

Patent in India

# 1998 UPDATE BUDGET OF SCIENCE, TECHNOLOGY AND ENVIRONMENT AND PATENT APPLICATIONS FILED IN INDIA

*Compiled by*  
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# Introductory Notes

- i. The Government of India annually releases documents giving figures of expenditure incurred by various central ministries and budget estimates of their activities.
- ii. This report gives the salient aspects of the financial data regarding science and technology activities of the Central Government. The main source of information is the document 'Expenditure Budget 1998-99, Vol 1' of the Central Government.
- iii. The Expenditure Budget document has categorised the budget of 'Science, Technology and Environment' under the broad category of Economic Services to include the expenditures on atomic energy research, space research, other scientific research, oceanography research and ecology and environment. The heading 'other scientific research' includes expenditure on S&T activities of the Department of Science and Technology, Department of Scientific and Industrial Research and Department of Biotechnology.
- iv. The following tables are included in this report :

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- v. The Expenditure Budget document does not separately give budgets in respect of medical research and of public sector R&D under the socio-economic ministries. Only the total budget of the respective ministries are given. Figures for medical research and R&D of public sector units are, therefore, not included in this report.
- vi. The data on the number of patent applications filed in India and their field-wise distribution is obtained from the Annual Report of Controller General of Patents, Designs and Trade Marks, 1996-97.
- vii. All figures are : Rupees in Crore (1 Crore = 10 Million).

**Table 1**

**Trends in Expenditure on 'Science, Technology and Environment'  
during 1989-90 to 1996-97 and Budget for 1997-98 to 1998-99**

(Rs. in Crore)

	1989-90	1990-91	1991-92	1992-93	1993-94
	Actuals	Actuals	Actuals	Actuals	Actuals
<i>National</i>					
<i>Expenditure (N)</i>					
Plan	27520	28365	30961	36660	43662
Non - Plan	65388	76933	80453	85958	98191
Total	92908	105298	111414	122618	141853
<i>Science, Technology and Environment (S)</i>					
Plan	679	706	814	838	953
Non - Plan	476	555	621	672	681
Total	1155	1261	1435	1510	1634
S as % of N	1.24	1.20	1.29	1.23	1.15

	1994-95	1995-96	1996-97	1997-98	1998-99
	Actuals	Actuals	Actuals	Revised	Budget
<i>National</i>					
<i>Expenditure (N)</i>					
Plan	47378	46374	53534	60630	72002
Non - Plan	113361	131901	147473	174615	196105
Total	160739	178275	201007	235245	268107
<i>Science, Technology and Environment (S)</i>					
Plan	1098	1262	1793	1965	2766
Non - Plan	843	934	1057	1346	1495
Total	1941	2196	2850	3311	4261
S as % of N	1.20	1.23	1.42	1.40	1.59

\* Expenditure on 'Science, Technology and Environment' includes expenditures on atomic energy research, space research, otherscientific research, oceanography research and ecology and environment  
(for details please see table 2)

\* For expenditure on 'Science, Technology and Environment'(S)as percentage of the total national expenditure (N), one should note that 'S' does not represent the total budget for science and technology activities of the Central Government.

**Table 2**

**Break-up of Budget for 1997-98 and 1998-99 of  
S&T activities included under  
'Science, Technology and Environment'**

(Rs. in Crore)

	1997-98 Budget	1997-98 Revised	1998-99 Budget
<i>Atomic Energy Research</i>			
Plan	225.00	211.75	300.00
Non - Plan	390.83	475.17	530.28
Total	615.83	686.92	830.28
<i>Space Research</i>			
Plan	990.00	850.00	1381.00
Non - Plan	169.43	194.97	211.34
Total	1159.43	1044.97	1592.34
<i>Oceanographic Research</i>			
Plan	88.10	85.00	88.00
Non - Plan	16.62	15.85	18.02
Total	104.72	100.85	106.02
<i>Other Scientific Research</i>			
Plan	567.20	587.32	594.61
Non - Plan	504.67	590.17	652.20
Total	1071.87	1177.49	1246.81
<i>Ecology and Environment</i>			
Plan	307.00	230.75	402.61
Non - Plan	70.52	70.39	82.89
Total	377.52	301.14	485.50

**Table 3**

**Budget for 1997-98 and 1998-99 of S&T activities included  
under 'Other Scientific Research'**

(Rs. in Crore)

	1997-98 Budget	1997-98 Revised	1998-99 Budget
<i>Science and Technology</i>			
Plan	209.43	258.43	234.43
Non - Plan	212.87	216.81	231.37
Total	422.30	475.24	465.80
<i>Scientific and Industrial Research</i>			
Plan	224.30	218.96	224.30
Non - Plan	282.07	360.20	406.07
Total	506.37	579.16	630.37
<i>Biotechnology</i>			
Plan	101.39	80.72	106.45
Non - Plan	4.74	5.87	6.53
Total	106.13	86.59	112.98
<i>Others</i>			
Plan	1.51	1.51	1.56
Non - Plan	4.99	7.29	8.23
Total	6.50	8.80	9.79
<i>Total</i>			
Plan	536.63	559.62	566.74
Non - Plan	504.67	590.17	652.20
Total	1041.30	1149.79	1218.94

\* Expenditure under 'Other Scientific Research' includes S&T activities of the Department of Science and Technology, Department of Scientific and Industrial Research and Department of Biotechnology.

**Table 4**

**Agricultural Research, Non-Conventional Energy Sources and Electronics: Actual expenditure during 1996-97 and budget for 1997-98 and 1998-99**

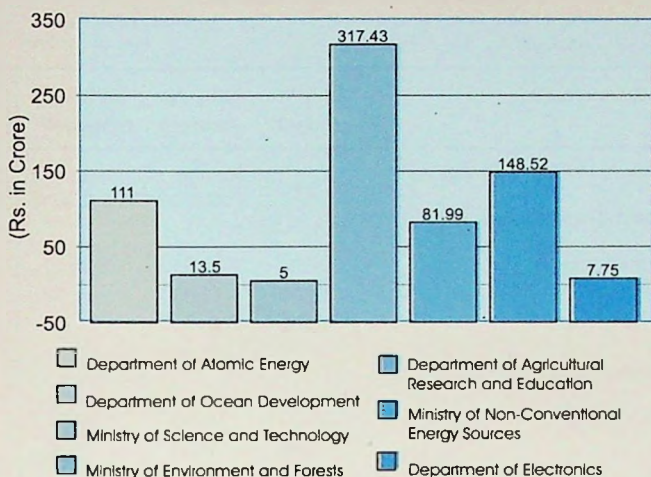
(Rs. in Crores)

Ministry/Department	1996-97 (Actuals)	1997-98 (Revised)	1998-99 (Budget)
<i><b>Agricultural Research and Education</b></i>			
Plan	308.47	331.17	531.17
Non - Plan	257.24	354.32	475.02
Total	565.71	685.49	1006.19
<i><b>Non Conventional Energy Sources</b></i>			
Plan	274.20	190.00	403.02
Non - Plan	3.04	4.15	4.60
Total	277.24	194.15	407.62
<i><b>Electronics</b></i>			
Plan	111.18	145.10	190.00
Non - Plan	18.32	20.13	21.57
Total	129.50	165.23	211.57

\* Budgets in respect of medical research and of R&D of public sector undertakings under the Socio-economic ministries have been clubbed together with the total budget of the respective ministries. These figures are not available separately and hence are not included in this report.

**Table 5**

**Provisions for S&T Related Externally Aided Projects:  
Budget 1998-99**



**Table 6**

**Non - plan Loans to Selected S&T Related Public Enterprises:  
Budget for 1997-98 and 1998-99**

Ministry/Department	(Rs. in Crores)	
	1997-98 (Revised)	1998-99 (Budget)
<b>Department of Atomic Energy</b>		
Electronics Corporation of India Ltd.	0.00	15.00
<b>Ministry of Science and Technology</b>		
Bharat Immunologicals and Biological Corporation Ltd.	1.35	0.00
<b>Department of Electronics</b>		
Electronic Trade and Technology Development Corporation India Ltd.	0.50	0.00

**Table 7**

**Plan Investment in Selected S&T Related Public Enterprises:  
Budget for 1997-98 and 1998-99**

(Rs. in Crores)

Ministry/Department	1997-98 (Budget)	1997-98 (Revised)	1998-99 (Budget)
<i>Department of Atomic Energy</i>			
Electronics Corporation of India			
Total Plan Outlay	22.03	22.03	34.00
Equity	10.03	10.03	11.00
Loans	10.00	10.00	11.00
Indian Rare Earths Ltd.			
Total Plan Outlay	31.00	26.00	32.00
Equity	1.00	1.00	5.00
Loans	--	--	--
Nuclear Power Corporation			
Total Plan Outlay	860.00	598.52	1021.91
Equity	325.00	448.52	771.91
Loans	--	27.00	111.00
Uranium Corporation of India			
Total Plan Outlay	35.00	25.48	39.10
Equity	24.00	16.30	39.10
Loans	--	--	--
<i>Department of Space</i>			
Antrix Corporation Limited			
Total Plan Outlay	0.25	--	--
Equity	0.25	--	--
Loans	--	--	--

**Table 7 (contd.)**

(Rs. in Crores)

Ministry/Department	1997-98 (Budget)	1997-98 (Revised)	1998-99 (Budget)
<i>Ministry of Science and Technology</i>			
Bharat Immunologicals and Biological Corporation			
Total Plan Outlay	5.31	3.96	0.05
Equity	5.31	3.96	0.05
Loans	--	--	--
Central Electronics Ltd.			
Total Plan Outlay	5.00	1.00	5.00
Equity	2.50	0.50	2.50
Loans	2.50	0.50	2.50
Indian Vaccines Corporation			
Total Plan Outlay	--	--	--
Equity	--	--	--
Loans	--	--	--
National Research Development Corporation			
Total Plan Outlay	0.50	0.48	0.50
Equity	0.25	0.24	0.25
Loans	0.25	0.24	0.25
<i>Ministry of Non-Conventional Energy Sources</i>			
Indian Renewable Energy Development Agency			
Total Plan Outlay	408.17	367.51	516.68
Equity	34.50	33.50	41.00
Loans	80.13	60.13	148.52

**Table 7 (contd.)**

(Rs. in Crore)

Ministry/Department	1997-98 (Budget)	1997-98 (Revised)	1998-99 (Budget)
<i>Department of Electronics</i>			
Computer Maintenance Corporation			
Total Plan Outlay	22.00	22.00	19.00
Equity	--	--	--
Loans	--	--	--
Electronics Trade and Technology Development Corporation Ltd.			
Total Plan Outlay	0.50	0.50	2.25
Equity	--	--	2.25
Loans	0.50	0.50	--
Semi-Conductor Complex Ltd.			
Total Plan Outlay	26.00	26.00	15.00
Equity	26.00	26.00	15.00
Loans	--	--	--

**Table 8**

**Contribution to International bodies having S&T related activities**

(Rs. in Crore)

Ministry/Department/ International bodies	1996-97 Actuals	1997-98 Budget	1997-98 Revised	1998-99 Budget
<i>Department of Atomic Energy</i>	2.35	3.40	3.40	3.40
<i>Department of Ocean Development</i>	0.21	0.80	1.03	0.47
<i>Department of Science and Technology</i>				
World Meteorological Organisation	0.75	0.92	0.91	0.91
UN Fund for Science and Technology Development and International Federation of Robotics	0.11	0.12	0.12	0.12
International Council of Scientific Unions	0.55	0.55	0.55	0.55
<i>Department of Scientific and Industrial Research</i>	0.36	0.40	0.40	0.40
<i>Department of Biotechnology</i>				
UNIDO for International Centre for Genetic Engineering and Biotechnology	3.00	3.00	5.00	5.00

\*Contributions to International bodies are made by various ministries and departments of the government. Science and Technology may be one of the activities of many of these international bodies. Contributions to international bodies having some S&T related activities are indicated here.



**Table 8 (contd.)**

(Rs. In Crore)

Ministry/Department/ International bodies	1996-97 Actuals	1997-98 Budget	1997-98 Revised	1998-99 Budget
<b><i>Ministry of Environment and Forests</i></b>				
United Nations Environment Programme	0.55	0.75	0.75	0.75
International Union for Conservation of Nature and Natural Resources	0.23	0.40	0.40	0.37
International Whaling Commission	0.08	0.11	0.10	0.10
South Asia Co-operative for Environment Programme	0.07	0.07	0.08	0.08
International Centre for Integrated Mountain in Development	0.16	0.16	0.16	0.16
<b><i>Ministry of Agriculture</i></b>				
Food and Agriculture Organisation	3.79	0.04	4.06	4.28
<b><i>Ministry of Commerce</i></b>				
World Trade Organisation	1.88	1.37	1.87	1.85
International Trade Centre	0.60	0.15	0.15	0.15
<b><i>Ministry of External Affairs</i></b>				
United Nations Organisation Normal Contribution	20.93	27.16	22.82	28.92
<b><i>Other contributions</i></b>				
International Tribunal for Law of the sea	0.13	0.18	0.04	0.06
Commonwealth Secretariat	1.91	2.10	2.10	2.30
Commonwealth Foundation	0.60	0.66	0.66	0.71
SAARC Secretariat	1.11	1.20	1.40	1.70

Table 8 (contd.)

(Rs. in Crore)

Ministry/Department/ International bodies	1996-97 Actuals	1997-98 Budget	1997-98 Revised	1998-99 Budget
<i>Other International Organisations</i>				
G-15	0.34	1.03	1.03	3.00
South Centre	1.24	1.20	--	1.20
OECD Development Centre	--	0.01	0.04	0.10
<i>Ministry of Finance</i>				
Commonwealth Fund for Technical Cooperation	3.59	3.42	3.93	4.00
International Fund for Agriculture Development	--	10.50	10.50	10.80
Global Environment Trust Fund	10.76	5.79	10.78	11.00
United Nations Development Programme	15.60	16.22	16.19	16.20
Asian Development Bank	0.22	0.23	0.22	0.22
<i>Department of Telecommunication</i>				
International Telecommuni- cations Union	4.53	6.00	4.43	5.52
Asia-Pacific Telecommunity	0.22	0.27	0.30	0.35
<i>Ministry of Health</i>				
World Health Organisation	4.66	5.24	4.75	5.00

Table 8 (contd.)

(Rs. in Crore)

Ministry/Department/ International bodies	1996-97 Actuals	1997-98 Budget	1997-98 Revised	1998-99 Budget
<b>Ministry of Human Resource Development</b>				
Asian Institute of Technology	0.14	0.18	0.18	0.18
UNESCO	4.79	5.00	4.98	6.30
International Copyright Union	0.31	0.40	0.27	0.40
Commonwealth University and College "The Commonwealth Learning"	1.10	1.20	1.20	2.20
<b>Ministry of Culture</b>				
International Centre for Conservation	0.05	0.05	0.05	0.06
World Heritage Fund	0.04	0.05	0.04	0.04
Asian Productivity Organisation	1.33	1.50	1.84	1.96
United Nations Industrial Development Organisation	5.12	5.50	5.50	6.25
<b>Ministry of Labour</b>				
International Labour Organisation	2.58	3.51	3.50	2.96
<b>Department of Rural Areas and Employment</b>				
Afro-Asian Rural Reconstruction Organisation	0.33	0.46	0.47	0.50
Centre on Integrated Rural Development in Asia and Pacific	0.39	0.28	0.29	0.33

**Table 9**

**Number of patent applications filled in India**

Year	Indian	Indian (% of Foreign)	Foreign	Total
1986-87	983	39.2	2506	3489
1987-88	930	36.8	2527	3457
1988-89	1077	42.8	2516	3593
1989-90	1039	39.6	2621	3660
1990-91	1180	45.7	2583	3763
1991-92	1293	57.2	2259	3552
1992-93	1228	54.8	2239	3467
1993-94	1266	48.6	2603	3869
1994-95	1741	48.5	3589	5330
1995-96	1606	↓ 29.5	5430 ↑	7036
1996-97	1661	↓ 24.0	6901 ↑	8562

# Table 10

## Field-wise distribution of patent applications

Field\Year	1991-92	1993-94	1995-96	1996-97
<i>Chemical</i>				
Filed	1185	1122	1934	1969
Granted	474	436	470	282
<i>Drug</i>				
Filed	323	273	1000	1124
Granted	118	145	132	71
<i>Food</i>				
Filed	38	82	104	121
Granted	10	30	34	18
<i>Electrical</i> <i>(includes Telecommunications)</i>				
Filed	468	426	1131	1677
Granted	167	132	56	54
<i>Mechanical</i>				
Filed	994	895	1599	1656
Granted	181	215	159	142
<i>General</i>				
Filed	544	1071	1268	2015
Granted	726	788	682	340
<i>Total</i>				
Filed	3552	3869	7036	8562
Granted	1676	1746	1533	907