

CHAPTER - 16

SCIENTIFIC SERVICES AND RESEARCH

16.1 The Scientific Services and Research head covers Science and Technology Department and Environment Department.

16.2 Against a provision of ₹ 29.70 crores for the Eleventh Five Year Plan, ₹ 13.01 crores were spent upto 2009-10 and ₹ 1877.15 lakhs are likely to be spent during the year 2010-11. A sum of ₹ 3051.78 lakhs are proposed for the Annual Plan 2011-12, which includes ₹ 610.22 lacs for Science & Technology, ₹ 64.56 lacs for Environment Department, ₹ 1277.00 lakhs for National Lake Conservation Plan (NLCP), ₹ 100.00 lakhs for Common Effluent Treatment Plants (CEPT) and ₹ 1000.00 lakhs for National River Conservation Plan (NRCP).

Science & Technology Department

16.3 Since inception of the department and its associated council (RAJCOST) in the year 1983, it has been the endeavor of Government to initiate, support, promote and coordinate the activities in the field of science & technology by taking up of application oriented research and development projects relating to transfer of technology, popularization of science by effective application of modern technology of Remote Sensing, Biotechnology and Entrepreneurship Development.

16.4 With the objective of training the district and Panchayat Samiti level functionaries of various departments and interactive communication a satellite network (SATCOM) has been set up in the state. The Satellite Communication Network comprises of an Integrated HUB at Indira Gandhi Panchayati Raj Sansthan (IGPRS), Jaipur, 33 Satellite Interactive Terminals (SITs) at Zila Parishads and 237 Receive Only Terminals (ROTs) at all 237 Panchayat Samiti Head Quarters. The SATCOM Studio at Indira Gandhi Panchayati Raj Sansthan (IGPRS), Jaipur has been launched in 2010-11. The network will be used by various line departments of State for training and extension activities and relay of their development activities.

16.5 In order to harness the creativity of people at grass roots level and facilitate people to people networking among the innovators a GIAN Centre is functional since 2004 in the State in coordination with Honey Bee network and SRISTI of IIM, Ahmadabad and NIF.

16.6 Against a provision of ₹ 25.00 crores for the XIth Five Year Plan, ₹ 11.35 crores was spent upto 2009-10 and ₹ 5.00 crores will be spent during the year 2010-11. A sum of ₹ 610.22 lakhs is proposed for the year 2011-12 for various on-gong activities.

16.7 The existing science park at Jaipur has been upgraded as regional science centre with the technical support of NCSM, Kolkata, an autonomous body under the Ministry of Culture, Government of India.

Research & Development Division

16.8 The main objective of this division is to promote application oriented research in the field of Science & Technology in the State. The major challenges to R&D are (a) most Universities are functioning with sub-critical staff in Rajasthan; (b) need for right sizing Universities with regard to faculty and educational strength and (c) inadequate availability of financing for research activities. Universities of Rajasthan need additional support to take up research projects. In the backdrop of additional allocations for promotion of research and development support to Universities, a provision of ₹155.00 lacs are proposed for the year 2011-12 for various activities. This incorporates the R&D activities in the recent and advance sector of Nano Technology. For this purpose a sum of ₹ 37.00 lakhs has been proposed for research project and for organizing workshops/seminars/conference etc. The major activities of this division are as follows:

- a) Assistance to Research & Development projects – 30 new research projects will be sanctioned for promotion of research work in R&D institutions of the State including Universities and affiliated colleges;
- b) Workshops/Seminars/Conferences – Seminars will be conducted in 2011-12 for dissemination of latest developments in R&D
- c) Student Projects Program – 210 student projects each amounting to ₹ 15000/- would be sanctioned in 2011-12.

Science & Society Division

16.9 The Programs & activities under Science & Society Division are primarily focused to disseminate key technologies developed by National Institutions/Research Organizations. The broad objective of the programs/ activities under Science & Society Division is "to transfer the proven technologies at the grass root level for socio economic upliftment of general masses."

16.10 Major activities under the division are:

- a) Support Special & pilot projects on appropriate Technologies.
- b) Science & technology Resource Centers
- c) Science & technology for Women
- d) Technology procurement & software Development
- e) Technology day celebration

16.11 A sum of ₹ 176.75 lacs is proposed for the year 2011-12. Rajasthan has submitted 10 project proposals under the Technology

Mission: War for Water, seeking technology solutions for addressing ground water problems of States including salinity and excess fluoride. Safe drinking water has been identified as thrust area for the year 2011-12 considering the fact that nearly 20000 villages of the State affected by water quality problem.

Science Communications and Popularization Division

16.12 The main objective of this division is communication & popularization of science programs to generate scientific temper among the student community. The main activities of this division are Science Centre, Science Park, Contest Programs, National Science Day, Science Clubs, Children Science Congress, Competitions. A sum of ₹ 185.05 lakhs is proposed for the year 2011-12. The following are the major activities being taken up in 2011-12 in the Science Communications and Popularization Division:-

S. No	Name of Scheme/Programme	Proposed Outlay 2011-12			Physical Target
		Com.	New	Total	
1.	Science Club	10.00	-	10.00	200
2.	National Science Day	5.00	-	5.00	1
3.	School Science Centre	1.00	-	1.00	10
4.	Science Centre Development & Activities i. Science Centres /Science Park Development (Science Park Division)	45.00	-	45.00	
5.	Science Centre Activities	2.00	-	2.00	16
6.	Contest Programme	11.80	-	11.80	21
7.	Programme & Activities of Popularizations of Science	10.00	-	10.00	52
8.	Teacher Science Conference/ Children Science Congress	4.00	-	4.00	7
9.	Science Park Activities	1.00	-	1.00	
	(A)Publicity	7.00	-	7.00	
	(B)Publication	3.25	-	3.25	
10.	Science Parks / Science Centre's repair & maintenance (Jaipur : Rs. 40.00 Jhalarapatan : Rs. 30.00 other centres Rs. 15.00 lakh)	85.00	-	85.00	
Total		185.05		185.05	307

Remote Sensing Division

16.13 In Rajasthan, Remote Sensing Activities started with the establishment of "Aerial Photo Interpretation Laboratory (APIL)" at Jodhpur in 1979 as a part of Desert Development Program to assist Soil and Water Conservation Planning in the State.

16.14 In 1985 looking to multi-disciplinary utility of the Remote sensing Technology, the laboratory was transferred to State Department of science and Technology and renamed as "State Remote Sensing Application Centre (SRSAC)."

16.15 Remote sensing techniques, in conjunction with ground surveys offers an efficient, time saving and cost effective method for assessment of natural resources on repetitive basis for planning the developmental activities of the State. The technology comprises of application of three components, satellite data, air borne data and ground data. Remotely sensed data has relevance to major sectors of economy such as Agriculture, Forestry, Irrigation, Human Settlement, and Geology through the optimal use of land, water, mineral resources. Remote Sensing is an emerging technology, which contemplates collection of spatial, spectral and temporal data of earth's surface using air and spacecraft. It provides a powerful tool for evaluation of Natural Resources (both renewable and non-renewable) with speed, accuracy and economy. A provision of ₹ 47.00 lakhs is proposed for the year 2011-12.

S. No	Activity	Proposed Outlay 2011-12
1.	National (Natural) Resource Information System (NRIS)	6.00
2.	Establishment of Remote Sensing Cell - Jaipur	12.00
3.	Satellite Based Communication Network (SATCOM)	15.00
4.	Diploma Courses in Remote Sensing & GIS	14.00
TOTAL		47.00

Satellite based Communication Network (SATCOM):

16.16 SATCOM is operational in State, Integrated HUB at Indira Gandhi Panchayat Raj Sansthan (IGPRS), Jaipur is being used for Telemedicine, Edusat and Gramsat activities. Under Gramsat activity satellite interactive Terminals (SITs) at Zila Parishad Headquarters and Receive Only Terminals (ROTs) at the Panchayat Samiti Headquarters have been installed. Studio is also operational at IGPRS, Jaipur. The Network is being used by various departments of the State for training, extension activities and relay of their development activities. ROT at 237 Panchayat Samiti Headquarters and SIT at 32 Zila Parishad have already been installed for one time maintenance of these and for operation and

maintenance of the network an amount of ₹ 15.00 will be required during the year 2011-12.

Entrepreneurship Development Division

16.17 Developing entrepreneurship amongst graduates can provide highest dividend to society as compared to any other category. Efforts are being made to organize result oriented activities by involving small scale industrial sector of the state as well as financial institutions for tapping natural/financial resources available within the State. This is to generate "Self Employment" opportunities and a feeling of self reliance among youths. To achieve these goals, a sum of ₹ 8.25 lakhs is proposed for the year 2011-12.

Biotechnology Division

16.18 The main objectives of this division are to create strong academic base, to create grass root awareness regarding sector, to generate human resource, to invite Biotech Industries in the state. Government of Rajasthan has constituted a State Biotechnology Advisory Board under the chairmanship of Hon'ble Chief Minister comprising of eminent scientists, subject experts and concerned secretaries to the government. The Board is an autonomous body attached to the Department of Science & Technology and aims to promote enterprise in Biotechnology by:

- a) Ensuring proper scientific coordination amongst different institutions and universities of state for rendering advice in matters related to Biotechnology.
- b) Exploring opportunities for collaborative research.
- c) Assisting in mobilizing resource, technology & financial for ensuring that the state attains a prime position in biotechnology.
- d) Providing a policy framework on human resource development, techno infrastructure, bio safety and bio surveillance.

16.19 For activities of this division, a provision of ₹ 31.72 lakhs is proposed for the year 2011-12.

Patient Information Centre

16.20 For the activities of this division, ₹ 3.45 lakhs are proposed for the year 2011-12.

Environment Development

16.21 The Environment Department was created in 1983 to act as a nodal agency in the state in matters related to preservation of ecological balance, research and studies on environmental matters and prevention and control of soil, water and atmospheric pollution and issues of Rajasthan Pollution Control Board (RPCB).

16.22 The Environment Department has been creating Environmental awareness through a number of education programs from primary level to All India level in co-ordination with Education Department, institutions like Lalit Kala Academy and NGOs. An outlay of ₹ 64.56 lakhs is proposed for the year 2011-12.

16.23 The Ministry of Environment and Forests, Government of India has issued a notification on 14th September, 2006 for constitution of State Level Environment Impact Assessment Authority in consultation with the Central Government. Henceforth, from the date of its publication the construction of new projects or activities or the expansion or modernization of existing projects or activities listed in the schedule of this notification entailing capacity addition with change in process and or technology shall be undertaken only after the prior environmental clearance from the Central Government or as the case may be from the State Level Environment Impact Assessment Authority. Vide this notification, the environmental clearance in many projects/ activities will be given by the State Level Authority. This work will involve scrutiny of such proposals by an Expert Committee

16.24 For processing the cases to be put up before SEIAA and SEAC and to work as its Secretariat an Environment Clearance Cell has been set up. ₹ 14.53 lakhs are proposed for this cell.

16.25 Different activities of the Department, legislative decisions, various on going schemes and various facts related to Environment for message on the occasion of 3 International days viz. Earth Day (22 April), Environment Protection Day (5 June) and Ozone Layer Conservation Day (16 September) will be publicized through print and electronic media ₹ 10.00 lacs for each day is being proposed. Therefore in this scheme a provision of ₹ 30.00 lakhs are proposed in the Year 2011-12. In addition to this, Publicity is also required to be done to print and electronic media for various environmentally sensitive issues for which ₹ 20.00 lakhs are proposed.

National River Conservation Plan (NRCP)

16.26 NRCP project originally a 100% Centrally Sponsored Scheme is now a 70:30 scheme between the Central and State Government. This project was being implemented by PHED but now it is being implemented by LSG through UIT, Kota. The State Share of ₹ 1000.00 lakhs are kept for the financial year 2011-12.

National Lake Conservation Plan (NLCP)

16.27 Under the Central Sponsored Scheme for the conservation of lakes (NLCP), 6 lakes of the State viz. Man Sagar, Ana Sagar, Pushkar, Fateh Sagar, Pichhola and Nakki lakes are covered. The work of Mansagar Lake is complete. The works of other 5 lakes are on-going. Under this scheme State Government has to provide 30% share as decided in the meeting of

the Standing Committee for Lake/River Development and Policy Formulation provision for State Share for NLCP is kept in the budget head of Environment Department. A provision of ₹ 1277.00 lakhs is proposed as State Share for this purpose for financial year 2011-12.

Common Effluent Treatment Plants (CEPT)

16.28 A new Scheme for establishment of new CETP/up gradation of old CEPT at Jasole, Pali, Balotra, and Jodhpur is started from the year 2010-11. This scheme is funded under CSS and will be implemented by the district water pollution control & treatment foundation trust. In this scheme 25% of the total project cost will be borne by Central Govt in form of subsidy., 25% of cost will borne by State Govt. 20% share will be borne by entrepreneurs and 30% will be arranged by loan from financial institutions. Total State Share for the scheme comes out the ₹ 1062.18 lacs. Against this State share of ₹ 2.00 crore was released in 2009-10. Remaining State Share of these CEPT i.e. ₹ 862.00 lakhs will be released in next years. The State Pollution Control Board will make advance payment of the state share. State Govt. will pay back to RSPCB. A provision of ₹ 100.00 lakhs is proposed for the year 2011-12.