

7. SCIENCE TECHNOLOGY AND ENVIRONMENT

7.1 SCIENTIFIC RESEARCH

Outlay Rs 533.00 lac

7.1.1 Science and Technology plays a vital role in improving productivity, conserving resources and protecting the environment. For promoting scientific attitude, Punjab State Council for Science & Technology (PSCST) is continuing with its efforts for numerous science communication and awareness programmes. Council is the organizing agency for Children Science Congress in the state. Magazines & periodicals are also being published to take science to masses. The council also supports a patent information centre which provides awareness in intellectual property rights to educational institutions, industry and government departments and provides technical and financial support for patent filing.

7.1.2 Three national level institutes-National Agri-food Biotechnology Institute (NABI), Bio Processing Unit (BPU) and Institute of Nano Science and Technology (INST) have been set up with the assistance of Government of India in Knowledge City, Mohali. These institutes have already started working from the transit campus at Mohali. To give boost to science education, research & technology, building of Indian Institute of Science Education & Research (IISER) the first academic session has been started from April, 2011. The institute was set up of 125 acre of land at Knowledge City Mohali.

7.1.3 The work has been started for the construction of Indian School of Business (ISB) in the Knowledge City, Mohali for which possession of 70 acres of land has been taken. The first session has been started from July, 2012. The campus have 280 seats in its Post Graduate Management Programme & 750 seats in Executive Education Programme. Besides, Agri-food Biotechnology park would also be set up in public-private partnership for promotion of biotechnology industry at Knowledge City, Mohali.

7.1.4 Against an expenditure of Rs. 1182.06 lac incurred during 11th Five Year Plan, an outlay of Rs. 3944.00 lac is provided for 12th Five Year Plan. Against an expenditure of Rs. 11.00 lac incurred during 2011-12, an outlay of Rs. 533.00 lac is provided for Annual Plan 2012-13, for the following schemes:-

On Going Schemes:

Centrally Sponsored/ Funded Schemes

SR- 01 Pushpa Gujral Science City at Kapurthala (70:30)

Outlay Rs.100.00 lac

7.1.5 Science City has been set up at Kapurthala. The total cost of the project was Rs. 100.00 crore (GOI share Rs. 70.00 crore + GOP share Rs. 30.00 crore). The state has provided

developed land and infrastructure for this project. The entire central share and state share has been released. Against an expenditure of Rs. 764.00 lac incurred during 11th Five Year Plan, an outlay of Rs. 900.00 lac is provided for 12th Five Year Plan. An outlay of Rs. 100.00 lac is provided for Annual Plan 2012-13.

SR-02 Popularization of Science (50:50)

Outlay Rs.183.00 lac

7.1.6 The main objective of the scheme is to take science to the masses and especially involve school & college students and teachers in scientific programmes by organizing workshops, exhibitions, seminars and training programmes for students in collaboration with educational institutions and education department.

7.1.7 Against an expenditure of Rs. 21.87 lac incurred during 11th Five Year Plan, an outlay of Rs. 914.00 lac is provided for 12th Five Year Plan. Against an expenditure of Rs. 11.00 lac incurred during 2011-12, an outlay of Rs. 183.00 lac is provided for Annual Plan 2012-13.

State Funded Schemes

On Going Schemes

SR-03 Grant-in-aid to Bio-technology Incubator.

Outlay Rs.100.00 lac

7.1.8 The aim of the scheme is to develop Biotechnology Incubator comprising testing and certification facilities for agri- produce and products including processed food and to cater to farmers and biotech industry in Punjab. Land measuring 1 acre has been allocated for Bio-Technology Incubator in Knowledge City, Sector-81, SAS Nagar. The total cost of the bio-technology incubator is Rs. 1097.00 lac. Government of India had already released Rs. 513.41 lac and state government has released Rs. 290.00 lac. An expenditure of Rs. 803.41 lac (Rs. 513.41 GOI and Rs. 290.00 lac GOP) was incurred during 2008-09.

7.1.9 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 park is ready. Under this scheme, an expenditure of Rs. 385.00 lac incurred during 11th Five Year Plan and an outlay of Rs.100.00 lac is provided for the 12th Five Year Plan. An outlay of Rs. 100.00 lac is provided for Annual Plan 2012-13.

SR-04/SR-5 Pilot Trials Extension Through Approved Institutions

Outlay Rs.27.00 lac

7.1.10 The Council has experimented to prepare handicrafts items such as bags, folders, dustbins, purses etc. involving NGOs and SHG members in wetland areas. Now it is proposed to explore marketing of the produce through networking with agencies dealing with handicrafts so as to scale up the process and provide livelihood support to maximum number of people from marginal society.

7.1.11 Against an expenditure of Rs. 5.41 lac was incurred during 11th Five Year Plan, an outlay of Rs. 135.00 lac is provided for 12th Five Year Plan. An outlay of Rs. 27.00 lac is provided for Annual Plan 2012-13.

SR-05/SR-6 Promotion of Bio-technology and Nanotechnology in Punjab

Outlay Rs10.00 lac

7.1.12 Punjab State Council for Science & Technology has played a pivotal role in bringing projects for development of world class infrastructure in Punjab in the areas of biotechnology and nanotechnology. The National Agri-Food Biotechnology Institute and Institute of Nano Science & Technology coordinated by the council have already been operationalised by Departments of Biotechnology and Science & Technology, Government of India, respectively in transit campus at SAS Nagar. The Punjab Biotechnology Incubator, a spin-off of the council is also operative in SAS Nagar and is providing facilities for quality testing & certification of agri-produce/products. Further, the council is facilitating the setting up of Biotechnology Park by state government and Department of Biotechnology, Government of India through public-private partnership in Knowledge City, SAS Nagar. Now that this infrastructure is coming up in Punjab, there is an urgent need to make all possible efforts to promote the state as destination for collaborations and investments in the areas of biotechnology and nanotechnology. Towards this end, there is a need to regularly showcase state's strengths in these sectors at appropriate forums and organize dedicated bio-partnering events & stakeholders' meets. Against an expenditure of Rs. 5.00 lac was incurred during 11th Five Year Plan, an outlay of Rs. 50.00 lac is provided for 12th Five Year Plan. An outlay of Rs. 10.00 lac is provided for Annual Plan 2012-13.

SR-06/SR-15 Setting up of biotechnology based centre on green technologies.

Outlay Rs10.00 lac

7.1.13 There is an urgent need to take care of challenges such as pollution, natural resources, depletion and climate change posing threat to our environment. As biotechnology is

a frontier area in today's science & technology scenario, hence green technologies based on biotechnology interventions developed by various R&D centres, technical institutes and private sector need to be brought at common platform for their effective dissemination to various stakeholders. In this regard, the setting up of a centre for promoting such green biotechnologies in the state of Punjab is proposed. The major thrust area of the envisaged centre would be :-

- Developing alternative innovative technologies for agriculture sector to replace chemical intensive agriculture. The technologies will include propagation of botanical bio-pesticides especially neem based bio-pesticides, bio-fertilizers, solid waste management through vermin composting etc.
- Affordable technologies for reduction of contaminants in water & soil through biotechnological interventions.
- Harnessing of biomass for production of energy.

This unique centre is proposed to be set up within 5 years duration at a cost of Rs. 5.00 crore. An outlay of Rs. 500.00 lac is provided for 12th Five Year Plan. An outlay of Rs. 10.00 lac is provided for Annual Plan 2012-13.

SR-07/SR-16 Subsidy to students of government schools visiting the Science City.

Outlay Rs100.00 lac

7.1.14 In order to develop scientific temper among the students and to encourage them to take up careers in science & technology, Government of India and Punjab Government have jointly set up Pushpa Gujral Science City at Kapurthala, Punjab. The Science City has been receiving a good number of students mainly from private schools.

7.1.15 In order to encourage the students from government schools to visit the Science City and to ensure that they are not deprived of enjoying the facilities set up in the Science City by the government, it is proposed that at least 50000 students from government schools should visit the Science City every year. The approximate cost of visit per student is Rs. 300/-. As the students can't afford this, therefore, it is proposed to give subsidy to the students of government schools.

7.1.16 An outlay of Rs. 1150.00 lac is provided for 12th Five Year Plan. An outlay of Rs. 100.00 lac is provided for Annual Plan 2012-13.

New Schemes

SR-08 Documentation and Assessment of Economic Potential of Microbial Diversity in Punjab.

Outlay Rs.1.00 lac

7.1.17 Under this project, inventorization of the indigenous microflora of the State is proposed to be carried out through collection and analysis of available data on the microbes isolated from soil/other sources.

7.1.18 An outlay of Rs. 85.00 lac is provided for 12th Five Year Plan. A token provision of Rs.1.00 lac is provided for Annual Plan 2012-13.

SR-09 Value addition of Agri surplus a push to secondary Agriculture in Punjab

Outlay Rs.1.00 lac

7.1.19 Under this scheme, PSCST would promote the concept of secondary agriculture through RD projects, training workshops and Brainstorming sessions etc. An outlay of Rs. 90.00 lac is provided for 12th Five Year Plan. A token provision of Rs.1.00 lac is provided for Annual Plan 2012-13.

SR-10 Biotechnology Resources in Higher Education Sector in Punjab

Outlay Rs.1.00 lac

7.1.20 Under this scheme, data collection and analysis pertaining to resources devoted to bio-technology in the State to be carried out. An outlay of Rs. 20.00 lac is provided for 12th Five Year Plan. A token provision of Rs.1.00 lac is provided for Annual Plan 2012-13.

7.2 INFORMATION TECHNOLOGY

Outlay- Rs. 4.00 crore

IT 01 Development and implementation of IT Parks, Knowledge Parks and IT enabled Services Industries

Outlay- Rs. 2.00 crore

7.2.1 The department proposes to identify suitable sites in the current financial year in the state to set/Knowledge Parks/ITES industry with the help of central and state level