

CHAPTER V

NARRATIVE EXPLANATION OF THE FINANCIAL REQUIREMENT 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 position in State Forest Departments should have adequate background in the field of Forestry. IGNTA 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 Rangers college. To develop managerial skills of specialisation relating to conservation, optimum utilisation and increasing production and conservation, productivity over space and time in forest based products as well as large afforestation and social forestry programme, there is the "Indian Institute of Forest Management". The Institute conducts a number of training programmes including a two-year post graduate diploma course in forest management.

2. 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 a number of State Agricultural Universities. The assistance is given through ICFRE. 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 benefitted under the scheme every year. During 1995-96, the various schemes under Forestry Education and Training will be continued.

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 of Forestry Research and Education (ICFRE)" was set up in December, 1986 by restructuring of forest Research Institute 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 programme 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 geographical regions for carrying out research on different aspects of forestry.

These institutes will pursue their ongoing activities during 1995-96.

For research and Development in respect of Plywood 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 making optimum utilisation of available raw material for the manufacture of Plywood and allied products. The institute serves as an information, training and testing Centre for wood based industries. In the year 1995-96, the Institute will continue its research, extension, demonstration and training activities.

WILDLIFE

Wildlife preservation including enforcement of Wildlife (Protection) Act and CITES is one of the main important functions of this Ministry. Under the provision of Wildlife (Protection) Amendment Act, 1991 passed by Parliament in October, 1992 in order to oversee the management of the zoos in the country, grants-in-aid will continue to be provided from this ministry to Central Zoo Authority in 1995-96 which will provide assistance to zoos for their development on scientific lines besides improvement in technical skill of Management.

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", assistance is provided to state governments- 100% for non-recurring items of development works for protection of wildlife in National Parks/Sanctuaries. For development of National Parks, 50% assistance on selected recurring items is also provided. During 1995-96, 250 Sanctuaries and 50 National Parks are expected to get assistance under the scheme.

Programmes for eco-development around various national parks and sanctuaries aim at augmentation of fuel, fodder and other usufruct supply in a sustainable manner and improving the quality of life for the rural people. 50 protected areas including Tiger Reserves will be assisted during 1995-96 under the scheme "Eco-development around National Parks and Sanctuaries including Tiger Reserves". Training programmes aim at development of Management Planning capabilities during 1995-96.

Project Elephant which was launched in 1991-92 shall continue during the year 1995-96 to provide assistance for 11 identified elephant states on 100% basis for improving existing elephant habitats and restoration of their migratory routes. Project Tiger which was launched in 1973, shall continue during 1995-96 to provide assistance for management and development of 23 Tiger Reserves in 14 States covering an area of 33,000 sq.kms.

For ensuring better management of the protected areas, Wildlife Institute of India conducts training courses to train managers and biologists. Wildlife Institute of India is an autonomous body and gets grant-in-aid from this Ministry. The Institute also provides advisory and consultancy services to the Central and State Governments. The activities of 1995-96 of the Institute include development of the new campus, updating computer facilities, conducting the regular and some new courses, initiation of new research programme etc.

ANIMAL WELFARE

Animal Welfare Board of India (AWBI) has taken up immunisation and sterilisation program of stray dogs on a large scale. It has recently been allotted land for construction of facilities. It therefore, becomes necessary to increase the outlay substantially. It has been provided both under plan and non-plan an outlay of Rs. 271.00 and Rs. 30.00 lakhs respectively. Assistance will be provided to various animal welfare organisation/societies for the prevention of cruelties to animals for the approved items. Efforts will be made to generate public awareness and provide education in animal welfare.

AWBI spends major share of the grant in aid on financial assistance to various organisation. About 160 Animal Welfare Organisations are likely to be assisted during the year. The assistance so provided is monitored and evaluated in some cases by the members of the board. The board also analyses the formal for making assistance and the reporting system. The board now intends to involve the state government machinery in preparation of the proposal and scrutiny so that the grant is used effectively.

The Ministry has also taken up with the State Governments to constitute State Advisory Board and to appoint nodal officer. Active involvement of the State Government machinery will not only improve the efforts of the board but also will help in reaching the programme to grass roots level.

The fund requirements for the Committee for the purpose of Controlling and Supervision of Experiments on Animals (CPCSEA) has been kept at the same level. Efforts will be made to use electronic media for public awareness and to develop alternative of animals use for experiment. Wide publicity will be given to rules and guidelines prepared for animal housing and experiment.

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 area 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/Government of India.
- 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 alongwith 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 PROTECTION AND REGENERATION

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 are 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 Department 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.

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 quantification of investment and technical assistance in line with the National Forest Policy 1988.

ECOLOGY AND ENVIRONMENT BOTANICAL SURVEY OF INDIA

The primary functions of BSI are to conduct survey and identification of genetic resources of the country, listing out all 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. The BSI proposes to undertake 42 floristic surveys in different parts of the country. Besides this, it proposes to bring out eleven publications of National Flora and Flora of States. Further, it proposes to computerise 100 type collections, finalization of publication of one manuscript of live plant collections. It will continue maintenance of herbaria, Botanical Gardens/Experimental Gardens at different regional circles, and 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

The 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 expanded gradually encompassing areas like environmental impact assessment, endangered species and fauna of various ecosystems. The objectives and functions of the Zoological Survey of India were reviewed in 1987 and redefined in 1991. A revised time frame and priorities in the programme of work were fixed. This department concentrates mainly on exploration and survey of faunal resources and research on taxonomy, biology, ecology, wildlife, animal population and animal behaviour. It provides data base and necessary inputs for environmental impact assessment and conservation programme. It also renders identification, advisory and library services to different users. It publishes Fauna of India, State and Ecosystem fauna and various other aspects of biological diversity of this country through departmental publications.

Zoological Survey of India also acts as a custodian of National Zoological Collections which comprise more than one million specimens belonging to some 75,000 species including about 10,000 species of other countries like Burma, Pakistan, Bangladesh, Thailand and Srilanka. These also include valuable type material of about 15,000 species. In addition to these, Zoological Survey of India maintains Zoological Galleries of Indian Museum, Calcutta and in Regional Museums at various Regional Stations. It imparts training in taxidermy, taxonomy, insect collection, preservation and identification, field ornithology, environmental awareness and wildlife. It has also set up Environmental Information system (ENVIS) on Animal Ecology. A marine aquarium-cum-research centre is also being developed at DIGHA (West Bengal).

During 1995-96 the Zoological Survey of India proposes to continue exploration and survey of faunal resources (a total of 117 surveys) in priority areas such as Himalayan Ecosystem, Tropical Rainforest Ecosystem, Coral reefs of Andaman and Nicobar Islands, Sunderbans, Godavari Estuary, Loktak, Kolleru, Sambhar and Pichola lakes, Doon Valley Wetlands and Harike Wetlands. In addition, survey of five states and status survey of an endangered aquatic mammal, viz, Dugong will also be undertaken.

Documents will be prepared and processed for publication as fauna of Western Himalayas, Rajaji National Park, Ujni Wetlands and State Fauna of Sikkim and Manipur.

Three regular publications viz., Records of ZSI, Annual Reports of ZSI and Bibliography of India Zoology and, State Fauna of Meghalaya (Part I to IV) will be brought out.

Fish Gallery of Indian Museum will be completed. New ecology gallery will also be completed with totally reconstructed habitat cases depicting principal ecosystems of India. Regional Museum at High Altitude Field Station, Solan, Southern Regional Station, Madras and Eastern Regional Station, Shillong will be further developed.

Computerisation of general collections deposited in the National Zoological Collections will be continued. Computerisation of the data of Animal Ecology and Publication of the Newsletter on Animal Ecology under Environmental Information System (ENVIS) will also be continued.

Training and Extension Programmes will be conducted on collection, preservation and identification of insects and mites of economic importance, Biodiversity conservation and Bio-systematics studies and Basic Course on environmental impact assessment. The marine aquarium at Digha will be put into operation.

ENVIRONMENTAL EDUCATION, AWAREENES AND TRAINING

a) ENVIRONMENTAL EDUCATION, AWARENESS AND TRAINING SCHEME:

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.

(b) GRANT-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.

(c) PARYAVARAN VAHINI:

In order to create environmental awareness and involvement of people through active participation, and reporting of illegal acts pertaining to forests, wildlife, pollution and environmental degradation, a new scheme namely Paryavaran Vahini has been launched during 1992-93. There is one Paryavaran Vahini for each district and each Vahini can have a strength of upto 100 members. About 183 such districts in the country have been selected 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 Collectors are responsible to take actions on the complaints by the Vahini members and pursue with the respective authorities. Pollution control test kits have been distributed to 20 districts after careful identification. A token -grant of Rs.200 per month is given to each member to partially reimburse the expenditure incurred by

him for attending the meetings and other activities. The funds for the distribution of grant to the members are provided by the Ministry periodically to the State Governments which, in turn, ensure its distribution through the District Collectors concerned. In view of coverage of additional districts under this scheme during 1995-96, the estimated expenditure would be Rs.118 lakhs on this scheme during 1995-96.

ENVIRONMENTAL INFORMATION SYSTEM (ENVIS):

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 atl user groups. A chain of 20 Centres, known as ENVIS Centres have so far been set up in various priority areas of environment, whose activities are co-ordinated by the Focal Point in the Ministry. The Focal Point in the Ministry also functions as the National Focal Point (NFP) and the Regional Service Centre (RSC) for the South Asia sub-region of the INFOTERRA Network - a global environmental information system of United Nations Environment Programme (UNEP). The NFP publishes a quarterly journal entitled "Paryavaran Abstracts" reporting research in the Indian context on environment and related areas.

The ENVIS has joined the ERNET programme of the Department of Electronics from this year, under which computer conectivity is being provided to all the ENVIS Centres so that the Centres could have on-line access with the focal point and with each other. This would not only enhance the scope of the ENVIS, but also result in speedier retrieval and dissemination of information to the users. Besides, some more new ENVIS centres on subject areas not covered so far are also proposed to be set up to make the network comprehensive.

SEMINARS/SYMPOSIA/WORKSHOPS

The Ministry provides financial assistance to various Institutions, Universities, Professional bodies, Registered Societies, NGOs etc. under this scheme for organising Seminars/Symposia/Conferences/Workshops on environment related issues, throughout the country so as to provide a common platform for sharing knowledge and experience among scientists, academicians, environmentalists, engineers and other professionals from various disciplines.

This scheme would also be continued during 1995-96 and it is proposed to assist various NGOs, professional groups and academic institutions to organise- suitable activities on relevant themes of the environment.

INDIRA GANDHI PARYAVARAN PURASKAR

Instituted in 1987, this award was given every year to any citizen of India or organisation for outstanding contribution in the field of environment. However, since 1991, this award is being presented both to an individual as well as an organisation in recognition of their significant

contributions in the field of environment. Each award carries a cash amount of Rs.1 lakh, a Silver Trophy and a Citation.

NATIONAL MUSEUM OF NATURAL HISTORY (NMNH)

The National Museum of Natural History, New Delhi (NMNH) is an institution devoted to environmental education. Opened to the public in 1978, this is the only museum of its kind in India. With over sixteen 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 organization 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 visitorship of approximately five lakhs, and reaches out to more than twenty 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 have been planned and are in the process of being set up at Bhopal and Bhubaneswar.

CENTRES OF EXCELLENCE

With a view to create good quality environmental educational resource materials and to spread environmental awareness as well as to strengthen research and training in the priority areas of the environmental science and management, the Ministry has set up following Centres of Excellence in the areas of Environmental Education, Ecology, Mining and Ornithology and Natural History:

- Centre for Environmental Education, Ahmedabad (Linked with Nehru Foundation for Development, Ahmedabad).
- CPR Environmental Education Centre, Madras (linked with CPR Hiyar Foundation, Madras).
- Ecological Research and Training Centre, Bangalore, (linked with Indian Institute of Science, Bangalore).
- The Centre of Mining Environment, (linked with Indian School of Mines, Dhanbad).
- Salim Ali Centre for Ornithology and Natural History, Coimbatore (linked with Bombay Natural History Society, Bombay).

The Centre for Environment Education (CEE), Ahmedabad, as as CPR Environmental Education, Centre, Madras, established in 1984 and 1988 respectively, are engaged in the

production of environmental target groups education resource material and to propagate awareness among the children as well as other Major activities of these Centres are as follows:

- Production of educational material including audio visual aids
- training in environmental education,
- organisation of seminars/symposia/workshops at regional and national level in the area of environmental education and holding of exhibitions to propagate and inculcate environmental awareness among the masses.

The Ecological Research and Training Centre at Bangalore was established in 1983 with a mandate to focus on the ecology and environment of Western Ghats. Various research projects on biological diversity, population biology and ecology, little known economic species of Western Ghats, ecology of Shola forests, geographical distribution of diversity of birds, plant reproduction strategy and study of forest dimension of Western Ghats Region etc. are being undertaken by this Centre.

The Centre for Mining Environment was established at the Indian School of Mines, Dhanbad, in 1987 with the following objectives:

- to impart training to inservice field personnel in environmental science and technology with reference to environmental management in mining areas
- to carry out research in the field of mining environment, initiation of regular academic programmes leading to M.Tech. Degree in Environmental Science and Engineering, and
- to undertake consultancy and testing work to help mining and mineral industries in the neighbouring areas in solving environmental pollution problems.

The five Centres of Excellence currently functioning in the fields of environmental education, ecological research, mining environment and ornithology would continue their present activities during 1995-96. These centres are continuously strengthened to enable them to evolve into truly advanced centres of training, research, education etc. It is also proposed to set up atleast one new centre of excellence on subject area not covered so far during 1994-95.

NATIONAL NATURAL RESOURCES MANAGEMENT SYSTEM (NNRMS)

The NNRMS Scheme was operationalised in 1987. The main objective of the scheme is utilisation of remote sensing -technology with conventional methods in monitoring of our natural -resources such as land, water, forests, minerals, oceans etc. for attaining sustainable development by addressing the following aspects:

- i) Optimal utilisation of the country's natural resources by a proper and systematic inventory of the resource availability.
- ii) Maintain the ecological balance with a view to evolve and implement the environmental guidelines.

To achieve the above objectives, a Standing Committee on Bio-resources and Environment has been constituted. The Committee has identified the key issues which can be grouped as under:

- i) General information and needs in the field of bio-resources and environment. This covers mainly forests, grasslands, plant and faunal resources, wetlands, land degradation, water pollution, air pollution etc.
- ii) Information requirements for the 14 project areas of the Man and Bio-sphere Programme.
- iii) Some typical programme areas like impact of mining, coastal wetlands, pollution aspects, wetland development wildlife habitat, forestry etc.

Initially, the Committee has identified 37 priority areas for research projects involving remote sensing technology. Out of these, 17 areas have been covered so it is expected that the remaining areas would be covered in manner during the next two years.

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, undertake 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.
- Identification of wetlands of national importance International collaboration •
- Monitoring and evaluation

The following wetlands have been identified in the country for intensive conservation and management purposes:

Name of the Wetland	State/UT
Kolleru	Andhra Pradesh
Wullar	Jammu & Kashmir
Tso Morari	Jammu & Kashmir
Chilka	Orissa
Loktak	Manipur
Bhoj	Madhya Pradesh
Sambhar	Rajasthan
Pichola	-do-
Ashtamudi	Kerala
Sasthamkotta	-do-
Harike	Punjab
Kanjli	-do—
Ropar	do-
Ujni	Maharashtra
Sukhana	Chandigarh

Renuka	Himachal Pradesh
Chandratal Lake	-do—
Pongdam Lake	do-
Kabar	Bihar
Nalsarovar	Gujarat
East Calcutta Wetlands	West Bengal

The Central Government provides full financial assistance for implementation of management action plan prepared by the concerned State Government. These management action plans are formulated by the State Governments based on the problems confronting these wetlands. The main activities under management action plans include the data collection, survey, identification of problems wetland mapping, landscape planning, hydrology, control of encroachments, eutrophication abatement, aquatic weed control, wildlife conservation, fisheries development and environmental awareness.

A National Committee on Wetlands, Mangroves and Coral Reefs has been constituted to oversee the implementation of the wetland programme.

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 eco-systems. 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 mangroves research and conservation.
- The main activities under this programme are as follows:
 - Formulation and implementation of management action plan for priority mangrove areas.
 - Promotion of research activities relating to environmental issues and management of mangroves on sound ecological basis.
 - Assessment of mangrove resources in India and their loss in time series.
 - Monitoring and evaluation.

The following mangrove areas have been identified in the country for intensive conservation and management purposes:

Coringa	Andhra Pradesh
Godavari Delta Coondapur	- do
Krishna Estuary	— do -
Bhitarkanika	Orissa
Mahanadi Delta	-do-
Vembanad	Kerala

Achra/Ratnagiri	Maharashtra
Gulf of Kutch	Gujarat
Sunderbans	West Bengal
Pichavaram	Tamil Nadu
Goa	Goa
Coondapur	Karnataka
Northern Andaman	Goa Andaman & Nicobar Islands
Nicobar	Do
Point Calimere	Tamil Nadu

The Central Government provides full financial assistance for implementation of management action plan prepared by the concerned State Government. These management action plans are formulated by the State Governments based on the problems confronting these mangrove areas.

A National Committee on Wetlands, Mangroves and Coral Reefs has been constituted to oversee the implementation of the Mangroves and Coral Reefs programmes.

BIOSPHERES RESERVES

The Biosphere Reserve Programme is intended to conserve 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. The objectives of the programme are:

1. To conserve the biodiversity and genetic integrity of plants, animals and micro-organisms in their totality as part of the natural ecosystems, so as to ensure their self-perpetuation and unhindered evolution of the living resources.
2. To promote research that would assist ecological conservation both within and areas adjacent to these reserves;
3. To provide facilities for international cooperation and people environment interaction in a whole range of bioclimatic and biogeographical situation of the Biosphere; and
4. To provide opportunities for people's participation in achieving these objectives. Till 1993-94, the following Biosphere Reserves have been set up:
 - Nilgiri in the States of Karnataka, Kerala and Tamil Nadu;
 - Nanda Devi in Uttar Pradesh;
 - Great Nicobar in Andaman & Nicobar Islands;
 - Gulf of Mannar in Tamil Nadu;
 - Sunderbans in West Bengal;
 - Nokrek in Meghalaya, and
 - Manas in Assam.

As per the recommendations of the Core Advisory Group set up by the Government of India in 1979, 14 potential sites were identified for setting up of Biosphere Reserves in the country.

The Central Government provides full financial assistance for the items of the Management Action Plans prepared by the concerned State Governments. Various items of the Management Action Plans are:

1. Eco-restoration and eco-development
2. Development of data base
3. Protection
4. Education, training and awareness, and
5. Management Activities, etc.

A National Committee has been constituted to oversee the implementation and monitoring of the Biosphere Reserve Programme. A Scientific Advisory Committee has also been constituted to oversee the research activities under the Biosphere Reserves.

Financial assistance is given to the State Governments for implementing Management Action Plans and research activities. For Management Action Plan, money is directly sanctioned to the State Governments, while for Research Component, projects are submitted through State Level Research Committees which are ultimately decided by the Scientific Advisory Committee on Biosphere Reserves in the Ministry.

BIODIVERSITY CONSERVATION

The 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.

ASSISTANCE TO BOTANIC GARDENS

The scheme was initiated during 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. Under this scheme, a one-time non-recurring financial assistance is provided to botanic gardens in different phytogeographic regions for strengthening their existing facilities so as to undertake - conservation and propagation of threatened and endangered endemic plant species of that region; and educating and creating public awareness about the need to do so.

An Expert Group is constituted for screening and examining the proposals received from various research institutes/ universities/ State Governments/Union Territories for strengthening the facilities of their existing botanic gardens. The Botanical Survey of India (BSI) has also identified a list of some of the most vulnerable or endangered plants in different phytogeographic regions of the country that need to be conserved and propagated on a priority basis.

RESEARCH AND DEVELOPMENT

Environmental Research broadly aims at attempting 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 management together with the creation of facilities and development of technical capabilities.

To achieve the objectives grants-in-aid research projects in the identified thrust areas are supported in various institution/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 and Development and Extension Programme for Eastern and Western Ghats are included.

G. B. PANT INSTITUTE OF HIMALAYAN ENVIRONMENT AND DEVELOPMENT

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

PREVENTION AND CONTROL OF POLLUTION

CENTRAL POLLUTION CONTROL BOARD

Prevention and Control of Pollution in the country is being regulated under the Water (Prevention and Control of Pollution Act, 1974) Air (Prevention and Control of Pollution Act, 1981) and Environment (Protection, Act, 1986). For the purpose of implementation of these acts, Central Pollution Control Board (Central Board or CPCB) is constituted under the Water (P&CP) Act, 1974. The main object of the Water (P&CP) Act, 1974 and Air (P&CP) Act, 1981 is to maintain or restore wholesomeness of water and to prevent, control and abate air pollution for preservation of the quality of air. Government has also laid down a policy statement for Abatement of Pollution and Central Board would be implementing the relevant aspects of the policy during the course of time. During 1994-95, Central Pollution Control Board targeted its activities covering: survey of Industrial estate especially to cover Small Scale Industries, ensuring pollution control in highly polluting 17 categories of Industries, restoring environmental quality in critically polluted "Problem Areas", preparation of action plan for identified polluted river stretches, ambient air & water quality monitoring, review of monitoring locations to relocate the stations, ensuring linkage with State Pollution Control Boards through NICNET of NIC, and development and application of cleaner technologies as per the programme prepared by Ministry of Environment & Forests especially for small scale industries. The other activities which were continued includes: Inventory of Water bodies such as lakes; polluted river stretches & coastal stretches ground water quality monitoring in problem areas establishing laboratories at Zonal Offices and undertaking investigating schemes on regional basis in consultation with State Pollution Control Boards, application of biomonitoring in other rivers, toxicity evaluation and their application in standard development, follow-up and Notification of criteria for eco-labelling etc. The annual Plan of Central Pollution Control Board for 1995-96 has been prepared based on policy statement laid down by the Government for Abatement of pollution and

decisions taken at National level in various meetings held in Ministry of Environment & Forests and Chairmen & Member Secretaries conferences of State Pollution' Control Boards.

ENVIRONMENTAL AUDIT

A scheme for Environmental Audit has been started from 1992-93 and will continue during VIII Plan period. It is an assessment of an industry of its processes, technology etc. to ensure observance of pollution standards, waste minimisation etc. A notification has already been published under which all the industries which are required to take consent or authorisation or both are required to submit an environmental statement in the prescribed form to the respective State Pollution Control Board beginning from 1993.

Training programme is being provided to staff of the Central and State Pollution Control Boards and Industries in conducting the environmental audit. A software package for analysis of information submitted in environmental statements has been prepared by IIT, Bombay under the project sponsored by this ministry and is being disseminated to all the State Pollution Control Boards. This would help in publishing statistics on consumption of natural resources and could be used for setting standards under Air, Water Acts.

It is proposed to set up a data base on environmental statement required to be submitted by the polluting units to the concerned State Pollution Control Boards during 1994-95. This would help determining trends in pollution particularly from the highly polluting industries; and also help identify those which are persistent defaulters. The output from these data basis would be brought out as Status reports for dissemination to various users at various levels of implementations.

ENVIRONMENTAL STATISTICS AND MAPPING

The Ministry of Environment and Forests has introduced Environmental Statistics in the Policy Statement for Abatement of Pollution. The mapping of the data would be an outcome of the Environmental Statistics. It is expected to depict the trend of pollution in the country.

The scheme has started from 1st April, 1992. Under the Scheme; the project "Environmental Statistics and Mapping~ using GIS and Remote Sensing with a specific reference to Abatement of Pollution at a total cost of Rs. 34.613 lakhs has been proposed to NISTAD during the year 1992-93 for a period of five years. The main objectives of the project are to determine the status of pollution and to develop concise set of environmental indicators for monitoring the effect of pollution and to provide information to the public. The work under the project would also produce a computerised map of the critically polluted areas through digitisation on which thematic information on pollution status would be depicted. This scheme is being implemented by NISTAD.

ADOPTION OF CLEAN TECHNOLOGIES BY SMALL SCALE INDUSTRIES

A scheme on Adoption of Clean Technologies by Small Scale Industries has been started during 1992-93 and will continue for the whole of the VIII plan period. The scheme has 3 components:

1. 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 provided at low interest to small scale industries.
2. Research and Development programme will be carried out for innovation, identification and diffusion of information on clean technology and for creation of data base.
3. An awareness programme and personnel training of the small scale industries will be carried out through the Development Commissioner, Small Scale Industries with the support of various research organisations nodal sectoral institutions by conducting seminars/symposia, preparation of slide films, etc.

A scheme has been sponsored to Development Commissioner, Small Scale Industries, Ministry of Industry to organise training and awareness programme for SIDO officers through their Small Industry Service Institute which in turn would impart training to the entrepreneurs of the identified SSI sectors.

A manual "From waste to profits - guideline for waste minimisation" in small scale industries has been prepared. Sector specific manuals viz., pulp and paper, pesticide formulations and textiles-dyeing and printing are being brought up

In order to promote a group working amongst industries of same type in a cluster, it is proposed to establish waste minimisation circles. These circles would be an assembly of representatives of such industries who would work collectively to promote waste minimisation in their respective Units. To begin with 10 such circles are planned during the year.

ASSISTANCE FOR ABATEMENT OF POLLUTION AND ENVIRONMENT 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 times, various acts like Environment Protection Act, 1986, Water (Prevention & Control of Pollution) 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 Labelling 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 Pollution Control Boards and State/UT Departments for strengthening their set up, Awareness Campaign for Public Liability Insurance Act., etc. are being carried out. Steps have been taken for implementation of Public Liability Insurance Act.

WORLD BANK AIDED INDUSTRIAL POLLUTION CONTROL PROJECT

The industrial pollution control project include 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 \$ 26.04 million is to be made available as credit to Government of India through Plan Finance Mechanisms. These are to be channelised to the different components as given below:

(Amount in million)

(a) Institutional Development of SPCB	12.6
(ii) CETPs	12.00
(iii) Technical assistance	1.44

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 of 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 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 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. 3 crores shall be earmarked for implementing projects pertaining to CETPs.

All the above activities needs to be taken up with immediate effect as the World Bank II Project is proposed to be initiated during 1995.

HAZARDOUS SUBSTANCES MANAGEMENT

The total outlay of the scheme for the VIII Plan is Rs.782.15 lakhs. The main objectives of this scheme are as follows:

- Effective management of chemical accidents.
- Proper handling and disposal of wastes
- Creation and assistance of Hazardous Substance Management Structure in the States.

The major activities being undertaken under this scheme are as follows:

- Setting up of Emergency Response Centres
- Setting up of Poison Control Centres.
- District-wise hazard analysis/off-site emergency Plan.
- Setting up of National Register of Potentially Toxic Chemicals (NRPTC)/Regional Registers of Potentially Toxic Chemicals (RRPTC)

- Training of Personnel
- Identification of Hazardous Wastes Treatment and Disposal sites including landfill sites.
- Developmental studies for Hazardous Waste Management Proper disposal and utilisation of Munispal and Industrial wastes.
- Creation and maintenace of Hazardous Substances Management Structure in the Statee.

IMPACT ASSESSMENT

Environment Impact Assessment (EIA) is an exercise to evaluate the beneficial and adverse effects of developmental project/activities on the environment including socio-economic, cultural and aesthetic concerns.

The Environment Impact Assessment is statutory for 29 different activities in Industries, Mining, Irrigation, power, Transport, Tourism etc. Besides this, the following types of projects are also appraised:

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

Environmental clearance to development projects is subject to implementation of stipulated safeguards. The projects are monitored through six regional offices of the Ministry located in different regions so as to cover the entire country.

CARRYING CAPACITY STUDIES

Carrying Capacity studies are undertaken by the Ministry in sensitive areas to arrive at a resource based plan of the area in order to sustain developmental ctivities. The study takes into account the supportiive capacity of the area which is resource based and examines different alternatives available for development in harmony with enivrons. Presently, four such studies are in progress. Since the studies are inter-disciplinary in nature and cover large area, a number of institutes and experts are associated with the studies.

CIVIL CONSTRUCSION UNIT (CCU)

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 apd Training (ICFRE), G.B. Pant Institute of Hima}ayan Environmeht and Development, Indira Gandhi National Forests Academy, Forest Survey of India, and National Zoological Park.

The CCU has taken up a number of new projects/schemes involving construction 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.

CCU has 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.

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/Aluminum sections are being used depending on the importance of the buildings. Agro based MDF boards/PVC panelled shutters/panelled shutters using Eucalyptus timber for rails and styles 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.