and Union Territories at a total cost of Rs. 2454.02 Crore.