

9. SCIENCE, TECHNOLOGY AND ENVIRONMENT

11th Plan Outlay - Rs. 29717.00 lac
Annual Plan 2007-08 Outlay - Rs. 4031.50 lac

9.1 SCIENTIFIC RESEARCH

11th Plan Outlay - Rs. 1137.00 lac
Annual Plan 2007-08 Outlay - Rs. 565.00 lac

9.1 Science and Technology has to play a vital role in improving productivity, conserving resources and protecting the environment. As a result of the enormous capabilities and continuous advances in Science and Technology, new possibilities are opening up every day. A continuous improvement in the quality of life of human beings is the central objective of development and this can be achieved by harnessing the potential of Science and Technology focusing on innovative strategies and adopting pathways which ensure a sustainable future. The Punjab State Council for Science & Technology (PSCST) draws inspiration from this philosophy and endeavors to use Science & Technology as an instrument of socio-economic change in the State of Punjab. Against the approved outlay of Rs. 3303.00 lac, an expenditure of Rs. 1266.18 lac has been incurred during 10th Plan.

9.2 The State Government has decided to locate (1) National Agri-food Bio-Technology Institute, Bio-processing Unit and Bio-Tech Park, (2) Indian Institute of Science Education and Research, (3) National Institute of Nano Technology & (4) Premier Management Institute in Knowledge City in Sector 81, S.A.S Nagar. Land measuring 391.57 acres has been acquired in sector 81, S.A.S Nagar, out of which land measuring 10 acres is under court stay. The land measuring 381.38 acres has been acquired.

9.3 The Department of Science & Technology has been developing four Wetlands namely Harike Wetland, Kanjli Wetland, Ropar Wetland and Ranjit Sagar Wetland under 100% Centrally Sponsored Programmes. For this purpose, an outlay of Rs 1375.00 lac for 11th Plan and Rs 275.00 lac for 2007-08 has been provided.

9.4 An outlay of Rs 1137.00 lac has been provided for 11th Plan (2007-12) and Rs 565.00 lac for Annual Plan 2007-08 for implementation of the various Scientific Research Programme in the State.

**On Going Schemes
Centrally Sponsored/ Funded Schemes**

SR 1/SR 1.13 Pupshpa Gujral Science City at Kapurthala (70:30)

11th Plan Outlay - Rs. 750.00 lac
Annual Plan 2007-08 Outlay - Rs. 450.00 lac

9.5 In order to inculcate scientific temperament amongst the younger citizens and general public of the state of Punjab and its surrounding states of Haryana, Himachal Pradesh and J&K, the Science City has been set up at Kapurthala. The total cost of the project is Rs. 10000.00 lac, which will be funded by Govt. of India and the State will provide developed land and Infrastructure for this project. Rs.7000.00 lac will be provided by Govt. of India while Rs.3000.00 lac would be State share. Out of GOI share of Rs 7000.00 lacs, an amount of Rs 6251.00 lac have been received. Similarly, against the State share of Rs 3000.00 lac, an amount of Rs 2250.00 lac has been received. An amount of Rs 750.00 lac (State share) has been provided for 11th Five Year Plan and Rs 450.00 lac (State share) for Annual Plan 2007-08.

SR 2/SR1.6(b) Popularization of Science (50:50)

11th Plan Outlay - Rs. 150.00 lac
Annual Plan 2007-08 Outlay - Rs. 20.00 lac

9.6 This is a Centrally Sponsored Scheme on 50:50 sharing basis with GOI. The main objective of the scheme is to organize workshops, exhibitions, seminars and training programmes for students in collaboration with educational institutions and education department. This scheme contains the following three components:-

- (1) Organizing of National Science Day, National Technology Day and Children Science Congress
- (2) Taking science to Students
- (3) Demonstration of New Scientific Technologies

9.7 Against the approved outlay of Rs.33.00 lac, an expenditure of Rs 2.00 lac has been incurred during 10th Plan. An expenditure of Rs 2.00 lac has been incurred during 2006-07. Under this scheme, an outlay of Rs. 150.00 lac and Rs 20.00 lac has been provided as state share for 11th Five Year Plan and Annual Plan 2007-08.

SR 3/SR 1.10 (b) Setting up of Bio-technology Incubator in Punjab (66:34).

11th Plan Outlay - Rs. 137.00 lac
Annual Plan 2007-08 Outlay - Rs. 75.00 lac

9.8 The aim of the scheme is to develop Biotechnology Incubator comprising testing and certification facilities for agri produce and products and to cater to farmers and biotech industry in Punjab. Land measuring 15 acre has been earmarked for Bio- processing unit including Biotechnology Incubator in Knowledge City, Sector-81, SAS Nagar, Mohali. The total cost of the Bio-technology Incubator is Rs 1097.00 lac of which state share will be Rs 352.00 lac. Government of India has already released Rs 387.00 lac and state Government has released Rs 215.00 lac. An expenditure of Rs 594.00 lac (Rs 379.00 GOI and Rs 215.00 lac GOP) has been incurred up to 31/3/2007. This Incubator has presently been made operational at SCO No.8, 3rd floor, Phase-V, S.A.S. Nagar in hired premises and would be shifted to Sector-81, as and when, the Bio-technology is ready. Under this scheme, an outlay of Rs. 137.00 lac and Rs 75.00 lac has been provided as state share for 11th Five Year Plan and Annual Plan 2007-08.

State Funded Schemes

SR 4 /SR 1.17 Bio-diversity Conservation in Punjab.

11th Plan Outlay - Rs. 25.00 lac
Annual Plan 2007-08 Outlay - Rs.7.00 lac

9.9 The Punjab Biodiversity Board (PBB) has been set up as a Statutory body under Section 22 of the Biological Biodiversity Act, 2002 of Govt. of India. As per the Act, the funds (called “State Biodiversity Fund”) are to be provided by the State Govt. The Punjab Biodiversity Board is responsible to advise the State Govt. on matters relating to sustainable use and conservation of biodiversity, regulate granting of approval of requests for commercial utilization, ensure equitable benefit sharing of economic benefits from use of these resources with local communities. The Board will scrutinize applications received from commercial entities for use of biological resources of the state. The Board will also facilitate setting up of technical support groups at district level and Biodiversity Management Committees at local level in rural & urban areas. These committees will help the Board and the National Biodiversity Authority in assessing the local biological resources and maintain records of collection of these resources from the state.

9.10 The Biodiversity Management Committees have to be constituted at the level of local bodies under Section 41 of the Biological Diversity Act, 2002. These committees will coordinate biodiversity access and conservation at local level and maintain data of local practitioners and persons whose livelihood depends on local biological resources. An outlay of Rs. 25.00 lac has been provided for 11th Five Year Plan and Rs 7.00 lac for Annual Plan 2007-08.

SR 5 /SR 1.1 Pilot Trials Extension Through Approved Institutions.

11th Plan Outlay - Rs.50.00 lac
Annual Plan 2007-08 Outlay - Rs. 8.00 lac

9.11 Under this scheme, applied research projects/pilot projects are being taken up. These include school/community level projects for demonstration of benefits of rain water harvesting, demonstration of low cost technologies, environment audit projects of schools for involving students in studying their environment and its improvement, applied research projects from universities and research institutions, including the council; data collection and survey projects in the field, ethnobiological documentation projects, etc. Against the approved outlay of Rs 90.00 lac, an expenditure of Rs 1.00 lac has been incurred during 10th Plan. Under this scheme an outlay of Rs. 50.00 lac has been provided for 11th Five Year Plan and Rs.8.00 lac for Annual Plan 2007-08.

New Schemes

State Funded Schemes

SR 6 Promotion of Bio-technology in Punjab.

11th Plan Outlay - Rs. 25.00 lac
Annual Plan 2007-08 Outlay - Rs.5.00 lac

9.12 The application of Bio-technology have great potential for creating new jobs through value added products and for generation of non- pollution and an environment friendly technologies. For creating public awareness about the potential of Bio-technology various programmes have been started such as training programmes/ workshops and publication of literature on techniques and application of technologies. Under this scheme an outlay of Rs. 25.00 lac has been provided for 11th Five Year Plan and Rs.5.00 lac for Annual Plan 2007-08.

9.2 ECOLOGY AND ENVIRONMENT

11th Plan Outlay - Rs. 19130.00 lac
Annual Plan 2007-08 Outlay - Rs.1204.00 lac

9.2.1 In the name of development and betterment of humanity, man has been disrupting and destroying what Nature built up over billions of years. Earth's natural resources are being rapidly depleted, forests are being decimated, innumerable animal species are being eliminated, river lakes, streams and wells

are being poisoned with toxic substances, air is being fouled with noxious emissions from factories and automobiles and land is being degraded with chemicals. The wounds inflicted on the environment are so severe that Nature has started sending warning signals in the form of droughts, floods, vast changes in climatic patterns, global warming acid rains, sprawling desertification and depletion of atmospheric ozone shield. The State Government has constituted the Punjab Pollution Control Board (PPCB) in August, 1975 for the prevention control and abatement of water and air pollution and to maintain and restore the quality of water and quality of air in the state.

On Going Schemes State Funded Schemes

EE 1/EE 1.22 Joint Programme with UNESCO

*11th Plan Outlay - Rs. 10.00 lac
Annual Plan 2007-08 Outlay - Rs. 2.00 lac*

9.2.2 Punjab State Council for Science and Technology has taken up several joint programmes with UNESCO which attractive International funding. These programmes are partially funded by UNESCO and Infrastructural support is provided by State Government. These programmes also help to promote environment education in Technical and Vocational Education and Natural Resources Conservation projects in the State. An outlay of Rs. 10.00 lacs has been provided for 11th Five Year Plan and Rs.2.00 lac for Annual Plan 2007-08

EE 2/ EE 1.23 Conservation and Management of State Wetlands.

*11th Plan Outlay - Rs. 15.00 lac
Annual Plan 2007-08 Outlay - Rs.1.00 lac*

9.2.3 Punjab has several natural and manmade wetlands which are performing vital ecological functions like groundwater recharge, sullage water purification and providing water for various activities in rural areas. These wetlands are an integral part of our ecosystem. Wetlands of international importance are being supported by Govt. of India but the state government has to take action for conserving wetlands of state importance. The natural wetlands in the state, which were roughly occupying more than 23000 acre area have been under massive stress due to reclamation for agriculture, degradation, etc. Several such wetlands which existed during 1940s have therefore gone extinct like Bhupinder Sagar, Chhangli Chhamb, Rahon da Chhamb, etc. Several other such wetlands are under stress like Dholbaha reservoir, Maili, Mangrowal, Nangal lake, Keshopurmaini wetland, Mand Bharthala, etc. This is affecting the groundwater recharge also. Hence, ecology of these areas need to be studied and immediate sites specific measures are required to be taken up these wetlands. Against the approved outlay of Rs 60.00 lac, an expenditure of Rs 6.00 lac has been incurred

during 10th Plan. An outlay of Rs. 15.00 lacs has been provided for 11th Five Year Plan and Rs.1.00 lac for Annual Plan 2007-08

New Schemes

State Funded Schemes

EE 3 Environmental Information System (ENVIS) Centre at PSCST

11th Plan Outlay - Rs. 5.00 lac
Annual Plan 2007-08 Outlay - Rs. 1.00 lac

9.2.4 A MoU was signed between Ministry of Environment & Forests, Govt. of India and Punjab State Council for Science & Technology on 28.2.2005 wherein it was stated that an ENVIS (Environment Information System) Centre on State Environment Issues and Water Resource Management will be functioning in PSCST, Chandigarh to fulfill the objectives of ENVIS capacity enhancement programme. The Centre is regularly collecting, compiling and analyzing state's specific data for use by government departments and policy makers to adopt appropriate environment protection measures. This information is also available on the internet for use by general public, teachers, students, researchers, etc. The Centre is maintaining and regularly updating websites (www.punenvis.nic.in) in English & Punjabi for the purpose and is responding to various international and national queries, thus providing service to the state. An amount of Rs. 5.00 lac has been provided for 11th Plan and Rs. 1.00 lac for Annual Plan 2007-08.

EE 4 Cleaning of Budha Nallah

11th Plan outlay - Rs. 18100.00 lac
Annual Plan 2007-08 outlay - Rs. 1000.00 lac

9.2.5 The scheme envisages the cleaning of Budha Nallah, which runs through the heart of Ludhiana City and empties into the Sutlej River. The length of the Budha Nallah is 46 Km. The Municipal Corporation, Ludhiana has already taken up the work of three Sewerage Treatment Plant (STPs) of 311 MLT each. One STP has already been commissioned and the remaining two are likely to be commissioned by December, 2007.

9.2.6 An amount of Rs 1000.00 lac has been provided the year 2007-08. During 2006-07, an amount of Rs. 100.00 lac was released for this purpose, out of the funds under Punjab Nirman Programme- State Level Initiative.

EE 5 Restoration of Ecology of Kali Bein.

11th Plan outlay - Rs. 1000.00 lac
Annual Plan 2007-08 outlay - Rs. 200.00 lac

9.2.7 The rivulet Kali Bein (now designated as Holy Bein) originates from village Dhanoa in Hoshiarpur District and travels along river Beas in a zigzag manner for 160 Km before ultimately joining River Beas upstream of Harike Wetland. Due to discharge of sewage, sullage from 8 towns and 45 villages falling in its catchment area into it, it had got heavily polluted. The Bein was infested with wheat growth impeding the free flow of water causing water logging at some points and depletion of underground water in villages. The project was conceived to clean the Bein by involving voluntary community participation. This project envisages stoppage of waste water from towns and villages, release of additional water- 500 cusecs from Mukerian Hydel Channel, remodeling of Bein, biofencing along the banks and development of catchment area. An amount of Rs 200.00 lac has been provided for the year 2007-08.

9.3 INFORMATION TECHNOLOGY

11th Plan Outlay - Rs. 9450.00 lac
Annual Plan 2007-08 Outlay - Rs. 2262.50 lac

9.3.1 In consonance with the national objective of making India a global IT Power and a front runner in the information revolution, the Government of Punjab set up the Department of Information Systems and Administrative Reforms (DISAR) by merging the Department of Administrative Reforms, Evaluation and the Computerization Wing of the Planning department with effect from 1.11.1998. The new Department of Information Technology (DoIT) has been entrusted with the following responsibilities-

- (1) To formulate the policy on the use of Information Technology in the State.
- (2) To formulate and implement a plan for introduction of Information Technology in the Punjab Administration at all levels, in coordination with the concerned Government Departments; and
- (3) To give technical advice to all the Government Departments regarding adoption of suitable information technology systems and for making appropriate arrangements to maintain the same.

9.3.2 The State has formulated an Information Technology Policy, 2001, to improve the overall economy, create employment potential, make the state globally competitive, provide world class infrastructure for industrial sector and citizen centered governance. The strategy would be to provide e-based business, institutional frame work, basic infrastructure, education, governance, public interface, human resource development and employment to develop information technology for the masses.

9.3.3 An outlay of Rs.9450.00 lac for the 11th Five Year Plan (2002-07) and Rs.2262.50 lac for Annual Plan 2007-08 has been provided under the

subhead “Information Technology”. This funding is to ensure that Punjab is able to attract info-tech industry to the state, while its youth and government servants are trained to upgrade their technological skills according to emerging IT requirements. The scheme-wise detail is given below-

On going schemes

Centrally sponsored/funded schemes

IT- 1/IS 2.1 State Share of Centrally Sponsored Scheme for Provision of Site preparation etc.(50:50)

11th Plan Outlay - Rs. 1000.00 lac
Annual Plan 2007-08 Outlay - Rs. 212.50 lac

9.3.4 Department of Information Technology, Government of India is implementing National e-Governance Action Plan (NeGAP) comprising Core Infrastructure – State Wide Area Network (SWAN), State Data Centre (SDC), e-District, 10 State Mission Mode Projects, Capacity Building etc. at the State levels. For all these initiatives, technical and financial assistance are being provided to the State Government for implementing them in collaboration with the line department. Central assistance under NeGP would be provided for projects like State Data Centre, e-district, PAWAN, etc.

9.3.5 An outlay of Rs.825.00 lac was provided in 10th Five Year Plan (2002-07) as State share under this (50:50) sharing scheme against which an expenditure of Rs. 215.68 lac was incurred on state plan side. An amount of Rs.1000.00 lac and Rs 212.50 lac each as state share and corresponding Government of India’s share has been provided for the 11th Plan and Annual Plan 2007-08 respectively.

State funded schemes

IT- 2/IS 1.1 Introduction of Computerization in Punjab Government Offices, Semi -Government Bodies and Offices including Maintenance and Upgradation of the Systems

11th Plan Outlay - Rs. 3500.00 lac
Annual Plan 2007-08 Outlay - Rs. 600.00 lac

9.3.6 The Department of Information Technology (DoIT) prepares and executes plans in collaboration with the concerned departments to leverage the power of Information & Communication Technology (ICT) as a vehicle for improved governance and service delivery to the citizens in different departments of the State Government. Under this scheme, the budget is usually required for Building IT infrastructure, Repair & maintenance, Up-grdataion of existing IT base, Development of software modules for application areas,

Provision of technical manpower & operational manpower including Data Entry Operators, Digitization of legacy data, Operation & Maintenance (O&M) and Other related activities in Government Departments. In the first phase, only public dealing departments and revenue generating departments have been taken up for computerization so as to improve the internal management and service delivery to the citizens.

9.3.7 On lines of the recommendations of Department of Information Technology, Government of India, the department proposes to setup Project e-Governance Mission Team (PeMT) for selected cases for carrying out the assessment of present initiatives and preparing a detailed strategy & action plan not only to improve the existing method of implementation but also to integrate the related projects for better management and efficiency.

9.3.8 An outlay of Rs.3500.00 lac was provided under the scheme in the 10th Plan against which an expenditure of Rs.1594.83 lac was incurred. An amount of Rs. 3500.00 lac and Rs.600.00 lac has been provided for the 11th Plan and Annual Plan 2007-08 respectively.

New Schemes

IT-3 Roll-out of SUWIDHA Project across the State

11th Plan Outlay - Rs. 3000.00 lac
Annual Plan 2007-08 Outlay - Rs. 500.00 lac

9.3.9 The State has implemented SUWIDHA project to provide citizen services in an integrated manner through a common citizen interface so that a citizen does not have to visit different offices for different services. There is an urgent need to upgrade the infrastructure of SUWIDHA Centres at District, Sub-Division and Block level. The department is in the process of executing the core projects of State Wide Area Network, State Data Centre and Common Service Centres, which would form the basis for the State Wide roll-out of computerization in various departments. All e-Governance projects would require the common infrastructure of SUWIDHA Centres at District, Sub-division and Block level for various services, which would further be integrated to the common services centres to be set up across the State in urban and rural areas. An amount of Rs. 3000.00 lac and Rs.500.00 lac has been provided for the 11th Plan and Annual Plan 2007-08 respectively.

IT 4 Building for construction of Information Technology Infrastructure for all e-Governance Projects.

11th Plan Outlay - Rs. 1200.00 lac
Annual Plan 2007-08 Outlay - Rs. 800.00 lac

9.3.10 At present, the Department of Information Technology (DoIT), Punjab is executing some of the key projects namely Punjab State-wide Area Network (PAWAN), State Data Center (SDC), Common Service Centers (CSC), SUWIDHA Centers and this would require setting up of new infrastructure as well as upgradation of existing infrastructure. This common shared infrastructure would further reduce the costs of implementing the projects on state wide scale. It is ,therefore, proposed to build SWAN Horizontal Connectivity, District Data Centers, Integrated Citizen Services (SUWIDHA) Centers. For this purpose an amount of Rs. 1200.00 lac and Rs.800.00 lac has been provided for the 11th Plan and Annual Plan 2007-08 respectively.

IT 5 Capacity Building for e-Governance projects

11th Plan Outlay - Rs. 750.00 lac
Annual Plan 2007-08 Outlay - Rs. 150.00 lac

9.3.11 To facilitate the State administration and to carry out the groundwork for the on-going and new e-Governance initiatives involves preparation of project proposals, implementation the projects and overseeing O&M thereafter. To build capacities at district levels preparation of scope of work, preparing RFPs, making internal note-sheets for getting approvals/ sanctions, selection of external agencies, managing and getting the best out of external agencies, internalizing the outputs/ reports of the external agencies and quality assurance, doing cost-benefit analysis amongst various technological and other policy options etc. would be taken up under this scheme. An amount of Rs. 750.00 lac and Rs.150.00 lac has been provided for the 11th Plan and Annual Plan 2007-08 respectively.

Centrally sponsored schemes(100%) New Scheme

CS(IT)-2 Common Services Centres under National E Governance Action Plan (NEGAP)(100% CSS)

11th Plan Outlay - Rs. 1674.73 lac
Annual Plan 2007-08 Outlay - Rs. 429.00 lac

9.3.12 In order to build capacities in the state to formulate projects in the area of e-governance, Government of India started a National E-Governance Action Plan (NEGAP) as per the National Common Minimum Programme (NCMP) with 100% central assistance. The focus of this scheme is to improve the delivery of Government Services to Citizens and businesses by implementing e-Governance projects in Mission Mode across key departments that provide a large number of citizen and business focus services. This scheme in its current form consists of Mission Mode projects (MMPs) that would be implemented by

Central line Ministeries, State Governments and Projects that are integrated in nature. Creation of a State Information Technology backbone for fast, reliable and efficient connectivity, data storage and access, integrated services centers for delivery of citizen services, creation of web portals for 24x7 access to government information and services shall reduce overlaps between intra department initiative of IT and Reorientation of IT investments in Government from hardware procurement to service delivery.

9.3.13 During the 11th plan period Common Services Centre (CSC) are to be started at the level of Government of India whereby one lac Common Services Centres (CSC) would be setup throughout the country. 2112 Common Services Centres (CSC) would be setup in the state of Punjab. Each centre would cater to six villages. One third of public services would be provided by Government through these centres, where as the remaining 2/3 will be services to be provided by the private sector. An amount of Rs.1674.73 lac and Rs 429.00 lac has been proposed for the 11th Plan and Annual Plan 2007-08 respectively.

*_*_*_*_*