

SCIENCE AND TECHNOLOGY

Realizing the huge potential and impact on development, Government of India took initiatives to establish State Committees on Science & Technology in 1971. Kerala was the first State in the country which created a State level Committee on Science & Technology. The Committee was transformed into the autonomous Kerala State Council for Science, Technology and Environment (KSCSTE) in 2002-03.

● The R & D Centres

23.2 Consequent to the formation of the Council the seven R & D centres which came under the erstwhile STEC were amalgamated with the Council. Of these, ANERT was subsequently attached to the Power Department outside the purview of the Council. The Council provides assistance to the following six R & D Centres.

● Centre for Earth Science Studies (CESS)

23.3 CESS had been continuing its activities relating to coastal zone management, Monitoring the seismic activity in Kerala, shoreline management along west coast, earth system studies, project on Regional Technical Assistance for Coastal and Marine Resources Management and Poverty Reduction in South Asia, Project on Application of High Resolution Remote Sensing for local level development, Coastal Ocean Monitoring and Prediction System, Pollution assessment, Tribal settlement maps for the southern districts of Kerala etc.

● Centre for Water Resources Development and Management (CWRDM)

23.4 CWRDM undertakes research, training and extension activities of Water research, Transfer of technology, Research guidance, Collaborative ventures, and Consultancy service. During the year 2003-04, 28 projects on various aspects of water resources development and

management were taken up. These projects broadly deal with estimation of surface and groundwater potential, spatial and temporal requirement of water, appropriate allocation of water resources, water quality status, coastal dynamics, environmental impact assessment, water related environmental studies etc.

● Tropical Botanical Garden and Research Institute (TBGR I)

23.5 TBGR I continued its R&D activities related to Plant systems and Evolutionary science, Plant Biotechnology, Microbiology, Conservation biology, Ethno Pharmacology and Ethno Medicine, Environmental planning and Eco education,

● Kerala Forest Research Institute (KFRI)

23.6 Research and studies on forestry, wild life management, agro forestry, wood science, and man forest interaction are the major activities of the Institute. During 2003-04, a total of 35 new research projects have been initiated under various themes. Of these, 10 are sponsored projects by different agencies

● National Transportation Planning and Research Centre (NATPAC)

23.7 Research activities under NATPAC include Urban Transportation Planning, Road Development and Highway Engineering, Inland Water Transport, Accident Prevention and Road Safety, Environmental studies, Traffic Engineering and Management, Rural Road Planning, Tourism Infrastructure Planning, Extension Programmes and Sustainable Transport Systems. During 2003-04, 13 research studies were taken up.

● Rajiv Gandhi Centre for Bio-technology (RGCB)

23.8 RGCB was extended support for continuing advanced research in Biotechnology,

Molecular biology Bioinformatics, infectious disease research and Referral diagnostic like DNA finger printing, paternity testing etc.

Activities of the Council

● Science Research Scheme (SRS), a scheme for fostering Research in Science and Engineering

23.9 SRS is the flagship activity under the Science and Technology promotion programme of the Council. SRS aims at promotion of R & D activities in the State both in fundamental and applied research. Under the scheme, research projects in emerging areas of Science and Engineering are supported by providing financial support for the implementation of projects. During the year 87 projects with a total cost of Rs. 388 lakhs have been recommended

● Selective Augmentation of R & D Activities (SARD) , a scheme for strengthening S & T infrastructure

23.10 Selective Augmentation of R & D activities (SARD) is a scheme initiated by the Council with a view to strengthening S & T infrastructure primarily in the University Departments, Colleges and R & D institutions. S A R D envisages modernisation of laboratories by way of acquisition of essential equipments and the upgradation of existing facilities for teaching and R & D activities. 13 projects in different laboratories have been approved.

● KSCSTE Research Fellowship , a scheme for encouraging research talents.

23.11 A research fellowship scheme to promote research career in science and engineering among bright students was first introduced in 2002. The first five rank holders in B. tech/M..Sc in Physics, Chemistry, Botany, Zoology, Engineering, Mathematics and Agriculture from any of the universities in Kerala are eligible to apply. The selection procedure involves a written test in general research aptitude and the optional subject followed by an interview. Candidates selected would be offered a fellowship grant to join for a PhD programme in Kerala. In the year 2002, five candidates were selected.

23.12 From 2003 onwards, the fellowship grant was raised to Rs. 8000/-p.m,during the first

and second year and Rs. 9000/ - p.m during the third year, with annual contingency of Rs. 10,000/ - at par with national norms. During 2003, two fellowships were offered in each subject and a total of 14 candidates were selected.

● Sastraposhini ; a scheme for establishing model science laboratories

23.13 Sastraposhini is a programme aimed towards strengthening of science education in the schools of Kerala. The programme envisages setting up of model laboratories for conducting science experiments in the selected schools in the State on a pilot project mode. The objectives of the scheme include:

- To stimulate interest in science by the performance of experiments in schools
- To provide hand on experiments to students
- To organise training programmes for the teachers
- To evolve low cost laboratory kit.

● Refresher Course for College / University Teachers

23.14 Kerala State Council for Science, Technology and Environment in association with the Indian Academy of Sciences, Bangalore has initiated a refresher course programme for college teachers in Kerala for promoting the standard of higher education of the State.

● 16th Session of Kerala Science Congress

23.15 The 16th session of the Kerala Science Congress was held on the 29th to 31st January 2004 at CWRDM, Kozhikode. Focal theme of the congress was "Traditional and appropriate technologies for development of Kerala'. About 600 delegates from various districts and central institutions of Kerala participated in the Congress.

● State of Environment Report (SoER) for Kerala

23.16 KSCSTE is preparing the State of Environment Report (SoER) for the state with financial assistance from Ministry of Environment and Forests, Government of India.

23.17 The main objective of the project is to design and operationalise a participatory and scientifically rigorous SoE Reporting system for Kerala that enables informed policy/strategy formulation, decision making and follow-up action.

● **Environmental Information System (ENVIS)**

23.18 With financial assistance from the Ministry of Environment and Forests, Government of India, KSCSTE has established an ENVIS NODE. The ENVIS programme aims to provide a comprehensive environmental information data base under the identified subject areas and on the issues pertaining to the environment of the state.

23.19 The focal theme of the ENVIS NODE is Coastal Zone Management. The necessary data collection and creation of database are in progress and are available in the ENVIS website (<http://stedk.org/envis/index.html>).

● **Wetland Management Programmes**

23.20 KSCSTE has taken up projects for Wetland Management in the State of Kerala. Accordingly, a wetland conservation and management programme is being executed for the Sasthamcotta and Ashtamudi wetland system. A management action plan was formulated and implementation of the same was being done by the District Collector, Kollam. Ministry of Environment and Forests has extended financial assistance for the above project

Biotechnology

23.21 The Biotechnology Policy for Kerala was formulated in 2003 to provide an ambience needed for the healthy, efficient and competitive growth of biotechnology knowledge base and industry in the State. In compliance with the policy, a Biotechnology Board and Biotechnology Commission have been set up and are functioning in the Kerala State Council for Science, Technology and Environment. The Commission is responsible for the implementation of the BT Programmes in accordance with the decisions of the Biotechnology Board. Currently the following programmes are being implemented.

◆ **Promotion of R & D in Biotechnology**

23.22 The Kerala Biotechnology Commission promotes R & D in Biotechnology in the State through joint ventures involving research institutions/universities and biotech industries.

◆ **Post Doctoral Fellowship in Biotechnology**

23.23 Three Post Doctoral Fellowships have been instituted and offered to selected candidates.

◆ **Five year integrated Masters' course for Biotechnology**

23.24 The objectives of the human resource development in Biotechnology can be adequately and more effectively achieved through a 5 year integrated Master's degree programme. A committee of eminent academicians and scientists has been constituted to formulate the 5 year M.Sc. programme in Biotechnology under the Chairmanship of Prof. P. Balam, Molecular Biophysics Unit, Indian Institute of Science, Bangalore.

◆ **Other programmes envisaged in the Biotechnology Policy**

23.25 Apart from those mentioned above there are a few more programmes envisaged in the Biotechnology Policy for the State. These are

- Towards the strengthening of HRD, the state institutions in Biotechnology will be networked with advanced R & D laboratories of the Central Government and private institutions in the State.
- To organize special programmes to foster Intellectual Property Rights (IPR) and Patent literacy.

Other Initiatives of KSCSTE

◆ **Patent Information Centre (PIC)**

23.26 The Kerala State Council for Science, Technology and Environment has initiated a patent Information Centre (PIC) to support patenting activities in Kerala and to provide awareness on Intellectual Property Rights among researchers, academicians and industrialists. The Centre is being supported by Department of Science and Technology, Government of India.

◆ **GIAN Centre – Kerala**

23.27 It is proposed to set up a Grassroots Innovation Augmentation Network (GIAN) centre in Kerala in collaboration with National Innovation Foundation (NIF). Exploratory meetings have been held with several groups such as handloom weavers, handicraft workers and traditional artisans.

Regional Cancer Centre

23.28 During the year 2003-04, 135556 patients were treated in Regional Cancer Centre. The most striking event during the year 2003-04 was

the commissioning of Dual Photon High Energy Linear accelerator. During this period 2609 surgeries and 1713 endoscopic procedures were carried out. Autologus Bone Marrow Transplantation, following High Dose Chemotherapy for multiple myeloma was performed in five patients.

23.29 For early detection of cancer 21 Cancer Awareness classes and 29 cancer detection camps were conducted in different parts of the State. The Research Division also conducted

training in early detection and prevention for the Medical Officers and paramedical staff of Thiruvananthapuram Corporation area. In addition to the above the Community Oncology Division conducted 60 cancer awareness programme.

23.30 Tobacco awareness was given to 9474 persons through 63 programmes. During 2003-04, Regional Cancer Centre gave free treatment to nearly 50% of the patients spending Rs. 8.76 crores.