

MINISTRY OF SCIENCE AND TECHNOLOGY

DEMAND NO. 85

Department of Science and Technology

A. The Budget allocations, net of recoveries, are given below:

Major Head	Actual 2010-2011			Budget 2011-2012			Revised 2011-2012			<i>(In crores of Rupees)</i> Budget 2012-2013			
	Plan	Non-Plan	Total	Plan	Non-Plan	Total	Plan	Non-Plan	Total	Plan	Non-Plan	Total	
Revenue	1898.30	345.23	2243.53	2303.95	382.30	2686.25	2206.95	352.30	2559.25	2438.23	395.02	2833.25	
Capital	34.59	1.21	35.80	45.05	1.70	46.75	45.05	1.20	46.25	38.77	1.20	39.97	
Total	1932.89	346.44	2279.33	2349.00	384.00	2733.00	2252.00	353.50	2605.50	2477.00	396.22	2873.22	
1. Secretariat-Economic Services	3451	...	42.44	42.44	...	45.75	45.75	...	45.60	45.60	...	47.15	47.15
Other Scientific Research													
2. Modernisation of Mapping Organizations (SOI and NATMO)	3425	4.21	270.97	275.18	14.95	286.50	301.45	17.89	277.80	295.69	26.23	301.02	327.25
	5425	9.59	0.39	9.98	10.05	0.20	10.25	10.05	0.20	10.25	13.77	0.20	13.97
<i>Total</i>		13.80	271.36	285.16	25.00	286.70	311.70	27.94	278.00	305.94	40.00	301.22	341.22
Science and Technology													
3. Autonomous Institutions & Professional Bodies	3425	570.00	19.00	589.00	698.00	15.00	713.00	643.00	15.00	658.00	700.00	12.60	712.60
4. Research and Development Support - Multi-Disciplinary Research in Science and Technology (SERC)	3425	556.83	1.81	558.64	289.00	1.50	290.50	410.25	1.50	411.75	315.00	1.50	316.50
5. Technology Development Programme	3425	95.18	...	95.18	125.00	...	125.00	130.56	...	130.56	140.00	...	140.00
6. Technology for Bamboo Products (Mission Mode Project)	3425	22.01	...	22.01	25.00	...	25.00	25.00	...	25.00	...	...	...
7. S & T Programmes for Socio-Economic Development	3425	113.04	...	113.04	116.00	...	116.00	123.00	...	123.00	85.00	...	85.00
8. State Science & Technology Programme	3425	26.79	...	26.79	70.00	...	70.00	55.00	...	55.00	70.00	...	70.00
9. International Cooperation	3425	49.58	5.78	55.36	65.00	8.35	73.35	74.00	6.55	80.55	90.00	7.35	97.35
10. Payment to Technology Development Board against Cess receipts	3425	...	5.00	5.00	...	25.00	25.00	...	5.00	5.00	...	25.00	25.00
11. Information Technology	3425	1.25	...	1.25	2.00	...	2.00	2.00	...	2.00	5.00	...	5.00
12. National Training Programme for Scientists/Technologists working with Government of India	3425	5.00	...	5.00	5.00	...	5.00	5.00	...	5.00	...	...	...
13. Other Programmes	3425	...	0.23	0.23	...	0.20	0.20	...	0.85	0.85	...	0.40	0.40
	5425	...	0.82	0.82	...	1.50	1.50	...	1.00	1.00	...	1.00	1.00
<i>Total</i>		...	1.05	1.05	...	1.70	1.70	...	1.85	1.85	...	1.40	1.40
14. Synergy Projects (O/o Pr. Scientific Adviser)													
14.01 Programme Component	3425	13.57	...	13.57	15.00	...	15.00	14.68	...	14.68	17.76	...	17.76

		(In Crores of Rupees)												
		<i>(In crores of Rupees)</i>												
	Major Head	Actual 2010-2011			Budget 2011-2012			Revised 2011-2012			Budget 2012-2013			
		Plan	Non-Plan	Total	Plan	Non-Plan	Total	Plan	Non-Plan	Total	Plan	Non-Plan	Total	
14.02	EAP Component	3425	...	...	...	...	...	0.32	...	0.32	0.24	...	0.24	
	<i>Total- Synergy Projects (O/o Pr. Scientific Adviser)</i>		13.57	...	13.57	15.00	...	15.00	15.00	...	15.00	18.00	...	18.00
15.	Drugs and Pharmaceutical Research	3425	20.56	...	20.56	25.00	...	25.00	20.00	...	20.00	15.00	...	15.00
		7425	25.00	...	25.00	35.00	...	35.00	35.00	...	35.00	25.00	...	25.00
	<i>Total</i>		45.56	...	45.56	60.00	...	60.00	55.00	...	55.00	40.00	...	40.00
16.	National Mission on Nano Science & Nano Technology	3425	97.81	...	97.81	105.00	...	105.00	89.55	...	89.55	85.00	...	85.00
17.	Scholarships for Science in Higher Education (Oversight Committee Recommendation)	3425	39.91	...	39.91	60.00	...	60.00	75.00	...	75.00	...	...	...
18.	Water Technology Initiative	3425	14.35	...	14.35	40.00	...	40.00	30.00	...	30.00	...	...	...
19.	Innovations in Science Pursuit for Inspired Research (INSPIRE)	3425	230.38	...	230.38	300.00	...	300.00	255.00	...	255.00	...	...	...
20.	Innovation Clusters	3425	7.00	...	7.00	7.00	...	7.00	12.00	...	12.00	...	...	...
21.	Security Technology Initiative	3425	6.05	...	6.05	7.00	...	7.00	4.70	...	4.70	...	...	...
22.	Mega facilities for Basic Research	3425	24.78	...	24.78	35.00	...	35.00	20.00	...	20.00	30.00	...	30.00
23.	Science and Engineering Research Board	3425	...	...	...	300.00	...	300.00	200.00	...	200.00	400.00	...	400.00
24.	Policy Research Cell	3425	...	...	...	...	...	...	...	...	...	10.00	...	10.00
25.	Disha Programme for women in Science	3425	...	...	...	...	...	...	...	...	...	49.00	...	49.00
26.	Alliance and R&D Mission	3425	...	...	...	...	...	...	...	...	...	400.00	...	400.00
Total-Science and Technology			1919.09	32.64	1951.73	2324.00	51.55	2375.55	2224.06	29.90	2253.96	2437.00	47.85	2484.85
Total-Other Scientific Research			1932.89	304.00	2236.89	2349.00	338.25	2687.25	2252.00	307.90	2559.90	2477.00	349.07	2826.07
Grand Total			1932.89	346.44	2279.33	2349.00	384.00	2733.00	2252.00	353.50	2605.50	2477.00	396.22	2873.22
			(in crores of Rupees)											
	Head of Dev	Budget Support	IEBR	Total	Budget Support	IEBR	Total	Budget Support	IEBR	Total	Budget Support	IEBR	Total	
C. Plan Outlay														
1.	Other Scientific Research	13425	1932.89	...	1932.89	2349.00	...	2349.00	2252.00	...	2252.00	2477.00	...	2477.00

1. **Secretariat - Economic Services:** Provides expenditure for the Secretariat of the Department of Science and Technology (DST).

2. **Modernisation of Mapping Organizations (Sol and NATMO):** Survey of India (Sol) and National Atlas and Thematic Mapping Organization (NATMO) are operationally two different entities, but insofar as the budget outlays are concerned the two schemes have been merged and renamed as Modernization of Mapping Organizations. The Survey of India, the principal national

surveying and mapping organization is mainly responsible for producing topographical maps and providing survey support to the defence forces and various national development projects in the country.

The National Atlas and Thematic Mapping Organization set up in 1956 primarily aims at preparing National Atlas of India. Subsequently, its scope and activities were extended to new fields of geographical research, thematic mapping covering all the academic and applied aspects of geography and allied subjects.

3. **Autonomous Institutions & Professional Bodies:** There are 23 independent autonomous institutions and professional bodies situated at different locations of the country having different mandates. However, insofar as the budget outlays are concerned these schemes have been merged and renamed as - Autonomous Institutions & Professional Bodies. As per guidelines issued by the Planning Commission allocations have been earmarked for spending under the SCSP ₹ 12 crore and TSP ₹ 12 crore.

4. **Research and Development Support - Multidisciplinary Research in Science and Technology (SERC):** The Department of Science and Technology, as a part of its S&T promotional activity has been supporting R&D programmes under Science and Engineering Research Council (SERC). As per guidelines issued by the Planning Commission allocations have been earmarked for spending under the SCSP ₹ 8 crore and TSP schemes ₹ 8 crore. This includes the new initiatives 'Programme for Research Initiatives in Mathematics Education (PRIME)' and 'Empowering Opportunities for Excellence in Science for SC&ST'.

5. **Programme for Special Technology Development & Coordination (Technology Development Programme):** The programme is aimed at developing indigenous technology through joint projects with industry and socio-economic Ministries. It also includes activities relating to development of Natural Resources Data Management System (NRDMS), Patent Facilitating Cells (PFC), Instrument Development Programme (IDP), Joint Technology Projects (JTP), Inter-Sectoral S&T Advisory Council (IS-STAC), Disaster Management Cell (DMC), National Spatial Data Infrastructure (NSDI), Fly Ash Unit (FAU), National Good Laboratory Practices Compliance Monitoring Authority (NGLPCMA), National Mission on Climate Change and Solar Energy Research Initiative (SERI). As per guidelines issued by the Planning Commission allocations have been earmarked for spending under the SCSP Scheme ₹ 6 crore and TSP Scheme ₹ 6 crore.

6. **Technology for Bamboo Products (Mission Mode Project):** The programme would impart a significant boost to the usage of bamboo, promote specialized products for commercialization and would generate good employment opportunities. New tools and techniques would be introduced to enhance the manner in which the bamboo resources are used in the country leading to greater efficiencies and a sensitive use of new materials. As per guidelines issued by the Planning Commission allocations have been earmarked for spending under the TSP Scheme. This scheme has been merged with 'Technology Development Programme'.

7. **S&T Programme for Socio-Economic Development:** The following plan schemes: S&T Entrepreneurship Development, Science & Society Programme, Women Component Plan, S&T Communication & Popularization, which were hitherto separate Plan schemes have now been merged and renamed as - S&T Programme for Socio Economic Development - insofar as budget outlays are concerned. The Scheme SCSP has helped in demonstrating technology packages and enhancing livelihood opportunities for SC population by capacity in several sectors in association of S&T based field groups and S&T institutions. The beneficiaries under this scheme are SC community only. Tribal Sub Plan (TSP) Scheme has achieved significant breakthroughs in developing and demonstrating technology packages in several sectors with the association of S&T based field groups and S&T institutions working in tribal areas. DST role in these initiatives has been catalytic where technology development and demonstration aspects are focused. As per guidelines issued by the Planning Commission allocations have been earmarked for spending under the SCSP ₹ 9 crore and TSP schemes ₹ 5 crore.

8. **State Science & Technology Programme:** The objective is to establish and support State Councils for S&T to act as focal points in the States and Union Territories for planning, guiding, evaluating, monitoring, co-coordinating and in general spreading Science and Technology activities at State level. As per guidelines issued by the Planning Commission allocations have been earmarked for spending under the SCSP ₹ 5 crore and TSP schemes ₹ 5 crore.

9. **International Cooperation: (Indo US S&T Forum, Indo French Centre for Promotion of Advanced Research, S&T Programme of Cooperation with Other Countries and Indo German Science & Technology Centre):** This includes the programs of S&T cooperation with the United States of America, France, Germany and other developed and developing countries to undertake collaborative projects in the identified thrust areas in frontiers of S&T and programs of cooperation in related areas of science for basic research and to explore other possible areas for future cooperation. This includes annual contributions to Centres for the Non Aligned and Other Developing Countries and the International Council of Scientific Unions and affiliated Unions and Committees.

10. **Payment to Technology Development Board against Cess Receipts:** The provision is for payment to Technology Development Board against net proceeds of cess realized under Technology Development Board Act, 1995. The Board has been set up to help the indigenously developed technologies reach the stage of commercial application.

11. **Information Technology:** The scheme pertains to expenditure incurred on Information Technology (IT) e-Governance and related areas.

12. **National Training Programme for the Scientists/Technologists working with the Government of India:** This is an initiative undertaken with a view to provide holistic training to scientists working in the Government sector and aims at empowering scientists with capabilities.

13. **Other Programmes:** This depicts Exhibitions and Fairs as well as the capital expenditure relating to special construction work-building and air-conditioning and equipments of the Secretariat.

14. **Synergy Projects (O/o Principal Scientific Adviser):** The scheme is operated by the Office of the Principal Scientific Adviser to the Government of India. The objective of having a separate budget allocation is to enable that Office to play a catalytic role in taking up selective R&D and technology development projects in a number of important areas where multiple scientific and technological agencies are involved. This includes the new Externally Aided Project 'Coordination and Harmonization of Advanced e Infrastructures (CHAIN)' funded by the European Union.

15. **Drugs & Pharmaceuticals Research:** The scheme is to be used for the purpose of supporting research and development programmes and setting up of national facilities for furthering R&D activities in the country.

16. **National Mission on Nano Science & Nano Technology:** The following areas of research have been identified for immediate attention:

- a. studies of free atomic and molecular clusters, cluster assembled materials, low-dimensional structures and quantum dots,
- b. nano-electronics and nano-photonics,

c. applications: nano-coatings, nano-device based sensors and diagnostics kits, controlled and targeted drug delivery systems, nano-phosphor based display devices, etc..

17. **Scholarships for Science in Higher Education (Oversight Committee Recommendation):** As per the recommendation of the Oversight Committee a new scholarship initiative-commencing at the pre-university stage to tap and retain bright science students in science streams during their BSc./MSc. programmes is expected to provide an annual accretion of 10,000-best in class-future researchers per year, which should enable India to become a Global Corporate Research Hub. This has been merged into the new scheme 'Alliance and R&D Mission'.

18. **Water Technology Initiative:** The focus of the program is in design and development of low cost solutions for domestic use of technologies for safe drinking water. Since quality is the main consideration of safe drinking water research, such technologies which employ nano materials and filtration technologies are being focused. The multi-component programme on water, proposed to be launched by this department in response to the directive of the Supreme Court to address the water shortage problem, is a collaborative initiative with other knowledge partners to explore and understand the scientific basis of the domestic water problem being faced in different pockets of the country and apply suitable technological interventions, that are acceptable at the local level, for alienating the problem. This scheme has been merged with 'Technology Development Programme'.

19. **Innovations in Science Pursuit for Inspired Research (INSPIRE):** This is to attract and foster talent in scientific research. A separate scheme is being proposed. The scheme draws benefits from the previous experience in the education sector, but aims to expand the scale to gain critical size and mass. This scheme has been merged with the new scheme 'Alliance and R&D Mission'.

20. **Innovation Clusters:** Whereas the education and industrial infrastructure in the country are developing in parallel, there is a need to develop an innovation infrastructure to link knowledge products to the generation of wealth. Competitiveness innovation clusters are emerging in global platform. Numerous success stories of such innovation clusters benefiting the academy and industrial sectors have been reported. It is necessary for India to mount such an initiative under an effective public-private partnership model in areas where the trade and advantages have already been established and the clustering processes are evident. Evidence based selection of the sectors and locations for innovation clusters will be essential. The 'Industrial Component' of this scheme has been merged with 'S&T Programmes for Socio-Economic Development' and the 'Cognitive Science' component has been merged with 'R&D Support'.

21. **Security Technology Initiative:** Internal security is a subject of concern in modern civilizations in many countries. A science and technology initiative in the area of security is essential. This technology would involve a careful selection and symbiosis of many disciplines. A knowledge and innovation network and carefully designed initiative is considered necessary. Since DST enjoys the benefit of linkages with a vast network of institutions, it has already made a preliminary attempt to the structure and implement the national initiative.

22. **Mega Facilities for Basic Research:** Basic research in the country has been depending upon mega and capital intensive facilities created by other countries. This practice has led to asymmetries in credit sharing. Further, Indian expertise to build advance scientific instruments and devices does not get fostered outside the strategic areas of research where technology denial forces building of capacities. DST along with Department of Atomic Energy has identified areas where an

effective partnership of the two departments can bring about an effective capacity building in the university and academic sector for building mega facilities for basic research.

23. **Science and Engineering Research Board (SERB):** Supporting basic research in emerging areas of Science and Engineering will be the primary and distinctive mandate of the board. The board's structure, with both financial and administrative powers vested in the board will enable quicker decisions on research issues. As per guidelines issued by the Planning Commission allocations have been earmarked for spending under the SCSP ₹ 3.93 crore and TSP schemes ₹ 7.93 crore.

24. **Policy Research Cell:** PRC spearheads the design policy instruments for building academy-research-industry collaborations; preparation of study reports of STI policies of developed and emerging economies; periodical dialogues and discussions with stake holders, national and international policy experts, socio economic ministries, industrial leaders and develop policy papers for research and development sector as inputs for decision making; advise general directions in policy environment for increasing the private sector investment into R&D; advise measures for re-engineering and rationalization governance processes to suit the special needs of the Indian science sector etc.

25. **Disha Programme for Women in Science:** Disha is a special scheme to facilitate the mobility of women scientists. This scheme aims to avoid or reduce difficulties faced by employed women in mid career to move from one place of employment to another within in India on account family reasons. As per guidelines issued by the Planning Commission allocations have been earmarked for spending under the SCSP ₹ 1 crore and TSP schemes ₹ 1 crore.

26. **Alliance and R&D Mission:** This component includes the schemes like Building Educators for Science Teaching (BEST), Innovation in Science Pursuit for Inspired Research (INSPIRE), Scholarship for Higher Education (SHE), Public Private Partnership (PPP) for R&D, PAN INDIA S&T MISSIONS, CLIMATE CHANGE PROGRAMME, Establishment of Joint (virtual) Centres etc. As per the guidelines of the Planning Commission allocations have been earmarked for spending under the SCSP ₹ 17 crore and TSP Schemes ₹ 17 crore.