

## **CHAPTER V**

### **NARRATIVE EXPLANATION OF THE FINANCIAL REQUIREMENTS**

#### **FORESTRY AND WILDLIFE**

##### **FOREST EDUCATION AND TRAINING**

Expansion of forestry education to cater to the increasing needs is an essential activity for achieving the goal of Forest Conservation. It is necessary that the officers occupying important positions in State Forest Departments should have adequate background in the field of Forestry. IGNOU conducts training programmes for Indian Forest Service probationers. Besides refresher training courses for IFS officers under the scheme "Training of IFS Officers" are organised through premier management institutes of India. State Forest Service Colleges (SFSC) take care of training needs of State Forest service officers. Training of Range officers is conducted in Range Officers' College. To develop managerial skills of specialisation relating to conservation, optimum utilisation and increasing production and productivity over space and time in forest based products as well as large afforestation and social forestry programme there is an institute "Indian Institute of Forest Management". The Institute conducts a number of training programmes including a two-year post graduate diploma course in forest management. The plan outlays under the schemes IGNOU, Training of forest officers, SFSC and IIFM for 94-95 are Rs. 170 lakhs, Rs. 45 lakhs, Rs. 100 lakhs and Rs. 250 lakhs respectively.

3. To ensure proper forestry education in universities, financial assistance is provided to State Agricultural Universities through a scheme viz. Forestry Education. The scheme is under implementation in 14 State Agricultural Universities. The assistance is given through TCFRE. The purpose of the assistance is to support B.Sc. Forestry course and to set up separate faculty of forestry in the universities. About 300 graduates are being benefited under the scheme every year. During 1994-95 the various schemes under Forestry Education and Training will be continued. An outlay of Rs. 105 lakhs is earmarked in the budget of ICFRE for 1994-95 for Grants-in-aid to the State Agricultural Universities.

#### **FORESTRY RESEARCH**

Intensification for forest research towards fuller development of the Forest resources and its proper utilisation is one of the important objectives of this Ministry. To achieve this objective "Indian Council for Forestry Research and Education (ICFRE)" was set up in December 1986 by restructuring of Forest Research Institutes and Colleges. From 1st June, 1991, the ICFRE became an autonomous body of this Ministry. The objectives of the ICFRE are as under:

- To undertake, promote and coordinate forestry education, research and its application.
- To develop and maintain National Information Centre for forestry and allied services.
- To act as a clearing house for research and general information relating to Forest and Wildlife.
- To develop Forest Extension Programme.
- To provide consultancy services in the field of Forestry Research Education and Training.

Forest Research Institute (FRI) under ICFRE is Centre of Excellence in Forestry research. Other institutes of ICFRE take care of research needs in different eco geographical regions for carrying out research in different aspects of forestry.

These institutes will pursue their ongoing activities during 1994-95. The grant from Government for ICFRE during 1994-95 is Rs. 40.00 crores (Plan).

For Research and development in respect of ply-wood and allied products, there is a separate Institute "Indian Plywood Industries Research and Training Institutes" (IPIRTI). The Institute renders technical services to manufacturing units with a view to make optimum utilisation of available raw material for the manufacture of plywood and allied products. The Institute serves as an information, Training, Testing Centre for wood based industries. In the year 94-95, the Institute will continue its research, extension, demonstration and training activities. The plan outlay for IPIRTI for 1994-95 is Rs. 40 lakhs.

## **SURVEY AND UTILISATION**

To conduct forest resources survey, the scheme "Forest Survey of India including Application of Remote Sensing Techniques" is under implementation through Forest Survey of India - a subordinate office of this Ministry. The Scheme aims to achieve the following objectives:

- To assess the extent of forest cover and monitor on a 2 year cycle the broad changes in forest vegetation cover of the country by using multi satellite data on 1: 250,000 scale.
- To prepare thematic maps through use of remote sensing data with maximum essential ground truth verification on a ten year cycle. (Most ground truth verification would be done by respective States).
- To collect, store and retrieve necessary forestry and forestry related data for National and State Level Planning and to create a computer based National Basic Forest Inventory System (NBFIS).
- To design methodologies relating to forest surveys and subsequent updating. This would include methodologies for:
  - a. Vegetation mapping including thematic maps through the use of satellite imageries/aerial photographs.
  - b. Ground truth verification and
  - c. Growing stock and volume assessment. To undertake forest inventory work in selected areas.
- To impart training in application of remote sensing techniques etc. in Modern Forest Survey Techniques to foresters at various levels of responsibility in the States/UTs GOI.
- To keep abreast of the achievements in remote sensing technology and also build up a strong research and development base in remote sensing in the field of forestry along-with development of new algorithms and software for both image processing and general application.
- To support and oversee techniques/inventory work undertaken by States/UT Forest Departments.

Forest survey is an essential prerequisite for forest planning on scientific lines. Efforts are being made to acquire digital cartography system and map production facility and for this global tenders were floated. Plan outlay for 94-95 under the scheme is Rs. 400 lakhs.

## **FOREST CONSERVATION**

To deal with forest conservation matters and better enforcement of Forest (Cons.) Act, six Regional Offices were set up under the scheme "Strengthening of Forest Divisions". Regional Offices have following

1. Monitoring of implementation of conditions stipulated by the Government of India while approving diversion of forest land for non-forest purposes under Forest (Cons.) Act (all cases).
2. Monitoring of implementation of conditions and safeguards laid down for projects/activities after environmental clearances and pollution control measures taken by industries, local bodies, undertakings.
3. Site inspection of cases being referred to by the Ministry.
4. To assist States/UTs in preparation of Management plan for working forests.

The Regional Offices have been entrusted with the responsibility for deciding cases for diversion of forest-land for non-forest purposes up to the extent of 5 ha. except regularisation of encroachments; and examine cases between 5-20 ha. in consultation with State Advisory Board. During 1994-95, the Regional Offices will continue their activities and are expected to monitor 900 cases under Forest (Cons.) Act and 400 cases under Environment (Protection) Act. For 1994-95, the plan outlay under the scheme is Rs. 210 lakhs.

## **FOREST PROTECTION AND REGENERATION**

With the experience gained from Modern Forest Fire Control Project launched with the assistance of UNDP during the VII Plan, a centrally sponsored scheme "Introduction of Modern Forest Fire Control Methods in India" has been introduced during VIII plan. The scheme aims to develop well knit organised programme for each State for prevention, detection, and suppression of forest fire. The scheme is being implemented in 11 States with particular attention to most fire prone districts. The pattern of assistance is 100 per cent for selected non-recurring items like hand tools, water handling equipments, watch towers, fire resistant clothing etc. The outlay for 94-95 under the scheme is Rs. 200 lakhs.

The National Forest Policy 1988 provides for involvement of people in managing the forests to attain the desired objectives of forest conservation, extension of tree cover and meeting, the requirement of the people. With this aim in view a scheme "Association of Scheduled Tribes and Rural Poor in Regeneration of the Degraded Forests on Usufruct Sharing basis" is being implemented from 1992-93. The objectives of the scheme is to associate STs and rural poor in afforestation of degraded forests and to provide gainful employment and sustainable economic base to these people. The scheme is being implemented through the State Forest Departments on the basis of projects formulated for the purpose. Apart from the wages for the work done by these people they are entitled to usufruct rights and sharing of final harvest. The outlay for 94-95 for this scheme is Rs. 275 lakhs.

## **FOREST POLICY**

National Forestry Action Programme is being prepared for the entire country. This would highlight the state of forests and facilitate preparation of a comprehensive Action Plan for the conservation and development of the forests for the short, mid and long term planning. The National Forestry Action Programme will also facilitate identification and quantity identification of investment and technical assistance proposals for financial assistance in line with the National Forest Policy 1988. The outlay for 1994-95 for this scheme is Rs. 95 lakhs.

## **NATIONAL AFFORESTATION AND ECO-DEVELOPMENT BOARD (NAEB)**

An outlay of Rs. 103 crores is made for the year 1994-95 for the schemes/programmes of National Afforestation and Eco-Development Board which are listed below:

1. Integrated Afforestation and Eco-Development Projects Scheme.
2. Grants-in-Aid Scheme (for Voluntary Agencies).
3. Area Oriented Fuelwood/Fodder Projects Scheme.
4. Aerial Seeding Scheme.
5. Raising of Minor Forest Produce including Medicinal Plants Scheme.
6. Seed Development Scheme.

### 2. Schemes/Activities:

2.1 The following schemes/activities on wastelands development will be implemented by the NAEB during 1994-95:

#### 2.2 Integrated Afforestation and Eco-Development Projects Scheme

2.2.1 This scheme was initiated during 1989-90 Integrated Wasteland Development Project Scheme and renamed as Integrated Afforestation and Eco-development Projects scheme in 1993-94. The basic objective of the scheme is to take up projects ensuring an integrated approach to land management, specially wastelands development through.

- (i) Preparation of integrated afforestation and eco-development plans on the watershed principle;
- (ii) Conservation of selected ecologically fragile watersheds through protection, afforestation, pasture development, soil and water conservation, etc.
- (iii) Regeneration of degraded forest areas with focus on diverse vegetation of indigenous species.

2.2.2 This is a 100% Centrally Sponsored Scheme with a Central Sector component.

2.2.3 For 1994-95, an allocation of Rs. 48 crores has been proposed for this scheme. The physical targets for the year is to cover an area of 62,000 hectares.

#### 2.3 Grants in Aid to Voluntary Agencies

1.3.1. The NAEB has a mandate to promote peoples participation through active involvement of non-governmental organisations, voluntary agencies. and the public at large. To this end, appropriate voluntary agencies non-governmental organisations are identified, encouraged and assisted to raise nurseries for tree planting, on forest lands and adjoining areas and related activities, which are financed from the plan funds of the Board. NAEB has constituted a Standing committee, which includes some representatives of NGO's, for the appraisal and sanction of projects under the scheme.

1.3.2. For 1994-95 an amount of Rs. 1.5 crores has been proposed for this scheme. It is proposed to sanction 35 projects to the voluntary agencies for taking up afforestation & eco-development work.

1.3.3. Apart from the normal monitoring by the Board Secretariat, evaluation of ongoing and completed projects is carried out through independent agencies. A selected number of projects would be undertaken for evaluation during 1994-95.

#### 2.4 Area Oriented Fuelwood and Fodder Project Scheme.

2.4.1 Under this scheme, NAEB provides assistance to the State Forest Departments for non-arable lands, public lands (specially degraded forest lands) through integrated treatment comprising, of soil and moisture conservation, afforestation, silvipasture development agroforestry on degraded private lands etc. This is an ongoing scheme started during Seventh Plan period. The scheme is 50 per cent Centrally sponsored.

2.4.2 For 1994-95 an amount of Rs. 34 crores has been proposed for the scheme. It is proposed to cover 68,000 hectares area during, 1994-95.

#### 2.5 Aerial Seeding

2.5.1 This is a 100% Centrally sponsored Scheme introduced in 1988-89 to assist a few selected States in systematically carrying out aerial seeding operation. The objectives of the scheme are:

- (i) To study the effectiveness of the aerial seeding techniques of afforestation of difficult and inaccessible areas.
- (ii) To study the cost and time effectiveness of aerial seeding vis-a-vis the conventional afforestation techniques.
- (iii) To standardize and upgrade the various operations involved so as to help in large scale afforestation.

2.5.2 During 1994-95 an amount of Rs. 1.50 crores has been proposed under the Scheme to cover an area of 22,500 hectares.

#### 2.6 Scheme for raising Plantations of Minor Forest Produce including Medicinal Plants

2.6.1 The scheme is 100% Centrally Sponsored and aims at augmenting production of minor forest produce (like bamboo, cane, oilseeds bearing trees tendu, grasses etc.) fruit bearing and other species including medicinal plants.

2.6.2 During 1993-94 an amount of Rs. 19 crores has been earmarked for the scheme to cover an area of 24,000 hectares.

#### 2.7 Seed Development Scheme

2.7.1 The scheme is 100% Centrally sponsored and aims at creating infrastructure at the State level for production and testing of quality tree seeds, including collection, testing certification, storage and distribution of such seed.

2.7.2 During 1994-95 an amount of Rs.2 crores has been earmarked for the scheme and 23 states will be assisted under this scheme for strengthening of infrastructure for seed development in the States.

### **3. Other Activities/Programmes:**

#### 3.1 Monitoring and Evaluation

3.1.1 For collecting and analysing information useful to project management and for increasing effectiveness of its implementation NAEB monitors the following:

- (a) Production and distribution or seeding / saplings
- (b) Rehabilitation of degraded forest lands.
- (c) Survival rate among the old and the new plantations.
- (d) People's participation in the programme.

3.1.2. The State Governments have their own arrangements to monitor progress in trees planting/ afforestation under point no. 16 of the 20 point programme. At the Centre, the achievements are monitored by the National Afforestation & Eco-Development Board and the Ministry of Programme Implementation. Externally aided projects are monitored by the donor agencies also.

3.1.3 It was felt that information about the afforestation activities was not adequately available to per representatives at the people themselves which gave rise to criticism about the success of afforestation programmes. It was also felt that availability of such information would lead to better monitoring and evaluation of the afforestation programme. The information containing district/talukwise information of plantation carried out during 1991-92 obtained from States/UTs was computerised & bound documents were placed in Library of Parliament. House as well as Ministry of Environment and Forests. Similar information in regard to 1992-93 is being collected and would be placed in Library of Parliament House as well as Ministry of Environment & Forests for information of MPs and general public. The sample cheeks through independent agencies/experts will also be conducted in identified districts representing different agro-climatic zones during 1994-95.

3.1.4 For 1994-95, an amount of Rs. 0.75 crore, has been earmarked for the scheme to undertake further evaluations.

### **3.2 Regional Centres**

3.2.1 Seven Regional Centres were set up by NAEB. These are located in the following institutions:

- (1) University of Horticulture and Forestry, Solan (H.P.)
- (2) University of Agricultural Sciences, Bangalore;
- (3) Indian Institute of Management, Ahmedabad;
- (4) Indian Institute of Forest Management, Bhopal;
- (5) Agricultural Finance Consultants, Bombay/ New Delhi;
- (6) Jadavpur University, Calcutta.
- (7) North-Eastern Hill University, Shillong.

The Regional Centres provides support to NAEB and States in project appraisal, monitoring and evaluation special studies etc. It is proposed to expand the mandate of the Centres to provide technical back-up for the activities of NAEB.

3.2.2 During 1994-95 an amount of Rs. 1.60 crores has been earmarked for the Scheme. Preparation of status report and evaluation of NAEB activities would be undertaken by the Regional Centres during 1994-95.

### **3.3 Communication**

3.3.1 The main objective is to create general awareness about the problems of deforestation and land degradation (which in turn leads to fuelwood and fodder crisis) through media like radio and television and through traditional and folk art.

3.3.2 During 1994-95 an amount of Rs. 30 lakhs has been earmarked for the Scheme. Experience sharing workshops would be organised to disseminate information, traditional folk media would be utilised to propagate Social Forestry & community participation in forest management. Follow-up action Communications strategy will also be undertaken during 1994-95.

#### 3.4 Professional and Special Services

The National Afforestation & Eco-Development Board takes up special studies of important issues relating to policy formulation, programme implementation, etc. The Board also engages special consultants for taking up a variety of assignments.

3.4.1 During 1994-95 an amount of Rs. 0.20 crores has been earmarked for the scheme to undertake studies on the areas like employment generation, reorientation of existing programmes etc.

#### 3.5 Externally Aided Social Forestry Projects

3.5.1 Externally Aided Social Forestry Projects are being implemented in 9 States with donor assistance from various Donor agencies like World Bank, SIDA, OECD, ODA and EEC. The State Governments are directly responsible for the implementation of the externally-aided projects and are also expected to monitor the project and provide necessary information to the NAEB and the donor agency, as per the requirements of the projects.

3.5.2 The National Afforestation & Eco-development Board monitors the projects, on behalf of the Government of India; it also co-ordinates those aspects which relate to policy at the Government of India level and ensures that the project implementation is as per the declared policy of the Government from time to time.

3.5.3 A number of projects are likely to be identified and posed for external assistance during 1994-95.

#### 3.6 Indira Priyadarshini Vriksha Mitra Awards (IPVM):

3.6.1 IPVM awards are presented annually under five categories. The awards are given on the basis of innovative efforts and outstanding work in afforestation, with special reference to eco-development and involvement of the people.

## **WILDLIFE**

Wildlife Preservation including Enforcement of Wildlife (Protection) Act, CITES etc., is one of the main important functions of this Ministry. Under the provisions of Wildlife (Protection) Amendment Act, 1991 passed by Parliament in October, 1991, Central Zoo Authority of India was set up in February, 1992 to oversee the management of Zoos in the country. Rules for recognition of Zoos have been framed in consultation with the State Governments and have been notified in August, 1992. Grants-in-aid will continue to be provided from this Ministry to Central Zoo Authority in 1994-95 so as to enable the Authority to provide assistance to Zoos in their development on scientific lines, besides improvement in technical skills of management. Plan outlay for 1994-95 for Central Zoo Authority is Rs. 300 lakhs.

There are various centrally sponsored schemes for providing assistance to State Governments for Wildlife Preservation. Under the scheme "Assistance for Development of National Parks and

Sanctuaries”, 100 % assistance is provided to State Governments for non-recurring items for development work for protection of Wildlife in National Parks and Sanctuaries. In case of National Parks, 50% assistance on selected recurring items is also provided. During 1994-95, 230 Sanctuaries and 60 National Parks are expected to get assistance under the scheme. The plan outlay for 1994-95 under the schemes, “Assistance for Development of National Parks and Sanctuaries” is Rs.1150 lakhs.

Under the scheme Project Tiger, 21, Tiger Reserves notified for this purpose are entitled to get central assistance at 100 % for non-recurring items and 50% for recurring items. The Plan outlay for 1994-95 under this scheme is Rs. 700 lakhs.

For eco-development in and around protected areas (National Parks and Sanctuaries and Tiger Reserves), there exists a scheme “Eco-development around National Parks and Sanctuaries including Tiger Reserves”. Under this scheme, assistance is provided to protected areas for augmentation of fuel, fodder and other usufructs supply in sustainable manner for improving quality of life of rural people. Training programmes for improving the management capabilities of forest officers are organised through the scheme, “Strengthening of Management Planning Capabilities”. The plan outlay for 1994-95 under the scheme eco-development around Protected Areas and Strengthening of Management Planning Capabilities are Rs. 580 lakhs and Rs. 100 lakhs respectively.

Under the Scheme Project Elephant, assistance is provided to 23 identified elephant areas in 11 States. The pattern of assistance is 100% and is provided to the States for improving the existing elephant habitats and restoration of migratory routes etc The plan outlay 1994-95 for the scheme is Rs.500 lakhs.

Prevention of Cruelty to Animal Act, 1960 is implemented through Animal Welfare Board - a statutory organisation established under Section 4 of the Act. The Board provides financial assistance to various organisation and institutions in carrying out activities to prevent cruelty to animals and ensure their compassionate treatment. Plan outlay 1994-95 for this scheme is Rs. 130 lakhs.

Ensuring better management of protected areas, Wildlife Institute of India conducts training course to train managers and biologists. Wildlife Institute of India is an autonomous body and gets grants-in-aid from this Ministry. The Institute also undertakes research activities connected with Wildlife and provides Advisory and consultancies services to the Central and State Governments. The activities of 1994-95 of the Institute includes development of the new campus updating computers facilities, conducting the regular and new courses, initiation of new research programme, etc. Plan outlay 1994-95 for Grant-in-aid to Wildlife Institute of India is Rs. 350 lakhs.

## **ECOLOGY AND ENVIRONMENT**

### **SURVEY**

#### **BOTANICAL SURVEY OF INDIA**

The primary functions of BSI are to conduct survey and identification of genetic resources of the country, listing out endangered species, collection and maintenance of germ plasm and gene bank of endangered, threatened and vulnerable species and to undertake measures for the effective conservation of such species. It also identifies, collects and preserves specimens of plants which are economically and medicinally beneficial to human beings. Further, it is compiling a National Data-Base on plant resources in the country based on exploration of Floral resources.

During 1994-95, the Botanical Survey of India proposes to undertake floristic survey of Assam, Manipur Mizoram, Andhra Pradesh, Lakshadweep, Himachal Pradesh, parts of Uttar Pradesh, Aravalli Hills, Western Ghats, Andaman and Nicobar Islands etc. Besides, it proposes to bring out various publications on National Flora and Flora of States. Further, it is proposed to computerise type collections, finalisation of publication of manuscripts and live plant collections. It will continue maintenance of herbaria, Botanic Gardens/Experimental Gardens at different regional Circles, captive breeding of endangered species of plants. It also proposes to set up Seed Bank for preservation and propagation of threatened and vulnerable species and also a tissue-culture repository for propagation of orchids, economically important species and medicinal plants.

## **ZOOLOGICAL SURVEY OF INDIA**

Zoological Survey of India was established in 1916, with the main objective of obtaining information on the fauna of India. Over the successive plan periods, its functions gradually expanded encompassing areas like endangered species and characteristic fauna of various ecosystems. ZSI was restructured during 1987 based on a detailed review. Its objectives were re-defined in 1991 and targets laid down in a time frame spanning up to 2000 AD.

The objectives of ZSI have been defined as below:

- (i) Exploration and survey of faunal resources.
- (ii) Taxonomic and ecological studies.
- (iii) Maintenance and development of National Zoological Collections.
- (iv) Status survey of endangered species.
- (v) Environmental impact assessment studies.
- (vi) Maintenance of Museums at Headquarters and Regional Stations.
- (vii) Central referral, information, advisory and library services.
- (viii) Publication of Fauna of India.
- (ix) Publication of State Fauna and results of other studies.
- (x) Organising workshop/seminar/symposia on topics of national and international concern.
- (xi) Participation in multi-disciplinary/multiorganisational expedition.

During 1994-95 the Zoological Survey of India proposes to continue Faunal explorations (a total of about 92 surveys) in priority areas such as Nokrek and Bal phakram, Sri Sailam Himalayan ecosystem, Tropical Rain Forest ecosystem, coral reefs of Andaman and Nicobar Islands. Godavari estuary, Loktak, Renuka and Kolleru Lakes. In addition, survey of seven States and Status Survey of 5 species of mammals will also be undertaken.

Documents will be processed for publication of fauna of Western Ghats, Ujni Wetland, Palamau and Manas Tiger Reserves, Nilgiri and Nanda Devi Bio-sphere Reserves, and on the State Fauna of Sikkim and Manipur.

Three regular publications and State Fauna of West Bengal and Meghalaya will be brought out. The work on Fish gallery in the Indian Museum will be completed. Regional Museum at Solan and Shillong will be reorganised. Computerisation of general collections will be undertaken. Computerisation of the data of Animal ecology in Environmental Information Service (ENVTS) will be continued and quarterly Newsletters on ENVIS will also be brought out.

Training programme will be conducted for Insect identification and Taxidermy. The marine Aquarium at Digha will be put into operation.

### **ENVIRONMENTAL EDUCATION, AWARENESS & TRAINING**

The scheme was introduced in the VII Plan in the Central Sector with the objective of creating environmental awareness as well as to extend techniques and methods of environmental education to almost all age groups of the country's population through exhibitions. Camps, training programmes, seminars, TV, Radio programmes and various other non-formal educational methods. Under the scheme, National Environmental Awareness Campaign has been launched since 1986 to create environmental consciousness at all levels.

The campaign would be continued during the year and various activities in this area would be considerably stepped up. Wider coverage of the programmes throughout the country reaching out to various target groups, audiences, development of adequate infrastructure for promoting environmental education at the national and regional level and introduction of more imaginative and innovative programmes will be given priority during the period.

### **Parvavaran Vahini**

In order to create environmental awareness and involvement of people through active participation, reporting of illegal acts pertaining to forests, wildlife, pollution and environmental degradation, a new scheme namely Paryavaran Vahini has been launched for each district specially identified for the purpose. There will be one Paryavaran Vahini for each district and each Vahini will have a strength of up to 100 members. About 109 such districts in the country will be taken up with the emphasis on Districts having high pollution incidence and density of forests and tribal population. The number of districts will be increased from the next year as the scheme gets experience and momentum, students; youth individuals and NGOs specially identified for this purpose would be the members of the Vahini. District Collector will be responsible to take action on the complaints by the Vahini and pursue with the respective authorities. Pollution control test kits and samples will be distributed on a selective basis after careful identification. A token grant of Rs. 200 per month will be given to each member to partially reimburse the expenditure met by him for attending the meetings and other expenses. The funds for the distribution of grant to the members would be provided by the Ministry periodically to the State Government which in turn would ensure its distribution through the District Collectors concerned.

## **Grants-in-Aid to Professional Societies**

Under the scheme more professional societies and appropriate institutions would be supported for developing activities and projects in the field of environment as well as to develop exhibition galleries and educational programmes relevant to ecology, wildlife and environment.

## **ENVIRONMENT INFORMATION SYSTEM (ENVTS)**

Environmental Information System (ENVIS) set up by the Ministry in 1982 provides descriptive information and numerical data on various subjects related to environment to decision makers, researchers, academicians, policy planners, environmentalists, engineers and the general public. It is a decentralised system with a network of distributed subject oriented centres, ensuring integration of national efforts in environmental information, collection, collation, storage, retrieval and , dissemination to all user groups. ENVIS has so far set up 16 Centres, known as ENVIS Centres in various priority areas of environment like Air and Water Pollution; Toxic Chemicals; Bio-degradation of Wastes Ecology of Western Ghats; Desertification, Estuaries, Mangroves, Corals and Lagoons; Occupational Health; Environmentally sound and appropriate technologies; Energy and Environment; Himalayan Ecology; Animal Ecology; Solid Wastes and Human settlement, etc. More such centres on other priority areas would be set up as network partners in phases to meet the objectives of ENVTS. ENVIS publishes 3 quarterly journal known as Paryavaran Abstracts reporting research in the Indian context on environment and related areas. ENVIS also functions as a National Focal Point (NFP) as well as Regional Service Centre (RSC') for the South Asia Sub-region of INFOTERRA Network - an International Information System of United Nations Environment Programme (UNSP).

As the activities of the existing ENVIS Centres would be continued and more ENVIS Centres as network partners would be set up as well a. networking of all the ENVIS Centres with the Focal Point would be undertaken, an amount of Rs. 128 lakhs (Rs. 110 lakhs plan and Rs. 18 lakhs non-plan) would be required for the year 1994-95. The ENVTS Centres would also be provided financial support for the acquisition of latest information technology and tools to retrieve and disseminate information speedily and punctually to its user community. The information repository both at the Focal Point as well as at the Centres would be strengthened with a view to provide substantive information to all concerned.

## **NATIONAL MUSEUM OF NATURAL HISTORY**

The National Museum of Natural History, New Delhi (NMNH) is an institution devoted to non-formal environmental education. Opened to the public in 1978, this is the only museum of its kind in India. With over fifteen years of service to environmental education, the NMNH today is widely recognised for its outstanding exhibit galleries and innovative educational programmes. Exhibit galleries and educational activities are the most important means of the NMNH to disseminate information on ecology, environment and conservation. The museum today has four full-fledged galleries dealing with different aspects of Natural History, Ecology & Conservation, a Discovery Room for children, an Activity Room for pre-school children and a Bio-Science Computer Room for teenagers & college students. The activities of the museum also include

organisation of temporary exhibitions a Mobile Museum service for rural areas, a School loan programme for enriching the classroom teaching of biology and large number of other educational activities to promote environmental education and conservation awareness. The NMNH today attracts an annual visitor-ship of approximately 5 lakhs and reaches out to more than 20 lakhs people through its various programmes and activities.

The NMNH is also engaged in a scheme of organising Regional Museums of Natural History to promote environmental education. The first such Regional Museum is being set up at Mysore where the construction of a new building for the museum has been completed and exhibit development is in progress. Two other museums are being planned to be set up Bhopal and Bhubaneswar.

The budget estimate of Rs. 200.00 lakhs under Plan and Rs. 60.00 lakhs under Non-Plan (Non-Plan provision only for NMNH, New Delhi) is meant for development of exhibit galleries, educational programmes and activities, equipments, and supplies for technical units and laboratories, procurement of exhibit preparation materials, publications, training of staff etc. as are targeted under the Plan projects of the National Museum of Natural History, New Delhi and the Regional Museums of Natural History at Bhopal and Bhubaneswar.

The capital provision of Rs. 190.00 lakhs is for the construction of new buildings at Bhopal and Bhubaneswar for which land has been acquired, architectural plans finalised and project reports prepared for implementation. A provision for the construction of Staff Quarters for the RMNH, Mysore for which 3 acres of land has been allocated by the Govt. of Karnataka; and a token provision towards the construction of the Headquarters building for the NMNH in New Delhi have also been included.

## **CENTRES OF EXCELLENCE**

Following five Centres of Excellence have been set up so far in order to promote research and training in the priority areas of environmental science, management and awareness:

- (i) Centre for Environment Education, Ahmedabad (CEE).
- (ii) CPR Environmental Education Centre, Madras (CPREEC).
- (iii) Centre for Ecological Sciences, Bangalore (CES).
- (iv) Centre for Mining Environment, Dhanbad (CME).
- (v) Salim Ali Centre for Ornithology and Natural History, Coimbatore (SACON).

CEE as well as CPREEC are engaged in production of environmental education resource material and to propagate education among children as well a community. CES has been established to focus on ecology and environment of Western Ghats. Various research projects on biological diversity, population biology and ecology, little known economic species, ecology of Shola Forest, Geographical distribution of diversity of birds, plant reproduction strategy and study of forest dimensions etc. have been undertaken by this Centre.

CME was established at Indian School of Mines, Dhanbad with the following objectives:

- (i) To impart training in environmental science and technology with reference to environmental management in mining areas;
- (ii) To carry out research in the field of mining environment;
- (iii) Initiation of regular academic programmes leading to M. Tech degree in environmental science and engineering, and
- (iv) To undertake consultancy and testing work to help mining and mineral industries in the neighbouring areas in solving environmental pollution problems.

SACON has been set up to work in the area of ornithology and natural history. All the Centres of Excellence will continue their present activities. More environmental education material will be prepared and several research projects will be undertaken by these Centres. Apart from production of resource material, these centres will be encouraged to organise training on environmental education ecology and mining at national and regional levels and to organise exhibitions to propagate and inculcate awareness among the common people.

### **NATIONAL NATURAL RESOURCES MANAGEMENT SYSTEM**

The main objective of the scheme is the utilisation of the remote sensing technology with conventional methods in monitoring our natural resources for attaining sustainable development by addressing following aspects:

- (i) Optimal utilisation of the country's natural resources by a proper and systematic inventory of the resource availability
- (ii) reducing regional imbalances by effective planning and in tune with developmental efforts, and
- (iii) maintaining ecological balances with a view to evolve and implement the environmental guidelines.

The Standing Committee on Bio-resources and Environment has identified 37 priority areas for undertaking research projects involving remote sensing technology. During the year 1994-95, financial assistance would be provided to the ongoing projects already undertaken under the scheme during the previous year.

### **WETLANDS**

The scheme on Conservation and Management of Wetlands was initiated in 1987. The main objectives of the programme are to conserve the wetlands in the country, lay down policy guidelines for implementing programmes of conservation and management, under-take priority wetlands for intensive conservation and to prepare an inventory of wetlands in India.

The main activities under the programme are:

- Formulation and implementation of management action plans for priority wetlands.
- Promotion of research activities relating to environmental issues and management of wetlands on sound ecological basis.
- Assessment of wetland resources in India and their loss in time series.
- International collaboration.
- Identification of wetlands of national importance.

- Monitoring and evaluation.

The Central Government provides full financial assistance for implementation of Management Action Plan prepared by the concerned State Governments. A National Committee on Wetlands, Mangroves & Coral Reefs has been constituted to oversee the implementation of the wetland programme. So far, 21 wetland's have been identified for intensive conservation and management purposes.

An amount of Rs. 150 lakhs has been proposed for 1994-95 for implementation of management action plans and sanctioning of research projects.

## **MANGROVES AND CORAL REEFS**

The scheme on Conservation and Management of Mangroves was initiated in 1987 with the following objectives:

- To undertake appropriate policies for conservation of mangroves and related eco-systems including coral reefs.
- To promote research and training on mangroves and related ecosystems.
- To undertake preparation of management plan for identified areas for conservation. - To undertake suitable action programmes for conservation of mangroves and coral reefs.
- To collaborate with UNDP/UNESCO and other relevant international bodies in the field of mangrove research and conservation.

The Management Action Plans are formulated by the State Governments based on the problems confronting mangrove areas. Full financial assistance is being provided by the Central Government for implementation of Management Action Plans. So far, 15 mangrove areas have been identified in different states for intensive conservation and management purposes.

An amount of Rs. 150 lakhs has been proposed for 1994-95 for implementation of management action plans and sanctioning of research projects.

## **BIOSPHERE RESERVES (BRs)**

The Biosphere Reserve programme is intended to conserve the representative ecosystems. It is aimed at providing in situ conservation of plants, animals and micro organisms. The concept emphasizes the need for the conservation of the entire ecosystems of suitable size to ensure self-perpetuation and unhindered evolution of the living resources.

A National Committee has been constituted to oversee the implementation and monitoring of this programme. A Scientific Advisory Committee has also been constituted to oversee the Research Activities under this programme. Financial assistance is given to the State Governments for implementation of management. Action Plans and Research activities. A total no of 14 sites were identified as potential Biosphere Reserves under this programme. Out of these, so far, 7 Biosphere Reserves have been set up.

An amount of Rs. 300 lakhs has been asked for 1994-95 for implementation of various Management Action Plans in the existing sites and also for some new Biosphere Reserves which will be established. The State Governments will be asked to send the Management Action Plans well in advance. Comprehensive Management Action Plans have already been received from various State Governments. The assistance to be provided is being discussed in the National Biosphere Reserve Committee which consists of eminent Scientists, administrators, foresters etc.

## **BIODIVERSITY CONSERVATION**

A scheme on Biodiversity Conservation was initiated during 1991-92 to ensure proper coordination among various agencies concerned with issues relating to conservation of biological diversity, and to review, monitor and evolve adequate policy instruments for the same. An In-house Committee set up to serve as a common forum and working linkage among the various agencies had constituted two sub-groups to look into the scientific needs and management gaps in the protected area network.

In order to undertake specific studies to fill the gaps in the existing knowledge on Biodiversity, finalization and publication of a status report of Biodiversity Conservation, the estimated financial requirement for 1994-95 is Rs. 50 lakhs.

## **ASSISTANCE TO BOTANIC GARDENS**

This scheme was initiated in 1991-92 to augment the activities for conservation and propagation of plant genetic resources in different regions of the country through a network of Botanic Gardens and field centres. Under this scheme, a one-time non-recurring financial assistance is provided to botanic gardens in different phytogeographic regions of the country for strengthening their existing facilities for conservation and propagation of threatened and endangered endemic plant species of that region; and education and public awareness of endemic plant species.

For screening and examination of proposals received from Research Institutes, Universities, State Governments etc. certain criteria have been evolved by an expert group. The Botanical Survey of India (BSI) has also identified a list of some of the most vulnerable or endangered flowering plants in different phytogeographic regions of the country that need to be conserved and propagated on a priority basis. Financial assistance is being provided in accordance with these criteria.

For finalization of Management Action Plans for identified Botanic Gardens, creation of new Botanic Gardens and strengthening of existing Botanic Gardens, an amount of Rs. 50 lakhs would be required for 1994-95.

## **RESEARCH AND DEVELOPMENT**

Environmental Research broadly aims to attempt solution to environmental problems together with development of research data base and to evolve strategies for judicious utilisation of resources. Further, it helps in planning, formulation and development of programmes for environmental protection, conservation and development together with the creation of facilities

To achieve the objective, grants-in-aid research projects in the identified thrust areas are sanctioned to various institutions/universities and non-governmental organisations all over the country.

Under the scheme, the programmes such as Man and the Biosphere Programme, Environmental Research Scheme, and Integrated Action-oriented Research, Development and Extension programme on Eastern and Western Ghats are included.

### **ECO-TASK FORCES**

Eco-Task Forces is a Joint Venture of the Ministry of Environment and Forests, Ministry of Defense and the concerned State Governments to undertake Eco-restoration work in selected environmental degraded areas. The main aim of the scheme is restoration of degraded eco-systems through afforestation, soil conservation etc. The scheme is currently operational in three States of Uttar Pradesh, Rajasthan and Jammu & Rasilmir. The scheme is being executed through deployment of ex-servicemen by the Ministry of Defense. The activities include afforestation. pasture development, soil and water conservation and other restorative works.

### **G.B.PANT INSTITUTE OF HIMALAYANT ENVIRONMENT & DEVEEOPMENT**

The G.B. Pant Institute of Himalayan Environment & Development was established in August, 1988 as an autonomous organization of the Ministry to deal with the environmental problems of the Himalayan Region. It carries out and coordinates research activities in this region.

### **PREVENTION AND CONTROL OF POLLUTION**

Prevention of Air & Water Pollution: The Central Pollution Control Board (CPCB) was set up in 1974 under the Water (Prevention and Control of Pollution) Act, 1974. The main objective of the Board is to advise the Central Government on problems of water and air pollution and to plan and execute a nation-wide programme for prevention, control and abatement of pollution in the country. The Central Board coordinates the activities of various State Pollution Boards by providing the technical guidance and assistance.

A total outlay of Rs 450 lakhs (Non Plan) and Rs. 373 lakhs (Plan) has been allocated for 1994-95 for the projects and schemes relating to Pollution Assessment & Monitoring, Laboratory Management, Development of Standards, Training, Data base management and Library, Pollution control Enforcement. Development of Pollution Control Technology Development Application and Demonstration). Mass awareness etc.

### **Environmental Audit**

Environmental Audit has been started in 1992-93 and will continue for the whole of the VIII Plan period. It is an assessment of an industry of its processes, technology etc. to ensure observance of pollution standards, waste minimisation etc. The scheme is proposed to be implemented in three phases. Phase I has already started. A notification has already been published under which all the industries which are required to take consent or authorisation or

both are required to take submit an environmental statement in the prescribed form to the respective state pollution control board beginning from 1993. Under Phase II, training will be provided to staff of the Central and State Pollution Control Boards and industry in conducting the audit. Under Phase III, the qualification and Duties of the accredited environmental auditors will be finalised with the help of the institutions and professional bodies viz. Institute of Chartered Accountants and Institutes of Costs and Works Accountants and industry associations. An amount of Rs. 10 lakhs has been provided for 1994-95. The scheme will continue for the whole of VIII Plan.

#### Adoption or Clean Technologies by Small Scale Industries'

This scheme was started during 1992-93 and will continue for the whole of the VIII Plan period. It has 3 components:

- (a) The Small Industries Development Bank of India (SIDBI) will provide financial assistance for modernisation of small industries directly by way of term loans etc. Through the scheme, subsidy will be given to provide low interest loan to SSIs.
- (b) Research and Development programmes will be carried out for innovation, identification, diffusion of clean technology and for creation of data base.
- (c) An awareness programme and personnel training of the small scale industries will be carried out through the Development Com-missioner, Small Scale Industries with the support of various research olganlsations/ nodal sectoral institutions.

Assistance for abatement of pollution and Environmental Commission and Tribunal

The main objective of the scheme is to oversee and notify the various legislative measures relating to environment and to bring about amendments to the various legislative acts from time to time. During recent limes, various acts like Environment Protection Act. 1986, Water (Prevention & Control of Pollution Cess) Act 1977. Public Liability Insurance Act 1991, Environment Friendly Products, Environment Tribunal and Environment Commission have been either reviewed by way of amendments or fresh legislation initiated.

Various activities like schemes for Labeling of Environment Friendly Products, setting up of Environment tribunals at National and State levels for dealing with compensation cases, functioning of State Environment Protection Councils, assistance to State Environment Protection Councils, assistance to State Pollution Control Boards and State/UT Departments for strengthening their setup, awareness campaign for Public Liability Insurance Act etc. are being carried out Steps have been taken for implementation of Public Liability Insurance Act.

#### **Hazardous Substance Management.**

The Environment (Protection) Act 1986 places on the Central Government the responsibility of laying down procedures and safeguards for handling of hazardous substances and prevention of accidents. Three sets of rules have been prepared to regulate the handling of hazardous chemicals, hazardous microorganisms/genetically engineered organisms and wastes The main objective of the scheme is to lay down the procedures and safeguards for handling of hazardous substallces and to prevent and control the accidents arising out of hazardous substances. The scheme for Hazardous Substances Management has been revised to incorporate measures for

solid waste management and hazardous waste management, establishment of a National Register for Potentially Toxic chemical, establishment of a crisis response mechanism at state level and District level hazard analysis.

### **WORLD BANK AIDED INDUSTRIAL POLLUTION CONTROL PROJECT:**

The industrial pollution control project includes a line of credit of \$ 155.6 million from World Bank. The project came into effect from November 6, 1991. The project has 3 major components:

- (i) Institutional development
- (ii) Investment component
- (iii) Technical assistance component.

Of the \$ 155.6 million a total of \$ 2604 million is to be made available as credit to Government of India through Plan Finance Mechanism. These are to be channelised to the different components as given below:

	(Amount \$ million)
(i) Institutional Development of SPCB	12.60
(ii) Common Effluent Treatment Plants (CETPs)	12.00
(iii) Technical assistance	1.44

The project is being actively implemented from 1992 onwards and hence the provision of Rs. 15.00 crores being made for 1994-95 is expected to be fully utilised.

During the financial year 1992-93 a sum of Rs. 1,45,77,050 and Rs 6,53,000 during 1993-94 was released to various institutions for conducting training programmes for the staff of the State Pollution Control Boards under the Institutional Development Component. Further, an amount Rs. 22,15,625 had been released to UP and Maharashtra Pollution Control Boards for undertaking civil constructions/refurbishing of the State Board laboratories. For procuring the equipment under the institutional development component a sum of Rs. 5.02 crores had been released to Director General of Supplies & Disposals (DGS&D) Ministry of Supply.

A sum of Rs. 15 crores has been earmarked for taking up various activities under the World Bank project, of which Rs. 12 crores is proposed for taking up activities pertaining to procurement of equipment, training of the SPCB staff, and civil construction of the State Board laboratories. Rs. 3 crores shall be ear-marked for implementing projects pertaining to CETPs.

All the above activities need to be taken up with immediate effect as the World Bank II Project is proposed to be initiated during end 1994.

### **IMPACT ASSESSMENT**

Environmental Impact Assessment (EIA) is an exercise to evaluate the beneficial and adverse effects of developmental projects/activities on the environmental system including socioeconomic, cultural and aesthetics concerning Environment. Environment Impact Assessment in this country was first started in 1977-78 when Planning Commission requested

the then Department of Science and Technology to take up Environmental Impact Assessment of River Valley projects. This was later extended to mining industries, thermal power, ports and harbours etc. At present, Central Government appraises the following types of 58

- Projects which require approval of the Public Investment Board/Planning Commission/Central Electricity Authority etc.
- Projects referred to this Ministry by other Ministries.
- Projects which are sensitive and located in environmentally degraded areas.

## **CIVIL CONSTRUCTION UNIT**

Civil Construction Unit (CCU) headed by Chief Engineer (Civil) was set up in the Ministry of Environment and Forests in August, 1987 for taking up important works of the Ministry on priority basis, in pursuance of the Government decision that major scientific departments with a substantial annual civil works budget should have a Civil Engineering Unit. These works relate to various units of the Ministry viz., Botanical Survey of India, Zoological Survey of India, National Museum of Natural History, Indian Council of Forestry Research and Education and Training (ICFRE), G.B. Pant Institute of Himalayan Environment and Development, Indira Gandhi National Forests Academy, Forests Survey of India, and National Zoological Park.

The Civil Construction Unit has taken up 70 new major schemes so far with total estimated cost of Rs. 83 Crores. The works mostly consist of office-cum-laboratory buildings, Herbarium, National Museum of Natural History, Forest Research Institutes, National Forest Academy, National Zoological Parks and residential quarters for the staff of the various above Institutes located all over India.

Out of the above, 36 works costing Rs. 55.89 crores are being directly executed by CCU. CCU has 3 field Divisions with Sub-divisions at Delhi, Dehradun, Almora, Bangalore, Mysore, Coimbatore, Jodhpur and Jabalpur for execution of various works. Works in Eastern, North-Eastern and Western Zones have been entrusted to CPWD, Andaman PWD and Progress monitored by CCU. However, planning of all the works including those executed by CPWD/Andaman PWD is undertaken by CCU.

At present, there are 18 major works amounting to Rs. 27.92 crores already awarded and under execution by CCIJ. Besides 17 works have already been completed so far.

A sum of Rs. 6.62 crores has been provided during 1993-94 for the capital works of Ministry besides deposit works of Rs. 8 crores.

CCU in its efforts to avoid use of wood in the buildings being constructed by them has adopted the use of a number of alternates of timber in the buildings. Use of wood in doors, windows, cupboards has completely been dispensed with. For door and window frames, use of steel sections/pressed steel frames/Aluminium sections are being used depending on the importance of the buildings. Agro based MOF boards/ PVC paneled shutters replaces use of conventional wooden panel/flush door shutters.

In its efforts to popularise use of alternate source of energy, use of Photo Voltaic cells are being introduced at selected areas in place of conventional electric lights and solar water heating system is being introduced for hostel buildings for heating water.

In Tropical Arid Forest Research Institute, Jodhpur where water is scarce, recycling sewage water for horticultural purposes after treatment is being introduced.

In G.B Pant Institute of Himalayan Environment and Development, a biogas plant is being set up to generate electricity from the sewage.

It is also proposed to utilise the advantage of solar passive architecture in future for important buildings to be taken up by CCU.