

## VIII SCIENCE, TECHNOLOGY AND ENVIRONMENT

### 8.1 SCIENTIFIC SERVICES AND RESEARCH

#### Scientific Services & Research

The outlay provided for 2008-09 for Scientific Services and Research is Rs.5500.00 lakh. The outlay for different departments are given below.

( Rs. in lakh)		
Sl.No.	Department	Outlay
1	KSCSTE	4325.00
2	Regional Cancer Center	1000.00
3	Kerala State Pollution Control Board	175.00
	<b>Total</b>	<b>5500.00</b>

#### 1. Infrastructure strengthening of Kerala State Council for Science, Technology and Environment.

( Outlay Rs. 125.00 Lakh)

The Kerala State Council for Science, Technology and Environment (KSCSTE) is responsible for steering the development of scientific research in Kerala and for financing research and development projects in the scientific domain in the State. An amount of Rs. 125.00 lakhs is provided for the Annual Plan 2008-09 for meeting the following components.

- ?? Expenditure connected with information network
- ?? Strengthening of existing Council Library
- ?? Creation of an Electronic referral library for S&T Promotion division of the Council
- ?? Expenditure connected with the various meetings of KSCSTE.

#### 2. Research and Development Institutions under Kerala State Council for Science, Technology and Environment

(Outlay Rs. 2100.00 Lakh)

The scheme envisages funding the following Institutions for Research and Development on the basis of specified projects for Research and Development, infrastructure up gradation, improvement of laboratory and library facilities. Specific focus shall be given to building up skills in science and society related areas focusing on local governments. Efforts shall be made to link this programme with the library network programme under the flagship project of good governance. The proposals of the institution are to be approved after evaluation by KSCSTE. An amount of Rs. 2100.00 lakhs is provided in the Annual Plan 2008-09.

- ?? Centre for Earth Science Studies (CESS)
- ?? Centre for Water Resources Development and Management (CWRDM)
- ?? Kerala Forest Research Institute(KFRI)
- ?? National Transportation Planning and Research Centre(NATPAC)
- ?? Tropical Botanical Garden and Research Institute(TBGRI)
- ?? Kerala School of Mathematics (KSM)

### **3. Schemes and Programmes of Kerala State Council for Science, Technology and Environment**

**(Outlay Rs. 1900.00 Lakh)**

An amount of Rs. 1900.00 Lakhs is provided in the Annual Plan 2008-09 for implementing the following programmes.

- ?? Science Research Scheme (SRS)
- ?? Student Projects
- ?? KSCSTE Research Fellowship
- ?? Sasthraposhini
- ?? Kerala Science Congress
- ?? Engineering and Technology Programme (ETP)
- ?? Grass Root Innovation Augmentation Networking (GIAN)
- ?? Rural Technology Programmes (RTP)
- ?? Patent Information Centre (PIC)
- ?? Science Popularisation Programmes
- ?? Scheme for Promotion of Young Talents in Science (SPYTiS)
- ?? Support for Seminar Symposia Workshops (SSW)
- ?? Science Literature Awards
- ?? Sasthravani
- ?? Community Science Centre (CSC)
- ?? National Science Day & National Technology Day Celebrations
- ?? Environment and Ecology Programmes
- ?? Environmental Education
- ?? Environmental monitoring programme – Air & Soil

#### **New Programmes**

- ?? Centre's of Excellence
- ?? Environmental monitoring programme – Soil
- ?? National Centre for Indigenous/Traditional Knowledge
- ?? Kerala Minerals Research and Development Centre
- ?? Kerala Institute of Environmental Science & Technology
- ?? Center for Dissemination of Bamboo Technology, Training And Management (CEDBAT)
- ?? Drug Research & Development Centre
- ?? International Institute of Radiation Studies
- ?? Kerala Science City
- ?? National Institute of Sustainable Coastal Zone Management

#### **4. Grant – in –aid support to Science & Technology institutions**

**( Outlay Rs.100.00 Lakh)**

The Council provides financial assistance as grant under Plan provision to some autonomous institutions namely Sophisticated Test and Instrumentation Centre, Integrated Rural Technology Centre, Malabar Botanical Garden Society etc. to implement programmes after evaluation and approval by KSCSTE. An amount of Rs.100.00 lakhs is provided in the Annual Plan 2008-09.

#### **5. Biotechnology Development**

**( Outlay Rs.100.00 Lakh)**

The major programmes are relating to Human Resource Development (HRD), Agriculture, Health, Environment, Marine and Industrial sectors with industrial partner, Kerala Herbal Drug Development Programme and Technology incubator facility. An amount of Rs. 100.00 lakhs is provided in the Annual Plan 2008-09 for implementing the scheme.

#### **6. Regional Cancer Centre (RCC) , Thiruvananthapuram**

**(Outlay Rs.1000.00 lakh)**

An amount of Rs.1000.00 lakhs is provided in the Annual Plan 2008-09 for implementing the following programmes.

?? Augmentation of infrastructure for treatment of lakhs early detected cancers	. Rs.600
?? Upgradation of Postgraduate Teaching Facilities. lakhs	Rs.200
?? Upgradation of Research Facilities. lakhs	Rs.200

An effort shall be made to streamline the support available to District Panchayats under cancer care and palliative care.

#### **7. Kerala State Pollution Control Board (KSPCB)**

**(Outlay Rs.175.00 lakh)**

An amount of Rs. 175.00 lakhs is provided in the Annual Plan 2008-09 for implementing the following components.

- ?? Public Awareness & Training
- ?? Purchase of Lab Equipments / Consumables
- ?? Construction of office building
- ?? Survey & Investigation
- ?? Investment in Pollution Control Facility
- ?? Public Hearing

- ?? Strengthening of Infrastructure
- ?? Water & Air Quality Atlas
- ?? Impact Monitoring
- ?? Noise Mapping
- ?? Common Waste Management Facilities
- ?? Incentives for Pollution Control
- ?? River Water Quality Surveillance Centre
- ?? Research on Pollution Control Technologies
- ?? Inventorisation of Pollution Sources
- ?? Ambient Monitoring Stations
- ?? Environment Training Institute
- ?? Channelising Assistance for Sewage Municipal Solid Waste & Slaughter House Waste Management by Local Bodies and Stakeholders
- ?? Co-ordination of Watershed Environment Protection Activities

## **8.2 INFORMATION TECHNOLOGY & E-GOVERNANCE**

### **1. Kerala State Information Technology Mission (KSITM)**

**(Outlay Rs.1840.00 lakh)**

Kerala State Information Technology Mission is functioning as a field agency of the IT Department and is a registered society. It is initiating a few pilot projects in sectors, which would have some impact among the public. An amount of Rs.1840.00 lakh is provided for 2008-09 for the development activities and implementation of projects initiated by Kerala State Information Technology Mission. The following are the programme proposed to be undertaken by Kerala State Information Technology Mission.

?? Promotion and Business Development- KSITM is undertaking a robust promotional campaign to hard sell Kerala as the emerging IT/ITES destination in the country. The promotional campaign utilizes the various communication channels to target the decision-makers among potential investors. This is achieved through participation in IT events and road shows, business meets, release of advertisements and publishing publicity materials.

?? Investment and Promotion Management Cell (IPMC) – IPMC registers and administers the incentive schemes for IT units. The aim of the scheme is to put in place a package of incentives, which will make Kerala one of the most attractive destinations in IT in the country. The activities envisaged in the cell include disbursement of incentives to eligible IT units, administration and contingent expenditure, support for IT Units etc.

?? Human Resource Development for IT/ITeS –

- a) Implementing IT / ITeS training programme for the Masses - It is proposed to introduce a massive HR development programme for one lakh graduate in the State during 2008-09. The training programme shall be extended to other major towns in the State so as to cover graduate in Semi Urban, rural locations in the State.
- b) Developing Finishing Schools in Thiruvananthapuram, Kochi and Kozhikode – It aims to enhance the employability of the Engineering / Technically qualified graduates from semi urban and rural background by imparting hands on experience on live projects and soft skills / communication skill enhancement and their by offer a readymade talent pool to the IT / ITeS Industry. This will be achieved by developing one finishing school each in Thiruvananthapuram, Kochi and Kozhikode to impart training to the student. The intake may be limited to 120 students. The training should be residential for a period of three months with placement assistance towards the end of the programme.
- c) ITeS training infrastructure creation in all district headquarters and importing ITeS training programme
- d) IT / ITeS Promotion participation with industry and academia - The scheme aims to promote ITeS Industry in the State by taking necessary steps to enhance the HR base of the State. Thus Industry specific training programmes are to be promoted. It also aims for creating awareness among the unemployed youth about the opportunities in the IT / ITeS Industry
- e) India's first exclusive ITeS Habitat at Kochi. - The objective of this Habitat is to train the youth churning out top quality hands and thereby offering a readymade talent pool for ITeS business. There is now increasing demand for space from various companies. Hence maintenance and upkeep of ITeS Habitat Centre and to develop additional space of 5000 sq. ft. available in JINI stadium complex are proposed for the year 2008-09 this additional space could be utilized as incubation centre and setting up of finishing school.

?? FRIENDS including e-pay and Citizens Call Centre-

**FRIENDS** - It is proposed to augment FRIENDS Centres by incorporating new technologies and by introducing new services. The amount proposed will be utilised for the recurring expenditure such as Electricity charges, Telephone charges payment to Kudumbashree, Security Stationery charges etc, in addition to that the AMC charges of TSP is to be met from this account.

**Citizen Call Centre** - It is proposed to evolve the Call Centre functioning in Thiruvananthapuram as a contact centre which can handle all citizen queries, Phone

calls, e-mail including instant messaging. Value added services proposed under the call centre project include online knowledge base, public interaction forum etc. It is proposed to introduce a citizen complaint cell in the call centre.

**Akshaya e-pay Centres** - It is envisaged to introduce e-pay facility through all Akshaya Centres set up in the State. The activities proposed in e-pay include rollout in the remaining districts, identification and linkages to banking networks, technical supports and software maintenance, training to Akshaya entrepreneurs, promotion of e-pay etc. The amount proposed for Akshaya for E-pay centres is for technical support in the eight districts and for roll out in the remaining six districts.

?? Content development – Development of course programme- Computer based training, Development of content for the Information Education and Communication Programme of Government, maintenance of existing programmes /upgradation of existing content, Malayalam language computing and incentive scheme for Malayalam Portals, Kerala Innovation Foundation are the components of the scheme.

?? Cyber Crimes-Detection, prevention, training and awareness building programmes – The programmes envisaged include awareness about Indian Cyber Law (IT Act 2000) training Law Enforcement Authority's Activity, Maintaining a call centre/help desk for the public, promotional activities for awareness building, distribution for software applications, cyber crimes and cyber securities awareness programme primarily through Akshaya Centre.

?? Kerala State Wide Area Network (KSWAN) including SII / Video conferencing

**KSWAN - Government** of Kerala has conceived the KSWAN to give an impetus to e-governance initiatives in the State through the use of ICT. The State Information Infrastructure (SII) connecting Thiruvananthapuram, Kochi and Kozhikode will act as its backbone. It is extended to all districts and will be extended to 152 Block Headquarters. Further the network will bring into its ambit about 1660 remote Offices of Government Departments and ultimately connecting all Government Offices. The Department will be connected using point to multi point wireless system. KSWAN supports the integration of a large number of citizen services and with required application in place will enable services like G 2 G, G 2 C etc. United Telecoms Limited (UTL) with technical backup C – DAC is implementing KSWAN on BOOT basis, where the payment is done on Quarterly Guaranteed Revenue basis. This project has both the State share and Central Government share. To receive 10 Mbps bandwidth each on the backbone and 4 Mbps from the network operating centres. The facilities in the three NOCs are to be enhanced. Structured cabling in civil stations with fibre backbone is also another activity proposed during 2008-09. Proposal to add another 1000 remotes to KSWAN is also proposed. IP phone is another service that can be delivered through KSWAN. It is also proposed to introduce Gestural Language Keyboard with pen based PC input device that can be used to input text / phonetic scripts in local languages including Malayalam.

**SII** - It acts as the State network backbone connecting Thiruvananthapuram, Kochi and Kozhikode. It aims to use the free bandwidth provided by Asianet, Reliance and Bharathi. The Data centre attached to it act as the Government Data centre. Running the centre and maintaining the equipments addition of a 60 KVA UPS for uninterrupted power, enhancement of Internet bandwidth to 10 Mbps are the activities during 2008-09.

**Video conferencing** – This project is connecting all district Collectorates, Kerala House, New Delhi, Secretariat, Public Office, Vikas Bhavan, Advocate General Office, and IT Mission so as to organize immediate online conferences and discussions. The amount provided is for the activities of these programmes. Running, maintaining and enhancement by providing a mobile VC Center are the plans for 2008-09.

### **Sec WAN, K-base, IGSG**

**Secretariat Wan** - Secretariat being the main administrative centre its computerization is the basic need for the State level Egovernance activities. Finishing the Sec WAN project in Secretariat and Public Offices is expecting to complete in 2008-09.

**K-Base** - This project is intended to upload Government Orders in Website and make it accessible to all. Maintaining the project, finishing the data entry work of back long, procurement and installation of a high end server, improvement of search facility etc. are the activities proposed during 2008-09.

**Integrated Government Service Gateway (IGSG)** - It is envisaged to deliver the information about the hierarchy of Government Departments, the location of individual Offices and details of services available. Down loading provision of various Government forums are also being made. Development and Implementation of GIS based Application Software, conducting survey for data collection and data integration are the activities envisaged for 2008-09.

?? Service and Payroll Administrative Repository of Kerala (SPARK) - Spark is a Web based solution for services and Payroll management and it can process and generate bills / reports / orders etc. Digitization of Service Books of all Government Employees in the State will be captured into the system and Permanent Employee Numbers (PEN) will be allotted which will be an important code to identify the employ in the Spark data base. The following are the main activities of Spark.

- (i) Data entry of all service records of Government employees
- (ii) Hardware Deployment including PC's and printers in a need to do basis
- (iii) Connectivity either through KSWAN or broad band connectivity through BSNL
- (iv) Software development by NIC
- (v) Functional training to staff and Master trainers by KSITM
- (vi) Uploading data of service books in case of Offline data entry

- (vii) Training to staff for bill processing
- (viii) Handheld support for bill preparation

**Akshaya:** - Presently e-literacy training is carried in seven districts as second phase of e-literary drive. The post e-literary phase that implemented in Malappuram is commenced in these districts. ICT enabled services such as e-pay e-krishi and advanced courses are already initiated. It is envisaged to complete the e-literacy training and to roll out all the service delivery initiatives in these districts during 2008-09. In the remaining six districts the third phase of roll out will be started soon by setting up Akshaya e-centers. Actions for the deprived communities such as special programmes for SC/ST category women and development of FOSS communications are the other important sectors identified for implementation through Akshaya.

?? Information Secretary Audit Cell – This cell was formed in KSITM during 2007 based in the direction of Department of IT, Government of India. KSITM has initiated the process of ISO 27001 certification in four core Information systems of Government viz Friends, SPARK, State Data Centre and KSWAN. For 2008-09 the following activities are proposed

- (i) IS Audit in Information Systems of Government viz, e-pay, KVAT, TIMS, PEARL.
- (ii) Training to concerned Stakeholders in Government departments and personal in KSITM.
- (iii) Data base of IS assets and IT Road map
- (iv) Implementation of e-Gov standards in the State.

?? Unique ID – This project is proposed to be implemented under NEGP. Civil Supplies Department is planning to issue new Ration Cards with Photograph of the Head of family. New laminated card will be issued after the photo session. The citizen data base of civil supplies Department may be used to introduce unique ID for the India citizens in the State.

?? M – Government Services in Kerala (M – Governance) Government of Kerala is planning to utilize the strength of mobile penetration using the concept of “always on” connection for delivery of citizen services. It is proposed to prepare a road map to implement M – Gov services using all wireless devices to all involved Stakeholders. Government of Kerala is proposed to prepare a detailed project report on effective use of all wireless devices including mobile phones, PDAs, handhelds, wearable PCs, Black Berry pages etc, to make use of the potentials of M – Government. It is also proposed to implement a project based M – Government in association with the KSRTC.

?? Revitalising of Kerala Government Web sites - Migrate to Content Management Frame work (CMF) All Government Departments and Website development agencies need to be encouraged to migrate to a Content Management Framework

- ?? Setting up a Radio Frequency ID Cell and to pilot socially relevant project using the technology
- ?? Citizen Health Information Repository
- ?? GPRS based distress alert system for fishermen
- ?? Support to Government Departments for e-governance implementation
- ?? Kerala Innovation Foundation for documentation and digitization of traditional knowledge, local innovation and student innovation.

## **2. Indian Institute of Information Technology and Management – Kerala (IIITM-K)**

**(Outlay Rs.300.00 lakh)**

IIITMK established at Technopark campus is an institute focussing on the development of human resource in IT sector. This has been developed as an Institute of Excellence of International Standards. It is also to be developed as a resource center for upgrading the quality of teaching/learning in colleges. It is expected to undertake more research initiatives and conduct e-learning programmes to develop quality manpower. It is proposed to establish a permanent campus for the institute. It is also proposed to take up different projects during 2008 -09 viz., establishment of Innovation Centre for Open standards in Software Engineering Education, School of Eco – Informatics computational Chemistry, IT Enterprises Management, Computational Biology training programme in Industrial Analytical Chemistry, Integrated Water Management Etc. Hence an amount of Rs.300.00 lakh is provided for these activities.

## **3. Land Acquisition and Infrastructure Development under IT- Technopark and Infopark.**

**(Outlay Rs.3000.00 lakh)**

Technopark is the state's primary initiative to promote IT ventures. During 11<sup>th</sup> plan Technopark is planning its third phase of expansion. New building and additional support facilities have to be developed. Incubation facility needs to be expanded to support more units. Infopark Kochi is attracting more industries. It is planning to start construction of 4-lakh sq.ft. building in the coming years. Additional facilities and access road needs to be developed. Hence an amount of Rs.3000.00 lakh is provided for land acquisition and infrastructure development in Technopark including land acquisition for Technocity and Infopark for the Annual Plan 2008-09.

Of this, an amount of Rs.1000.00 lakh is provided for the construction of a building for Infopark under RIDF scheme of NABARD.

## **4. National e-Governance Plan (NeGP) - ACA**

**(Outlay Rs.2000.00 lakh)**

As part of the implementation of the National e-governance plan in the State, the State e-Mission Team being functional within KSITM shall drive and monitor the implementation of the Mission Mode Projects (MMPs) identified by the Government. In addition the departments are required to set up Project e-Mission Teams (PeMTs) for

implementation of MMP within the respective department. The proposals include operational expenses, training, hardware infrastructure etc. Capacity building and training for Government staff shall be taken up as part of the initiative. The following are the major projects under NeGP.

- i. Mission Mode projects
- ii. Centre for E-governance Kerala
- iii. National Portal of India
- iv. E- procurement

An amount of Rs.2000.00 lakh is earmarked for the Annual Plan 2008-09 under additional central assistance.

### **5. International Center for Free Software and Free Knowledge (Flagship Programme)**

**(Outlay Rs.60.00 lakh)**

It is proposed to establish an International Center in collaboration with free software Organisations in India and outside to promote development and application of free software and free knowledge. The vision of this center is to leverage the power of FOSS for the enhancement of the quality of life of the people of Kerala and to stimulate local employment there by maintaining Kerala strategic lead in this domain over the rest of the region. The objective of this initiative will be

- ?? Identifying technologies for different applications for the Government, Public Enterprises, and Educational Institutions, Small business, Individuals and other key sectors within the State.
- ?? Developing HR in the State
- ?? Developing FOSS support systems
- ?? Stimulate local employment through small scale FOSS based industries'
- ?? Work with local , National and International institutions and network to develop position Kerala as FOSS Industrial destination
- ?? Pilot FOSS based interventions in sectors like Governance, Education, Local Information etc.
- ?? FOSS technology development in the areas like special planning tools Agriculture and Health Information systems, Language technologies, embedded systems, Telephony etc
- ?? Organising FOSS events
- ?? Attracting FOSS Industries to Kerala

KSITM is initiating the process of setting up this centre as an autonomous research and development organization. An amount of Rs.60.00 lakh is provided for the annual plan 2008-09 for the above purpose.

## **6. Formation of a Company for IT Infrastructure (Flagship Programme)**

**(Outlay Rs.500.00 lakh)**

As envisaged in the Annual Plan 2007-08 setting up of an IT Company for the creation of IT infrastructure with equity participation of the State Government is in the final stage. Hence an amount of Rs.500.00 lakh is provided as share capital contribution of the State Government initially for the year 2008-09.

## **7. ICT for Underprivileged Sectors (Flagship Programme)**

**(Outlay Rs. 50.00 lakh)**

ICT Development scheme is to promote innovative application of ICT to address the needs of under privileged and deprived sections of the society. Special programmes will be devised to utilise the possibilities of ICT to address the special needs of physically, mentally, socially backward sections of societies and for SC/ST community, women, youth, workers and other sections which needs special attention. An amount of Rs.50.00 lakh is provided for 2008-09 under Flagship Programme. KSITM would be providing technical and managerial support for the scheme.

## **8. Development of Local Language (Flagship Programme)**

**(Outlay Rs. 50.00 lakh)**

ICT provides value to citizens only when locally relevant content is available. The scheme is proposed to develop and promote the development of locally relevant content. This initiative will also contribute towards the development of content industry. KSITM will implement in the scheme. An amount of Rs.50.00 lakh is provided for the Annual Plan 2008-09 under Flagship Programme for the implementation of the scheme.

### **8.3 FORESTRY AND WILDLIFE**

During the Annual Plan 2008 -09, a six percent increase in outlay for Forestry & Wild life has been proposed with an outlay of Rs 48 crore. However a major shift in the composition of plan support has been effected. An amount of Rs. 23.00 crore was provided as RIDF support during 2007 -08 which has been reduced to Rs. 5.00 crores in 2008-09 which resulted in the flexible amount of Rs. 18.00 crores in 2008 -09. The substantial increase has been effected for Bio diversity conservation (150%),improving productivity of plantations ( 44 %), extension forestry ( 150%)and management of non wood forest products ( 60 %) in 2008 -09.

A project document on social forestry covering various ongoing schemes under extension forestry, agroforestry, schemes supported through NREGS, and plans of local governments would be prepared for monitoring. Separate monitorable targets would be developed. New Schemes/ components have been supported in extension forestry in augmenting tree cover in the State through homestead forestry as well as planting trees in association with Local Governments.

An amount of Rs. 100 lakh is provided for the Development of Forest Management Information System and GIS as a new scheme. Under Management of Sanctuaries and National Parks an amount of Rs. 15 lakh is provided as State share for the newly established Choolannur Peacock Sanctuary.

## **Schemes for Annual Plan 2008-09**

### **I. *Management of Natural Forests***

The programme envisages improving the ecological status and economic value of the natural forests, their protection from biotic factors, and rehabilitation of degraded area and conservation of biodiversity. The activities to be taken up are consolidation of forests, forest protection, rehabilitation of degraded forests, Participatory Management of Natural forests, Protection of fragile eco systems and participatory Habitat Management.

#### **(i) Consolidation of forests**

**(Outlay Rs.175.00 lakh)**

Consolidation of forest area and permanent demarcation of the forest boundaries are essential for effective management of forests of the state. Demarcating the boundaries by erecting permanent cairns and constructing stone walls in sensitive areas will help in controlling large scale encroachments. So far about 210000 cairns over a length of about 10000 kms and 981 km stone wall were constructed. It is estimated that about 5000 kms of forest boundary is yet to be demarcated. Demarcating the fragile areas that will have to be protected by the forest department on account of implementation of the Kerala Forest Act, 2003 (Vesting & Management of Ecologically Fragile Lands) is also to be taken up. By using modern survey equipments the works of consolidation of forests will be completed and detailed maps have to be provided to field level functionaries.

The activities of boundary protection include construction of 6000 cairns, repair of 2000 cairns, construction of 20 km of stone wall, construction of 5 km compound wall, creation of 10 km of chain link fencing for sandal forests and 100 ha belt planting with forest species and fruit bearing species through participatory method and preparation of maps. A portion of the outlay is used for the purchase of modern survey and measuring equipments including total stations and software.

#### **(ii) Forest Protection**

**(Outlay Rs. 1070.00 lakh)**

Under forest protection, a participatory mode with appropriate partnership arrangements with Vana Samraksharana Samithies and with the active involvement of NGOs would be taken up.

?? The outlay provided is for creation and maintenance of 5000 Km fire lines, prevention of Ganja cultivation, soil and moisture conservation works on watershed basis in 10000 ha , intelligence gathering and also for creating

provision of infrastructure facilities for communication. Protection of fragile Eco – Systems and compensation for land to be acquired under section 4(1) of the Ecologically fragile land Act, 2003.

?? A portion of the outlay will be utilised for protecting the sandalwood forests in Marayoor, Thenmala, Thrissur, Chalakkudy, Mannarkkad, Thekkady and Eravikulam National Park forest Divisions.

?? The outlay is also for conducting monitoring activities by the Vigilance Wing.

(iii) **Regeneration of Degraded (Denuded) Forests**

**(Outlay Rs. 200.00 lakh)**

The provision is for the improvement of degraded forests which were treated in previous years under Kerala Forestry Project and other such schemes. It is proposed to take up 400 ha new areas in addition to continuing activities in 12,000 ha initiated in the previous years. These activities would be operated through VSSs.

Special protection of unique eco-systems in 2000 ha like shola forests, sandalwood areas, mangroves and other eco-systems fauna in special areas will also be carried out under this programme. A portion of the outlay is set apart for acquiring areas lying inside/outside traditional forest areas and these areas may be enclosures or corridors.

**I. *Improving Productivity of plantations***

The objective of the scheme is to enhance the productivity of existing plantations, to promote forest activities and practices by combining with agriculture, so that the pressure on forest eco-system due to the increased social needs is gradually reduced. About 2.20 lakh ha of forests are under plantations of various species, the main species being teak cover an extent of approximately 75000 ha. It is proposed to cultivate indigenous pulpwood species with multiple uses utilising Certified seeds, clonal technology, root trainer technology and following appropriate silviculture techniques to ensure optimum productivity.

The following sub programmes are proposed.

**(i) Hardwood Plantation**

**(Outlay Rs.40.00 lakh)**

This component is for raising and maintaining long duration species like teak, rose wood and other hardwood plantations. It is proposed to raise 100 ha new plantations and maintenance of 900 ha plantations. Special tending operation in about . The expenditure on re-plantation of teak would be met from the teak revolving fund. The outlay will be used for the replantation and maintenance of other hardwood species.

**(ii) Industrial raw material Plantation****(Outlay Rs 400.00 lakh)**

The harvested areas of Encalyptus, acacias, manjium and other forest growing species which supply industrial raw materials will be replanted and maintained under the programme. The provision is for raising and maintenance of 1500 ha of pulpwood plantations and for raising miscellaneous spices about 1000 ha and for raising cairn and bamboo in 100 ha. The outlay will also be utilised for the maintenance of the five central nurseries, and production of seedlings.

**III. Infrastructure****(Outlay Rs.260.00 lakh)**

Construction of building for accommodating forest stations including the maintenance of existing ones and proper upkeep of forest roads are the infrastructure activities proposed under the programme. The Forest Department has 2443 building and 4000 kms. of roads. It is proposed to construct 25 new buildings and besides maintaining the existing buildings. Also it is proposed to maintain 25 km of roads which are of vital importance for the protection of the forests. Formation of new roads will be supported under RIDF. A portion of the outlay will be utilised for establishing Forest Stations. The staff component will be through redeployment.

**IV Bio-diversity Conservation and Protected Area Management**

Protection of forests and wild life and conservation of bio-diversity are the core objectives of the scheme. It is proposed to implement an integrated approach for bio-diversity conservation. The wildlife conservation activities will be centered around protected areas like wildlife sanctuaries and biospheres whereas other activities for conservation of bio-diversity will be within the forest eco-system.

**(i) Conservation of Bio-diversity****(Outlay Rs. 100.00 lakh)**

The activities proposed include special programmes for Rare Endangered and Threatened (RET) species of flora and fauna, conservation of natural heritage sites, participatory conservation programmes for sacred groves and mangroves, wildlife area specific programmes for conservation of migratory birds, protection of different fragile eco-systems with involvement of NGOs, Ex-situ conservation of wildlife and prevention of ganja cultivation in Protected areas. Outlay is also set apart for project oriented biodiversity conservation activities in the important ecosystems outside the forest areas to be executed by the NGOs. The activities aimed at natural regeneration and rehabilitation of degraded areas within the protected boundaries will be accommodated within the outlay. There are many ecologically important areas owned by private individuals and which need to be acquired for providing corridors to migrant fauna. A portion of the outlay is for meeting the cost of acquisition. The outlay is provided for elephant proof trenches and solar power fencing for protecting the crop damages and compensation of wild life attack.

**(ii) Management of Sanctuaries and National Parks (50% CSS) – State Share**

**(Outlay Rs. 725.00 lakh)**

The provision is to meet the state share of the 50% CSS for the maintenance of 15 Wildlife Sanctuaries and five National Parks. The major activities include fire protection, control of poaching and illegal trade in wildlife articles, improvement and formation of water holes, construction of check dams, weed eradication, Soil conservation works, vista clearance, planting bamboos, caryotta etc. Special habitat development programmes, Eco-Development Programmes, infrastructure facilities, special programme for the protection of avifauna providing signages etc. will be undertaken in all the sanctuaries and National park including the newly established peacock sanctuary at Choolannur on the boundary of Thrissur and Palakkad Districts. The outlay for the Silent Valley National Park is also utilised for the extended area in the Silent Valley Buffer Zone.

**(iii) Eco-Development Programme**

**(Outlay Rs.25.00 lakh)**

Eco development programme addresses the issues of interface with people, participatory planning and implementation support to foster alternative livelihood system and resource management. Eco development programmes in Periyar Tiger Reserve, Chinnar, Neyyar and Parambikkulam is proposed to continue and it is extended to other ten PAs.

**(iv) Integrated Forest Protection Schemes – (State Share - 25%)**

**(Outlay Rs. 150.00 lakh)**

The Government of India introduced this scheme during 10<sup>th</sup> plan with 25% contribution from the State. The activities proposed includes infrastructure development such as assistance for working plan preparation, survey and demarcation of forest, purchase of equipments for the purpose and forest protection including fire protection. The provision is to meet the State's share of the scheme.

**V. Eco Tourism**

**(Outlay Rs. 25.00 lakh)**

Eco-Tourism in and around forest areas other than Sanctuaries and National Parks helps environmental conservation by promoting awareness among various groups. The activities proposed are managing tourism in an eco-friendly way in locations where the high influence of visitors tends to affect the environment detrimentally. Periodic reviews will be undertaken to ensure that the tourism initiatives do not adversely affect the goal of conservation.

It is proposed to open more locations as eco-tourism spots with involvement of local people and through VSS and development of Eco-tourism products, to be marketed in partnership with Tourism Department/Private Promoters.

## **VI. Human resources Management**

**(Outlay Rs. 80.00 lakh)**

The existing facilities of training institutes at Walayar, Arippa and in the Forest complex PTP Nagar are proposed to be strengthened. The other activities proposed include organisation of training programmes, awareness and capacity building programmes for the functionaries of Forest Department, NGO's and other development agencies connected with forestry activities. The Induction and in-service orientation training programmes to different levels of staff of the Forest department will be undertaken. The outlay will also be utilised for conducting physical fitness training programmes and organizing workshops and seminars. The staff expenses and other establishment charges will be met from non-plan and only the cost of additional facilities and training expenses will be met from this provision.

## **VII. Resource Planning and Research**

### **(i) Forest Resource Survey**

**(Outlay Rs.15.00 lakh)**

All the operations in the forest area are carried out based on the working plans approved by the Government of India. The required field inventory has to be made for preparing the working plans. Out of 23 forest divisions, 17 forest divisions are having the approved Working Plans and Revised Working Plans for another 10 years are under preparation for six divisions. The activities proposed are to complete the forest resource survey and preparation of working plans.

### **(ii) Forestry Research**

**(Outlay Rs. 25.00 lakh)**

The outlay is provided to introduce field trials of different species and for trials on technologies developed in research institutions. Support will also be provided for applied research including introduction and adoption of new technologies and outsourcing of expertise in needed areas .

?? Activities such as propagation and multiplication of medicinal species maintenance of seed centre, resource survey, maintenance of teak seed production areas, seed stands of other species, teak seed orchard, permanent plots will also be carried out.

?? Trials of different species of bamboos, field trails on the finding of KFRI and other Research Institutions will also be carried out.

### **(iii) Forest Management Information System and GIS**

**(Outlay Rs. 100.00 lakh)**

Forest Management Information System was created under the World Bank aided Kerala Forestry Project implemented during 1998 -2003. For under taking Forest Management Information System and GIS works an amount of Rs. 100.00 lakhs is set apart during 2008 -09 for the following purpose.

- ?? Training in FMIS/GIS
- ?? Development of FMIS, Annual maintenance contract for software consultancy on FMIS & PFMS and modules.
- ?? Upgradation of GIS software
- ?? Upgradation of existing computers for FMIS & GIS
- ?? Purchase of maps, Satellite imaginaries and associated database generation.

### **VIII. Extension Forestry**

**(Outlay Rs. 250.00 lakh)**

National Forest Policy 1988 stipulates that 1/3<sup>rd</sup> of the total geographical area shall be covered with trees. To achieve this objective, massive tree planting programmes outside the forest area is essential. In order to encourage homestead and agro-forestry practices it is proposed to undertake a massive tree planting programme outside the forest area with the involvement of people including school children. Urban forestry activities will be encouraged.

Greening Kerala Programme including Awareness Programme, Developing 14 District Forest Extension and Information Centres (DFEICs), strengthening of Forest Information Bureau (FIB) by providing necessary infrastructure facilities, Participatory Greening programme and biodiversity conservation, environmental awareness campaigns, are envisaged in the scheme.

Participatory Habitat Management Programme, Management of fragile ecosystem and distribution of seedlings to public will also be undertaken. About 70 lakh seedlings will be distributed to the public during XI<sup>th</sup> Plan period. The successfully launched programmes namely Endemaram, Vazhiyathannal, Harithatheeram started during 2007-08 will be expanded and continued during 2008-09.

Afforestation in coastal areas prone to sea erosion will also be undertaken under the scheme. The activities will be extended to mangrove areas, wetlands, river banks, estuaries, lake shores, sacred groves and other ecologically sensitive areas. The activities will be undertaken outside traditional forest areas with the active co-operation of local self governments and NGOs. Planting riversides with bamboo with the involvement of local bodies will be initiated. Conservation and consolidation of the river and stream bank with the participation of local people are envisaged. The cost of raising nurseries for distribution of seedlings, replanting of road side areas, compact areas of public lands will also be undertaken.

## **IX. Management of Non-wood Forest Products**

### **(i) NWFPs including medicinal plants**

**(Outlay Rs. 160.00 lakh)**

The development of NWFPs like canes (rattans), bamboos and protection, conservation and production of medicinal plants are envisaged under the programme. The productivity and management of NWFPs will be improved through sustainable and scientific management by adopting improved methods of harvesting, processing, value addition and marketing. The economic potential of NWFPs as a resource for value added bio-related products would be promoted. The collection of NWFPs is entrusted with tribal communities and these activities would be further strengthened through VSS. The micro plans of the tribal VSS for the management of NWFPs will be integrated with the working plans.

Maintenance of nine existing Medicinal Plants Conservation Areas (MPCAs) *insitu* conservation and for setting up of new MPCAs, preparation of inventory of resources and documentation, development and transfer of technology, research for product development, documentation of indigenous knowledge, intercropping in forest plantations, introduction of regulatory mechanism for medicinal plant collection and marketing, demonstration and domestication of medicinal plants etc. are included in the scheme.

During 2008 -09, 250 ha cane plantation and 200 ha NWFP species plantation like Koovalam, Ashoka, Neem, Medicinal tree species will be undertaken.

## **X. Rural Infrastructure Development Fund**

**(Outlay Rs.500.00 lakh)**

An amount of Rs. 5 crore is provided for projects under RIDF of NABARD. The outlay will be utilised for implementing projects approved by NABARD as well as for implementing ongoing NABARD assisted projects. In the case of new projects detailed project reports have to be recommended by government to NABARD for sanction.

## **XI. Twelfth Finance Commission Award**

**(Outlay Rs. 500.00 lakh)**

The outlay set apart is for the assistance under Twelfth Finance Commission Award for the maintenance of forests.

## **8.4. ECOLOGY AND ENVIRONMENT**

Priorities during the plan would include enhancing urban environmental conditions including air quality, access to safe drinking water, sanitation, waste management and improving governance of natural resources with a focus on biodiversity conservation.

A substantial increase of 33 per cent in allocation for Ecology and Environment has been proposed during 2008-09 over 2007-08. The support under RIDF has been reduced from Rs. 7.00 crore to Rs. 5.00 crore during 2008-09. A new Environment Management Agency has been created for coordinating various environment related projects implemented in the state. A substantial increase in allocation has been proposed for Bio diversity Board for implementing various biodiversity conservation programmes. Environment impact assessment as well as air and water quality monitoring have been included as new schemes during the Annual Plan 2008 -09. It is proposed to implement a major project on Eco restoration of wetlands in the state.

## **Schemes during the Annual Plan 2008-09**

### **1. Strengthening of the Department of Environment**

**(Outlay Rs.25.00 lakh)**

The department of Environment was established in the state in 2006 in order to coordinate various environment related programmes implemented by various departments, agencies, PRI's, etc. During the plan period it is proposed to strengthen the department by recruiting specialists in various fields of environment. During the Annual Plan 2007-08, an Environment Management Agency has been created for coordinating various environment related projects implemented in the state. It is also proposed to create a core support staff under a Director to coordinate various activities of other departments related to environment. An amount of Rs. 25 lakh is set apart for this purpose during the Annual plan 2008-09. A portion of the outlay will be utilised for meeting the expenses connected with the functioning of various committees constituted under the department.

### **2. Environmental Education and awareness**

**(Outlay Rs. 20.00 lakh)**

Environmental education has become an inevitable tool in creating awareness on protection of environment. The outlay will be utilised for conducting seminars, workshops, quiz and film shows, Publication and preparation of manuals of different group of plants and animals and eco systems, celebrations and other World Environment day and Special days. The outstanding NGOs, experts, institutions and individuals would be honoured with environmental awards in recognition of their excellent contribution in the field of environment. An Envis node has already been established in the state in order to provide information related to environment. The outlay will also be utilised to maintain the Envis node of the state

A public interaction link will be provided in the information system.

### **3. Environmental Research and Development**

**(Outlay Rs. 50.00 lakh)**

Specific need based environmental research will be promoted in the area of low cost waste water treatment, River/lake water quality monitoring package, solid waste management and other need based areas. The projects would be implemented through various research institutions/university departments. The outlay will also cover the preparation of cost of State of Environment report. A portion of the outlay will be utilised for preparing Environment Atlas.

### **4. Biodiversity Conservation**

**(Outlay Rs.150.00 lakh)**

For *ex-situ* conservation of rare endemic plants, it is proposed to extend support to identified organizations in area where botanic gardens do not exist. Promote introduction of biodiversity and its conservation as an integral part in the educational curricula of Schools and Colleges. The Constitution of Biodiversity Management Committees at the local level needs to be completed and it is proposed to create Biodiversity Funds at all levels which would support the activities of Biodiversity Management Committees. The outlay is proposed for training to the Panchayat presidents on biodiversity and constitution of Biodiversity Management Committees and preparation of Peoples Biodiversity Register in each Panchayat and to establish district technical support group and training of resource persons, and purchase of computer. All the programmes will be implemented through the State Biodiversity Board. The functional expenses of the Board excluding salary would be met from the outlay. The amount will be released after approving the detailed project report.

### **5. Conservation of Coastal Eco-system**

**(Outlay Rs.10.00 lakh)**

Coastal areas forms highly complex and dynamic ecosystem sensitive to developmental pressures such as industrialisation. These could be minimised through prudent coastal zone management practices. The outlay is provided to prepare a project report for the conservation of coastal Ecosystem in the state.

### **6. Eco Restoration of Wet lands**

**(Outlay Rs.205.00 lakh)**

Wet lands are rich in floral and faunal biodiversity and they harbour a large number of endangered and threatened species. It is proposed to implement Management Action plans for Sasthamcotta, Astamudi and Vembanad wetlands in collaboration with R&D institutions, local governments, line departments and NGOs. Government of India has already sanctioned the Management Action plans. The outlay will be utilized to fill the critical gaps. A portion of the outlay will be utilized for the preparation of Management Action Plans for other wet lands like Vellayani lake and other important fresh water lakes.

## **7. River Action Plan**

**(Outlay Rs.500.00 lakh)**

In order to protect major rivers of the State, it is proposed to prepare comprehensive action plan for implementation with the support of various agencies including local governments. During the year 2008-09, an action plan will be prepared for Periyar. The support is provided under RIDF.

## **8. Protection of catchments of reservoirs of Water Supply Schemes**

**(Outlay Rs. 20.00 lakh)**

The outlay is intended to protect the catchments of water supply schemes. A quick assessment will be made about the ongoing protection works implemented in Sasthamcotta and Aruvikkara reservoirs and amount will be sanctioned based on the assessment report. Protection of new water supply schemes will be included during the plan period. The scheme will be implemented by the Soil Conservation Unit of the Department of Agriculture. The assistance received from Government of India for Sasthamcotta wetland will be dovetailed with this project.

## **9. Environment Impact Assessment**

**(Outlay Rs.10.00 lakh)**

Environment Impact Assessment is an integral part of development projects. EIA is a prerequisite for most of the projects in water resources, industries, infrastructure etc. During the Plan period it is proposed to strengthen the capacity building for EIA. The outlay will be used for meeting the costs associated with the Committee meetings, capacity building on EIA as well as to take up a pilot project on EIA

## **10. Air and Water Quality Monitoring**

**(Outlay Rs. 10.00 lakh)**

Water quality has been steadily degraded by a combination of factors including saline intrusion, sewage and industrial effluents and urban and agricultural run off. The presence of High fluoride content in ground water in concentration above permissible limits is reported in certain pockets of Attappady and Chittoor area of Palakkad and Alappuzha districts. It is proposed to strengthen the network of water quality monitoring systems in the State established under various departments including research institutions. The existing quality control laboratory of Ground water department will be strengthened as part of National Hydrology Project. A portion of the outlay is set a part for implementing air quality monitoring.