

CHAPTER II(B)
REVIEW OF OVERALL PERFORMANCE 1993-94

FORESTRY AND WILDLIFE
FORESTRY AND EDUCATION AND TRAINING

1. INDIRA GANDHI NATIONAL FORESTRY ACADEMY DEHRADUN (IGNFA)

IGNFA was established on 23rd May, by upgrading the Indian Forest College, Dehradun and delinking it from the Forest Research Institute. The Academy is responsible for initial inhouse training is spread over a period of two years.

At present 55 IFS probationers of 1992-94 batch are undergoing the training course. The training is like to be completed in December, 94.

II. STATE FOREST SERVICE AND RANGERS COLLEGES

There are three State Forest Service Colleges located at Dehradun, (U.P.), Burnihat, (Assam) and Coimbatore, (Tamil Nadu). These colleges run two were course for State Forest Service Officers. Besides this, there is a Rangers College at Kurseong. The college imparts training to Range officers of State Forest Department.

At present, two batches of 1992—94 and 1993—95 are undergoing training in State Forest Service colleges. No of trainees in these batches are 37 and 40 respectively. During the year, 43 trainee's of 1991—93 batch passed out the training course.

At present in Rangers College, 43 trainees of 1993-94 batch and 15 trainees of 1993—95 batch are undergoing two years training course. The training of 1991-93 batch in which 93 Rangers were trained has been completed in July, 1993.

III. INDIAN INSTITUTE OF FOREST MANAGEMENT (IIFM), BHOPAL

IIFM, Bhopal was established in the year 1982 as an autonomous organisation of this Ministry. The Institute provides training in management and allied subject to Graduates who have aptitude in the forestry subjects, officers of Indian Forest Service, Forest Development Corporation and Forest related institutes. The Institute is also providing support to National Afforestation and Eco-development Board in project appraisal, monitoring, evaluation, special studies etc. in the field of afforestation and eco-development.

The achievement during the year are as under:

- Training of 93 students of 1992—93 batch of Post graduate programme in Forest Management continued.
 - students were admitted in 1993—95 batch of post graduate programmes in Forest Management.
 - 18 Management Development Programmes have been proposed.
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- Work on 5 ongoing research projects were continued and 6 new projects were proposed on various ecological and socio-economic issues.
- The work of Library development is in progress.
- Special provision has been made for computer centre and the Institute is going ahead with a phased procurement plan for a group of network Micros (PCs) and PC / XT along with a small micro computer laboratory.

FORESTRY AND RESEARCH

I. INDIAN COUNCIL OF FORESTRY RESEARCH AND EDUCATION

The ICFRE as established in December, 1986 by restructuring of Forest Research Institutes and colleges to oversee the activities relating to Forestry Research and Education in the country and coordinate the efforts of all the concerned institutes and organisations. With effect from 1st June, 1991, the ICFRE had been given autonomous status.

The ICFRE has following research institute and three centres:

1. Forest Research Institute, Dehradun.
2. Institute of Forest Genetics and Tree breeding Coimbatore.
3. Institute of Wood Science and Technology Bangalore.
4. Tropical Forest Research Institute, Jabalpur.
5. Arid Zone Forest Research Institute, Jodhpur.
6. Institute of Rain and Moist Deciduous Forests Research, Jorhat.
7. Temperate Forest Research Centre, Shimla.
8. Centre of Forest Productivity, Ranchi.
9. Centre for Social Forestry and Eco-Rehabilitation, Allahabad.

Annual action plan of the Council for the financial year 1993-94 includes:

1. Creation of specialised Seed organisation, identification of seed production areas, seed procurement, testing, storage and supply.
 2. Tree improvement of multi purpose species and economically important species.
 3. Gene-resource conservation of endangered genetic resources or ecotypes.
 4. Regeneration, improved collection, processing and marketing of important forest produce (Non-timber forest produce).
 5. Integrated development of fragile ecosystems such as arid and semi arid areas, mountains, mangroves etc.
 6. Developing agroforestry models for different agro- climatic zones
 7. Conservation of natural forest, rehabilitation of degraded forests, participatory forest management and socio-economic studies.
 8. Improved utilisation of forest products.
 9. Publication of species leaflets, technical notes, forestry records and monographs.
 10. Imparting forestry and Environmental Education.
 11. Demonstration of technology from Lab to Land.
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During 1993-94, the achievements of six Research Institutes and three Centres are as under:

(i) FOREST RESEARCH INSTITUTE, DERHRADUN

1. Studies on timber properties, wood preservation and seasoning were continued.
2. Development of laboratory process to manufacture synthetic ligne sulphonate from soda pulpings spent liquor lignin.
3. Investigation conducted on sawing and seasoning of populus deltoides revealed that combination of saw dry tip (S.D.R.) process and high temp drying period produced best results.
4. Kiln drying scheduled for Populus deltoides, Prosopis juliflora and Acacia loiteris were developed.
5. Clonal propagation of Dalbergia sissoo, Tectona grandis Eucalyptus hybrid and bamboos was initiated.
6. Extraction of biopesticides from some forest plants was initiated.
7. Studies of geographic variation in seed and seedings in Acacia nilotica, Acacia Indica Pinus roxburghii and Pinus wallichiana were continued.
8. Reclamation and ecological monitoring of abandoned lime stone mine areas continued.
9. Japanese mushroom shitake was success-fully cultivated on Ban Oak logs.
10. Forest Insect pest surveys in Nursery and Plantation of Social Forestry tree specie-carried out.

(ii) INSTITUTE OF FOREST GENETICS AND TREE BREEDING, COIMBATORE

- I. Extensive survey of seven districts of Tamil Nadu for selection of plus trees of Azadirachta indica, Casurina equistitolia, tectona grandis initiated.
- II. Provenance trial of Acacia nilotica, Albizzia lebbeck, casurina equisitifolia Eucalytus camaldulansis initiated.
- III. Macro propagation rooting protocol for Acacia nilotica Albizzia lebbeck and Gliricidia sepium without the use of mist chamber successfully standardised.
- IV. Isozyme polymorphism studies in different provenances of casurina, Acacia, Albizzia, Azadirachta initiated.

(iii) INSTITUTE OF WOOD SCIENCE AND TECHNOLOGY, BANGALORE

1. Anatomy of 14 Andaman Timbers studied.
2. Indigenous timber for air craft propellers studied.
3. Study of resistance of Hevea brasiliensis is against beetles and termite on pressure insecticides.
4. Investigations on the biology of wood destroying organism under marine conditions.
5. 47 timber spp. tested for their durability Marine conditions.
6. Study of control of Bio-deterioration wood preservatives, plant derivaties in marine conditions.

(iv) TROPICAL FOREST RESEARCH INSTITUTE, JABALPUR

1. Standardisation of cultivation of Bixa-orellena extraction of chemicals.
2. Study of spacing on the growth and berry production of *Bursera penicillata*
3. Germ-plasm collection of 550 medicinal and exotic plants for ex-situ conservation of rare and endangered plants.
4. Studies on nursery technology of *Diospyros melanoxylon*.
5. Studies of oil content of *Jatropha* from different localities.
6. Studies of silvipastoral models for rainfed areas.
7. Study of growth and development of some tree species on inoculation of seeding with VAM fungi and Rhizobium.

(v) ARID ZONE FOREST RESEARCH INSTITUTE, JODHPUR

1. Study of growth of *Ailanthus exceisa* by application of phosphatic fertilizers.
2. Study of moisture management in stress sites by rain water harvesting and mulching.
3. Evaluation of suitability of some exotics in Rajasthan conditions.
4. Collection and evaluation of provenances of neem.
5. Eco-stabilisation studies of deserts with special emphasis on sand-dunes fixation.

(vi) INSTITUTE OF RAIN AND MOIST DECIDUOUS FORESTS, JORHAT

1. Establishment of Bamboo germ-plasm nursery.
2. Initiation of ethnobotanical studies in North East Region.
3. Studies on suitable fast growing tree species for rehabilitation of Jhum areas.
4. Studies on micorrhizal associations with the rain forest tree species.

(vii) TEMPERATE FOREST RESEARCH CENTRE, SHIMLA

1. Seed germination and Biomass studies in *Rosa-webiana capparidis sphenosa* and *Ephedra gerardiana*.
2. Provenance trials of *Populus ciliata* and *Populus deltoides* continued.
3. Nursery technology development of wood *fordia fruticosa*.
4. Demonstration of planting technology of *Populus deltoidea* on farmer lands.

(viii) CENTRE OF FOREST PRODUCTIVITY, RANCHI

1. Demonstration of improved method of lac cultivation to the 30,000 lac cultivators the region and distribution of improved brood lac to the cultivators.
2. Demonstration of silvi-agriculture practice in lac cultivation,
3. Demonstration of Farm bund plantation of trees to check damage due to hail storm.

(ix) CENTRE FOR SOCIAL FORESTRY AND ECO-REHABILITATION, ALLAHABAD

1. Biological rejuvenation of saline and sodic soils.
 2. Demonstration of agro-forestry models in gangetic plains.
 3. Rehabilitation of stone mined area near Shankargarh.
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II. INDIAN PLYWOOD INDUSTRIES RESEARCH AND TRAINING INSTITUTE (IPIRTI). BANGALORE

The Institute was established in 1963 jointly by the Plywood Industry and the Government of India. It was under the administrative control of CSIR till March, 1978 and subsequently under the Ministry of Industry till April, 90. Thereafter with effects from, 1-5-90 it has come under the administrative control of Ministry of Environment and Forests.

The achievements during the year are as under:

1. Research work on 35 ongoing projects continued and 4 new projects were added. 20 projects are expected to be completed during the year.
2. 11 vocational training programmes have been planned 6 have been conducted by Nov. 93 and 43 candidates were trained in these courses.
3. 30 candidates were admitted in one year certificate course in Mechanical Wood Industries Technology. The course started on 20th October, 1993.
4. Upto Sept., 93 tests for conformity to relevant Indian standards were carried out on 175 samples.
5. Upto Sept., 93, 8 improvement, demonstration were arranged in factories.
6. One day brain storming session on bamboo mat board was held on 6-8-93 in which 17 delegates participated.

SURVEY AND UTILISATION OF FOREST RESOURCES FOREST SURVEY OF INDIA

Forest Survey of India (FSI) carries out comprehensive forest resources survey at regular intervals and prints information in a suitable form for planning at national state and local levels including, evaluation through reinventoly to facilitate scientific forestry planning. The efforts are underway to acquire digital Cartography system.

Sl. No	Items of works	Unit	Target for 93-94	Achievement upto Nov 93
1	Forest inventory	forest area in sq km	26,422	8050
2	Data processing	Do	20,000	*
3	Thematic mapping	Sheets of 1:50,000 scale	260	103
4	Vegetation mapping	Sheets of 1:250,000 scale	182	82
5	Training	No. of persons trained	90	50
6	Special studies	No. of areas	1	-

* The quantitative achievements expected by March, 1994.

FOREST CONSERVATION

The Forest Conservation Act, 1980 was enacted with a view to check indiscriminate deforestation and diversion of forest land for non-forest purposes. The Act was amended in 1988 to make it more stringent. The Advisory committee with representation of eminent personalities was set up under this Act. At field level there are six regional offices situated at Bangalore, Lucknow, Shillong, Bhopal, Bhubaneshwar and Chandigarh with Headquarters at New Delhi. These offices were set up to monitor cases under Forest (Cons.) Act. Later in 1988 these offices were strengthened and also entrusted with the responsibility of monitoring cases under Environment (Protection) Act. Under the revised guidelines the Regional Offices have been empowered to decide cases for diversion of forest land for non-forest purposes up to the extent Of 5 ha. except mining and regularisation of encroachments and examine cases between 5—20 ha. under consultation with State Advisory Board. Region-wise target/achievements of monitoring of cases under Forest Conservation Act and Environment Protection Act are as under;

Name of the Regional Office	Forest (Cons.) Act (No. of Cases)		Environmental (Protection) (No. of Cases)	
	Target	Achievement Upto Sept.93	Target	Achievement Upto Sept.93
Bangalore	175	76	80	87
Bhopal	175	32	80	14
Bhubaneshwar	175	101	80	75
Locknow	175	58	80	43
Shillong	120	45	45	20
Chandigarh	80	44	35	19
Total	900	356	400	258

FOREST PROTECTION AND REGENERATION

In April, 1984, Modern forest Fire Control Project was launched with UNDP assistance. With experience gained from the said project, a central sponsored scheme “Introduction of Modern Fortes Fire Control Methods in India” was introduced during VIII plan. The scheme is centrally sponsored and envisages 100 per cent assistance to State Governments for non-recurring items like procurement of hand tools, creation of new fire lines, erecting watch towers and procurement of wireless sets for effective communication, research and development, and publicity. The implementation of the scheme and proper utilisation of funds is watched through the mechanism of utilisation certificates and personal discussion. During the year 1993-94 an assistance of Rs. 1.25 lakhs is likely to be provided to State Government

Under the scheme—Association of Scheduled Tribes and Rural poor in regeneration of degraded forests on usufructs sharing basis, an amount of Rs. 2.45 crores has been provided. The afforestation projects sanctioned during 92-93 under this scheme in M.P. Bihar, Rajasthan and Andhra Pradesh are being continued. Fresh projects from Orissa and Maharashtra have been

sanctioned. A sum of Rs. 55.75 lakhs have been released to the State Governments during 93-94 (upto Jan 94).

FOREST POLICY

Indian forest Act 1927 is the main Act which regulates the management of forests by the States. some States, the Act is applicable as it is, while some of the States have enacted their own Acts which some of are the adopted version of the Indian forest Act, 1927. Since its adoption forestry has undergone many conceptual changes leading to the new National Forest Policy in 1988. Consequently, the need has into account the new Act taking into account the new National Forestry Policy and brought from the state list to the Concurrent list of Indian constitution. The draft of the revised Act has been prepared and circulated to the State Governments. After receiving comments it would be presented to the Parliament for enactment. The draft Act has been examined from the Constitutional angle and in the light of the recommendations of the Sarkaria Commission dealing with relationship of Central and State Governments.

JOIN MANAGEMENT OF FOREST RESOURCE

The National Forest Policy 1988 envisages involvement of people in managing the forests to attain the desired goal of forest conservation, extension of tree cover and meet the fuelwood requirement of the people. Accordingly, the Government of India issued guidelines to the State Governments to formulate specific schemes on involvement of village communities, voluntary organisations in protection and regeneration of degraded forests on the basis of sharing of forest produce. As a follow-up of these guidelines, some states have either finalise their schemes or they are at a finalising stage. These States are Andhra Pradesh, Bihar, Rajasthan, Gujarat, Madhya Pradesh, Orissa, West Bengal, Himachal Pradesh, Haryana, J&K, Karnataka, Maharashtra and Tripura. Other States are being persued to finalise their schemes.

NATIONAL FORESTRY ACTION PROGRAMME

With the announcement of the new Forest Policy 1988, it became necessary to orient all ongoing forestry programmes to meet the objectives set by it. Consequently, an integrated perspective programme for the long, mid and short terms for development of fore try sector at National and State level, together with the short term priority action programme for the next five years is being prepared taking all aspects of forestry and people. This is being done under the project NATIONAL FORESTRY ACTION PROGRAMME a part of global tropical forestry action programme with the assistance of UNDP & FAO. The project document has been signed and the project has become operational w.e.f. 1st July 1993.

NATIONAL AFFORESTATION AND ECODEVELOPMENT BOARD (NAEB)

Schemes	Physical target for 93-94	Physical achievement during 93-94 (upto 31 st jan 1994)
1. Integrated Afforestation and Eco-Development	64,000 ha.	49377 ha

Projects Scheme		
2 Fuelwood/Fodder Projects Scheme	60,000 ha.	50,000 ha
3. Raising of Minor Forests Produce including Medicinal Plants Scheme	20,000 ha.	19942 ha
4 Seed Development Scheme	22 States to be assisted	23 States assisted
5 Aerial Seeding Scheme	30,000 ha	10,000 ha
6. Grants-in-Aid Scheme (for Voluntary Agencies)	35 Projects	17 projects

The targets under 20-Point Programme for the year 1993-94 and the achievements upto 31st January are as given below: —

	Seedling Distribution (in lakhs)	Area (in ha.)
Target	13509	1165300
Achievement	9547.63	824372.4

WILDLIFE

The scheme Strengthening of Wildlife Division and the Consultancies for Special Tasks started from 1986 with activities like strengthening of Central Wildlife Division and Regional Offices in Delhi, Bombay, Calcutta and Madras with adequate manpower and development of infrastructure for better enforcement of Wildlife (Protection) Act, CITES etc. Three sub regional offices at Guwahati, Pathankot and Cochi were subsequently started. The activities undertaken during the year are as under.

1. India participated in the scientific counselor meeting of Convention on Migratory Species (CMS held at Bonn in May, 1993 A Memorandum of Understanding amongst the States of Siberian cranes for their protection is under consideration.
2. India also participated in Rhino Range State meeting at Nairobi in June—July, 93.
3. Shri A.S. Brar, Director, Keoladeo Ghana National Park, Bharatpur participated in the experiment On release of the reared Siberian cranes with wild flocks in Siberia during August-September, 1993 on the sponsorship of Government of India.

PROJECT TIGER

The centrally sponsored scheme Project Tiger was launched on 1st April, 1973 to ensure maintenance of viable population of Tigers in India. Presently there are 71 identified tiger reserves in 13 States. The following major activities were undertaken during the year 93-94.

1. All India Tiger/Leopard Census 1993 in all the states.
2. Commemorating 20 years of projects tiger in all the tiger reserves of 13 states.
3. Follow-up action on Delhi Declaration of tiger conservation.
 - (a) Preparation of Tiger Action Plan.
 - (b) Formation of Global Tiger Forum.
4. Initiation of participatory approach for taking up eco-development programme in all project tiger areas.
5. Study tour of the officers of the project tiger to various national parks/game reserves of Kenya and Tanzania.
6. Tadoba National Park (Maharashtra) and Bandhavgarh National Park (M.P.) have been declared as Tiger reserves during the year.

ASSISTANCE FOR DEVELOPMENT OF NATIONAL PARKS AND SANCTUARIES

Under this scheme financial assistance is provided to States for development of National Parks and Sanctuaries During the year financial assistance was provided to 32 National Parks and 171 Sanctuaries upto November, 1993.

PROJECT ELEPHANT

Under this scheme all amount of Rs 82.83 lakhs (upto November, 1993) have been released to 11 States for developmental activities in the identified elephant reserves.

ECODEVELOPMENT IN AND AROUND PROTECTED AREAS

Under this scheme an amount of Rs. 75.05 lakhs (upto Nov, 93) have been released for eco-development in 45 protected areas.

NATIONAL ZOOLOGICAL PARK

On the recommendations of the Indian Board of Wildlife, Government of India had set up a National Zoological Park in the capital on a plot of land measuring 214 acres. On an average 16-17 lakhs, people are visiting the said park every year. The achievements during the year 93-94 are as under;

S.No	Targets	Achievements
1	Providing water connection to the stall outside main gate	Completed
2	Constructing cells and bridge for Lion tailed Macaque	Completed
3	Providing drainage system to animal hospital.	Completed
4	Constructing enclosure for Lion tailed Macaque	Completed
5	Providing stone wall fencing at Cave Completed Buffalo House	Completed
6	Providing animals Cells at Veterinary Completed hospital	Completed
7	Providing and fixing steel doors in birds aivary beat No. 10	Completed
8	Modification of Cells of Hyaena closures	Completed
9	Changing partition of Lion House Beat Completed No.15	Completed

10	Air-conditioning of Zoo Hospital	Completed
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WILDLIFE INSTITUTE OF INDIA

Wildlife Institute of India is a national institute for wildlife and has turned out a large number of competent wildlife managers and research scientists.

Besides the regular courses, the Institute conducted workshops on zoo management and interpretation for middle level officials during December 1993. The UNDP/FAO sponsored training programme for eco-development planning and protected area management has been initiated during 1993. The achievements of Institute during 93-94 are as under:

S.No	Courses	No. of person trained
1	M.Sc. Course in Biology	7
2	Post Graduate Diploma in Wildlife Management	15
3	Certificate Course in Wildlife Management	12
4	Field workshops/Short Courses	12

During the year 16 research projects covering the high Himalayan Tarai, Moist peninsular forests, Rann of Kutch, swamps, grasslands, man wildlife relationship etc. were continued. The Institute has complete 27 research projects. There are five new proposal under Indo-US collaboration which are to be taken up during the year.

CENTRAL ZOO AUTHORITY

178 applications received for recognition of zoos are being examined by a committee comprising of experts in various fields of wildlife.

5 zoos viz. (i) National Zoological Park, New Delhi, (ii) MC Zoological Park, Chandigarh (iii) Prince of Wales Gardens, Lucknow, (iv) Kaslim Zoological Park, Kanpur, (v) TISCO Zoo, Jamshedpur have been granted recognition.

About Rs. 1.25 crores is likely to be released to zoos by way of assistance.

ANIMAL WELFARE BOARD

The Animal Welfare Board was established under Section 4 of the Prevention of Cruelty to Animals Act, 1960 The work of the Board came on transfer to this Ministry from the Department of Agriculture and Cooperation in March, 1990. For promoting the animal welfare activities and to prevent infliction of cruelties to animals, the Board encourages activities of the welfare of the animal organisations recognised by the Board by giving financial assistance for implementing welfare schemes. The achievements of the Board during 93-94 in this regard are as under;

Welfare Schemes	No. of organisations benefitted
1. Rescue Homes for animals	50

2. Animals birth control programmes	25
3. Purchase of ambulance/Tri Wheeler Mobile Clinic	10
4. Veterinary Hospitals/Rescue/Operation/Veterinary dispensaries	150
5. Training camps arranged	98

Under the provision of Prevention of Cruelty to Animals Act, 1960 a committee for the purpose of controlling and supervision of experiments on animals was reconstituted in Feb. 1991. The committee has held three meetings and is preparing a status report on the use of animals for experiment purposes. A sub-committee has been constituted to visit various organisations making use of animals for experiments. The committee will submit its report shortly

ECOLOGY AND ENVIRONMENT

BOTANICAL SURVEY OF INDIA OVERALL PERFORMANCE DURING 93-94

1. Survey of Plant Resources

Survey and explorations were to be undertaken in certain areas of Teria regions and Bundenkhand, Uttar Pradesh, Satpura and Vindya ranges and Bastar District of Madhya Pradesh, Eastern Aravalli Hills of Rajasthan and Araku Valley of Andhra Pradesh 45 tours were to be conducted by Central National Herbarium and 9 Circles of BSI for State and National Flora, out of which up to September, 1993, 19 survey tours were undertaken in different parts of India.

2. Endangered Species

Red Data sheets of 125 species have been edited for Vol. IV and Red Data sheets of 50 rare and endangered species have been compiled for Volume V.

3. Flora of India

Flora of India Vol. 1—3 has been printed and published. Work on Volumes 5, 12 & 13 has also been completed. These volumes are under editing.

4. Useful Plants

The target of compilation and evaluation of information on 5 useful plants of India has been achieved.

5. National Data Base:

As against the target of 600 type specimens, listing of 100 Type specimens has been completed and the remaining work is in progress and is likely to be completed by March, 1994.

6. Mangroves

Editing of the manuscript of Mangroves of Andaman & Nicobar Islands & Godavari Delta (Andhra Pradesh) has been completed.

7. Environmental Impact Assessment

Reports on the following Environmental Impact Assessment were completed.

- I. Tapaimukh Dam Project, Assam.
- II. Seruvani Small Hydel Project.
- III. Kament Hydro-electric project in Arunachal Pradesh.
- IV. Purulia Pumped Storage Scheme, West Bengal.
- V. Goriganga-Dhuliganga Hydro-electric project, Phase IITA, IIIB in Uttar Pradesh.
- VI. Murshidabad TPS, West Bengal.
- VII. Gouripur TPS, West Bengal

ZOOLOGICAL SURVEY OF INDIA

Exploration and Survey of Faunal Resources

44 surveys were undertaken in Arunachal Pradesh, Sikkim, Rajasthan, Gujarat, Manipur, Mizoram, Kerala, Maharashtra, Goa Sunderbans, Andhra Pradesh, Chhandigarh, Digha, Tamil Nadu, Madhya Pradesh, Bihar and Delhi.

Status Survey of endangered species

One survey to study satyr and western Tragopan was undertaken.

Taxonomic studies

Taxonomic studies were undertaken in Meghalaya, Tripura, Sikkim, West Bengal, Orissa, Andhra Pradesh, Chilka lagoon, Hugli-Matla estuary.

Publications

In all total of 94 scientific papers were published by the Departmental Scientists.

Development of National Zoological Collections.

The National Zoological Collections were enriched by the addition of 23,395 identified specimens belonging to 1482 species. These include 17 new species.

Computerisation of Collected data and Environmental Information Service on Animal Ecology

- (a) Data of about 4520 registered general collections computerised.
- (b) Application software for Computerisation and retrieval of concerned data developed.

Marine Aquarium-cum-Research Centre, Digha

Work for the start of the aquaria is progressing satisfactorily. Corals and other materials have been brought from Andaman islands for decoration. Local field surveys were continued.

ENVIRONMENTAL EDUCATION, AWARENESS AND TRAINING

The Ministry accorded priority to promote environmental education and create environmental awareness among various age groups of country's population through diverse activities and mass media campaign. The National Environment Awareness Campaign was organised with the major theme of Animal Welfare and Waste Management. The Campaign also addressed the whole gamut of environmental issues such as afforestation, pollution control, conservation, eco-regeneration etc.

So far as publicity is concerned, one News Paper Advertisement, two Radio Programmes, one Calendar, 4 Advertisements through Magazines, have been completed and 250 Eco-clubs have been set up. The process for printing posters has been initiated and these are likely to be ready shortly. The target of four posters within a month, proposals for setting up of more Eco-clubs have been under consideration and the target of 1000 of such clubs is expected to be achieved.

An amount of Rs. 15,48,500 has been released for formation of Paryavaran Vahinis, 25 films on environment have been produced and 9 such films are expected to be finalised within a short time.

ENVIRONMENTAL INFORMATION SYSTEM (ENVIS)

During the year it responded to 5662 queries 4815 national and 847 international. The major areas of queries received pertained to several subjects such as toxicology, bio-degradation of wastes, air and water pollution, environmental management, vehicular pollution, air and water quality standards, etc.

UNEP'S INFOTERRA

The ENVIS updated its information relating to the political sources on environment in the country. The information on Indian sources has been included in the International Directory which was published during the year by UNERP.

Paryavaran Abstracts.- 4 issues of the journal were published and circulated amongst scientific institutions, universities, scientists, engineers, etc.

ACTIVITIES OF THE ENVIS CENTRES

All the ENVIS Centres continued their activities on information collection, collation, storage, retrieval and dissemination in the respective subject areas during the year. The ENVIS

Centres undertook several activities so as to provide substantive information both descriptive and numerical to their user groups. More ENVIS Centres will be set up on other priority areas.

INDIRA GANDHI PARYAVARAN PRASKAR (IGPP)

The Award Committee, under the Chairmanship of Vice President of India, held one preliminary meeting to consider the nominations for the year 1992.

The nominations have also been invited through Press etc for consideration of the Award for the year 1993.

NATIONAL MUSEUM OF NATURAL, HISTORY

- (a) The work relating to second phase of development of bio-science computer room and computerised documentation is under progress.
- (b) The NMNH organised a number of temporary exhibitions including 'THE FOREST ECOSYSTEMS OF INDIA' on the occasion of the international forestry Conference of Developing Countries in September, 1993 and 'ENVIRONMENT AND DEVELOPMENT' at the Indian International Trade Fair, 19 November 1993. Normal educational activities like Mobile Museum and School Loan Service. Summer Programme and National Environment Awareness Campaign activities were also continued.
- (c) Partial completion of the galleries at the RMNH, Mysore.
- (d) Completion of the architectural designs and bulking plans for the Regional Museum of Natural History at Bhopal and Bhubaneswar and Partial completion of the buildings.
- (e) Efforts to acquire site for new building of NMMH at New Delhi could not be materialised due to difficulties faced in acquiring a suitable piece of land for this purpose.
- (f) A major new project undertaken during the year 1992 on behalf of the Ministry of Environment and Forests was a nationwide "CARE FOR THE ENVIRONMENT CONTEST" involving six categories of environment related contests in 15 language in which more than 2 lakhs of entries were received was successfully completed. A special office was set up for sorting, classifying and judging the entries. The same was completed and an award function was organised on 5th June 1993. The entries received will now be used for environment education and exhibitions.

CENTRES OF EXCELLENCE

Centre for Environment Education, Ahmedabad

The major activities undertaken by the Centre during the year 1993-94 are as under:

- TALEEM (Teach and Learn Environmental Education Modules), a programme of short, theme specific training programmes Commenced during the year. These programmes are intended as an on-going activity tailored to the needs of distinctly defined audiences.
- An interpretive plan was developed for the Madras Crocodile Bank during the year.

- The News and Features Service of CEE, carried out a newspaper campaign out to denotification of the Narayansarover wild life Sanctuary in Kachch, Gujarat. A result the decision was given by the Gujarat High Court reversing the denotification restoring the status quo ante.
- Four issues of 'Sampark' the Hindi edition of the UNESCO-UNEP EE newsletter brought out.
- The Centre put up an exhibition in November 93 as part of the pavilion on Environment Pragati Maidan in New Delhi. The theme of the exhibition was 'Act Now' and through interactive exhibits and informative posters, the exhibition aimed to motivate people to act in an environmentally friendly way.
- A programme of environmental quality monitoring involving students of high schools and colleges, in the districts of Dakshina Kalulada, Hassan and Tumkur has been earmarked. A campaign to clear the District of Coorg of non-biodegradable waste was carried out involving local schools.

CPR Environmental Education Centre, Madras:

- The Centre has set up an Environment Law Cell which conducted several training programmes on environment, wildlife, people and the law, to familiarise NGOs with environmental legislation.
- The Centre has analysed soils from the various wasteland sites to check the suitability of tree species to be planted. A comprehensive report has been published.
- Publications were brought out on "(Priya —The Parrot", in English and Tamil (on urban waste management and clean environment). Water Resources Management (in English and Tamil), on Wasteland Development (in Telugu), the Nilgiri Biosphere Reserve and Animal Welfare (in English and Tamil).
- The Centre Developed a Teacher's Environmental Education Kit (in English and Tamil) for use in schools and in the projects on Eco-restoration of the Coastal Areas of Tamil Nadu and Andhra Pradesh. Various publications pertaining to environmental education were also brought out.

Centre for Mining Environment, Dhanbad:

- A number of new projects pertaining to reclamation of mined out areas, environmental impacts of iron ore, limestone and china clay mining in Singhbhum district of Bihar have been taken up.
- Haul road dust control at Noamundi Iron Ore Mine has been taken up.
- A short course on Environment Management in Mining Areas (7th to 19th June, 1993) has been organised.
- A course on Management of spoil and tailings in Mining and other areas (21st to 26th June 93) has been organised.
- An off campus course on Environmental Pollution in Mining Areas was held between 3rd and 4th July 93 at Chugus, Chandrapur.

Centre for Ecological Sciences, Bangalore

This Centre has initiated work on a number of basic research projects like:

- Monitoring ecological changes at the scale of individual communities/ landscape/ region scale/ national scale.
- Solid access to, biological resources.
- Multipurpose indigenous plant resources.
- Ecologically sustainable development.
- Community based resource management system.
- Reviving traditions of nature conservation.

National Natural Resources Management system (NNRMS):

A Standing Committee on Bio-Resources and Environment was constituted to oversee the scheme. For achieving the objectives of the scheme a detailed document indicating the key issues covering 37 priority areas identified for undertaking research projects was drawn up. 11 research projects were undertaken on various priority areas for monitoring changes in environment by integrating conventional and remote sensing techniques. Out of the 9 ongoing research projects one project was completed during the year 1993-94. The progress of the remaining ongoing projects was monitored on quarterly basis. Two new projects were approved for funding by the Standing Committee on Bio-resources and Environment during the year.

CONSERVATION WETLANDS

- During 1993-94, two meetings of National Committee on Wetlands, Mangroves and Coral Reefs were held and the following actions have been initiated:
 - (i) Five wetlands viz. Tso Moriri (J&S); Ropar (Punjab), Chandratall lake and Pongdam Lake (Himachal Pradesh) and East Calcutta Wetlands (West Bengal) were identified for intensive conservation and management purposes and the State Governments were requested to formulate detailed management action plans on these areas.
 - (ii) The State Governments have been requested to notify the important wetlands within various States for conservation purposes.
- Management action plans for Lower and Upper Lakes of Bhopal and Kanjli have been sanctioned.
- Two meetings of Research Sub-committee on Wetlands, Mangroves and Coral Reefs were held and the following actions were initiated:
 - (i) Eight research projects have been sanctioned.
 - (ii) Draft guidelines for preparation of management action plans have been prepared.

- An Indo-British Workshop was held in Calcutta from 4 - 6 December, 1993 to discuss the issues pertaining to floodplain wetlands with particular reference to Brahmaputra and Indo-Gangetic floodplains.
- An amount of Rs. 70 lakhs has been so far released out of a provision of Rs. 150 lakhs for the scheme during 1993-94. The balance amount is expected to be released by the end of March, 1994.

MANGROVES & CORAL REEFS

- Two meetings of National Committee on Wetlands, Mangroves and Coral Reefs were held.
- Management action plans for Sunderbans, Point Calimere, Pichavaram, Goa, Coondapur have been sanctioned.
- Seven research projects have been sanctioned.
- Draft guidelines for preparation of management action plans for mangroves and coral reefs have been prepared.
- Management action plan for Andaman and Nicobar Coral Reef area has been initiated for the first time and sanctioned.
- An amount of Rs. 70 lakhs has been so far released during 1993-94 out of a provision of Rs. 150 lakhs.

BIOSPHERE RESERVES (BRs)

During 1993-94, a National Biosphere Reserve Committee was constituted which held its first meeting on 11th May, 1993. In order to avoid delay in distributing money to various State Governments for implementation of Management Action plan, financial assistance was discussed for various State Governments in the Committee and the following assistance was approved for various Biosphere Reserves as follows:

Sl.No	Name of BR	Management Plan	Action	Research Component
1	Nokrek	500000		400000
2	Great Nicobar	1400000		800000
3	Nanda Devi	4300000		700000
4	Sunderbans	4950000		1000000
5	Gulf of Mannar (GOM)	3300000		700000
6	Nilgiris			
	(a) Karnataka	3300000		700000
	(b) Kerala	2200000		500000
	(c) Tamilnadu	3300000		700000
	Total	23280000		5500000

As per the discussions held in the National Biosphere Reserve Committee meeting, a Scientific Advisory Committee was formulated, in which various research projects sent by State Government discussed for financial assistance. Six projects approved by the Committee for which, the first installment have been released in case of all the project proposals. The details of the project proposals along with the total outlay and the first installment released follows:

Title of the project	Total outlay	Amount released
Ecosystems dynamics and plant-animal interactions in Great Nicobar BR	774432	442400
Biodiversity of Cataceans of Tuticorin	100000	57000
Breeding strategies of birds in tropical moist deciduous forest in Siruvani	402488	138000
In-situ observations on under-water ecology of coral reefs & associated fauna in the GOM BR	604000	455500
Enumerative survey & Study of dugong dugon in the GOMBR	464566	317500
Studies on the biology and sea ranching of the sacred chank, Xancus pyrum with special ref. To the protection of species in the Marine national park of GOM	317440	154800

BIODIVERSITY CONSERVATION

During the year, the work for coordinating preparation of the Status Report was continued. first draft of volume I of the draft has been pr and is under examination for finalisation.

For the 50 action points identified from the diversity Convention, lead organisations/ experts specific areas of action were identified for preparing detailed action programmes within a given time some reports have been received, while other awaited. The reports when ready would be discussed the In-house Committee, in the Ministry.

Action was also initiated for ratifying the convention, which is now in the final stages. An Indian delegation participated in the first meeting of the Intergovernmental Committee on convention on Biological Diversity in October, India chaired the deliberations of the Asian group was also elected the Vice Chairman for one working groups.

For the 50 action points emerging from the convention, regional level consultations are being e during January and February, 1994 through the Regional offices of the Ministry. A Project was sanctioned for compiling a monograph on tree species of India.

BOTANIC GARDENS

The proposals received from State Governments/ Universities/Research Institutes were examined and evaluated. So far, funds have been released to Vikram University, Ujjain, South Gujarat University and Northern Circle of Botanical Survey of India, Dehradun, for strengthening their facilities for undertaking conservation and propagation of endangered plants. Two more proposals have already been processed for financial support.

In addition, under the scheme, an initiative has been taken during the current financial year for net-working and upgradation of botanic gardens in the country. An approach paper on this subject was prepared and discussed in a meeting of experts while a group of experts has been identified for evaluating the botanic gardens to identify those which have the potential to be integrated into a national network; action plans have been invited from six upswing gardens in different regions. The proposals received so far far being examined for financial support.

Proposals to establish a National Botanic Garden at NOIDA and a regional botanic garden at Bhopal are being pursued. A proposal for setting up of a moss garden is also under examination.

RESEARCH AND DEVELOPMENT

(i) 124 research projects are progressing under sub-schemes of Man and the Biosphere Programme, Environment Research Programme and Action-oriented Research Programme for Eastern and Western ghats. Eleven new projects were sanctioned and 39 projects were completed. Progress of 82 projects was reviewed through Expert Committees. A meeting of the Expert Advisory Committee on Action-oriented Research Programme for Eastern and Western ghats was held in which 11 projects out of 27 were approved. Final technical reports of integrated action-oriented programme on river Kaveri was prepared. The executive summaries of the 138 completed projects are being printed.

(ii) The Pitamber Pant National Environment Fellowship Award for 1993 was given to Dr. S. Sriramachari of Institute of Pathology, Safadarjung Hospital Campus, ICMR, New Delhi-29 to work on "Trace element analysis of human tissue samples for bio-environmental monitoring"

G.B. Pant Institute of Himalayan Environment & Development

The Foundation Stone of Kullu unit of G.B. Pant Institute of Himalayan Environment and Development was laid on 12-6-1993. Thirty projects remained operational during the year which included 21 for Action-oriented research projects for the Himalayan region Fifteen projects were completed. Annual Day of the Institute was celebrated on 14th September, 1993 at Srinagar. The 3rd G. B. Pant Memorial lecture was delivered by Mr. V. Rajagopalan, Vice President of World Bank. A Regional Training Seminar on "Conservation and Management of Biological Resources in the Himalayas", Garhwal (Srinagar) was also organised during 21—30 September, 1993 under the aegis of UNESCO.

PREVENTION AND CONTROL OF POLLUTION CENTRAL POLLUTION CONTROL BOARD (CPCB)

- (i) A survey of status of pollution in 8 industrial estates has been initiated for 8 states. By March, 1994, the survey is expected to be completed.
- (ii) Noise pollution survey has been completed at Lucknow and Pune, Vadodara and Kochi and is continuing at Indore.
- (iii) It has been proposed to take up 13 New categories of industries for developing liquid effluent/ gaseous emission standards. Under ECOMARK Schemes, the Central Pollution Control Board has developed criteria in respect of 13 categories of products, whereas the final criteria for Soap and Detergent has been notified. For 1993-94, the Ministry of environment and Forests has directed the Central Board to develop draft criteria for 16 categories products.
- (iv) The Central Pollution Control Board has proposed to carry out indepth pollution control studies in 90 industries falling under the 17 categories of industries identified by the Government as grossly polluting. Studies on about 40 to 50 industries are to be completed during 1993-94.
- (v) For quick exchange of data between Central Pollution Control Board and State Pollution Control Boards, on-line linkage between Central Board and State Boards is being established through NINT of NIC. CPCB, SPCB and MOE&F, Universities, IIT' and Research Institutions have been connected through SIRNET of INSDOC.

Environment Policy and Law

The National Environment Tribunal Bill, 1992 has been introduced in the Lok Sabha Amendment certain provisions of Environment (Protection) Act and being processed. Two projects on biotechnology and also being processed. The Environment Friendly Schedule has been started in the financial year 1992-93 and will continue for the whole of VIII Five year Plan.

Comprehensive Environment Legislation

To prepare a comprehensive legislation by adopting a cross medium approach, the multiplicity of legislation and agencies and also overlapping are require to be revised and simplified. A major reason for the need for comprehensive legislation is the poor implementation of environmental legislation because of its frame-work. The other problems are the nature of legislation and the offences created allow offenders to buy time by using the judicial process; media specific legislation provides space for intermedium transfer of pollutants. There are also a plethora and multiplicity of implementing agencies and authorities.

A proposal for integration of the major environmental laws was assigned to the Indian Law Institute in the year 1991. The studies have been completed and final report on integration of Laws has been received and the same is under consideration in the Ministry.

AMENDMENTS TO WATER (PREVENTION AND CONTROL OF POLLUTION) ACT, 1977

And amendment to the Act was made on 16th April, 1993 to include in the Schedule-1 the Engineering and industries and Power (hydel, thermal) industries. Due to these amendments, the cess collection has already increased substantially and is likely to increase further.

Amendment to the Environment (Protection) Act, 1986.

The Environment (Protection) Act, 1986 places responsibility on the Central Government for taking necessary measures for protecting and improving the quality of the human environment and preventing, controlling, and for abatement of environmental pollution and prevention of hazards to human beings, other living creatures, plants and property. The legal framework of this Act was created in 1986, in the context of the Bhopal Tragedy for ensuring overall environmental protection and for responding to emergencies. This Ministry has received a number of suggestions from State Governments, Central and State Pollution Control Boards and other organisations and individuals which would help in removing practical difficulties and providing for effectiveness and flexibility in the implementation.

A proposal is under consideration for enhancement of the fine (under section 5) to be imposed for contravention of the provisions, so that the same increase can be effected for both Water and Air Acts.

HAZARDOUS SUBSTANCES MANAGEMENT

In order to enhance safety in handling and management of Hazardous Substances following steps continued

- (i) The Redbook for Crisis Management has been revised to update names, addresses and telephone numbers. Duties have also been specified.
- (ii) District-wise hazard analysis and preparation of Off-site Emergency Plan for the new districts are in progress. Work has been assigned to various consultants.
- (iii) Action has been initiated for the establishment of emergency response centres. Bhopal (MP) and Manali (Tamil Nadu).
- (iv) International organisations have been contacted for procurement of data bases. Establishment of States linkage has been completed under the Scheme of National Registrar for Potentially Toxic Chemicals and Implementation of London Guidelines. Proposal has been called for establishment Regional Register for Potentially Toxic Chemical (RRPTC).
- (v) Draft Amendment of Hazardous Waste and Rules on Micro-organisms have been prepared. Draft Rules for Management of Bio-medical wastes have been prepared.
- (vi) Scheme on Development of Secured Landfill sites has been implemented funds have been released to various States like Karnataka, Andhra Pradesh, Gujarat, Maharashtra, Tamil Nadu, Rajasthan etc.
- (vi) Scheme on Survey of some cities for Municipal Solid Waste has been started. Inter-departmental review meetings were held to promote utilisation of Municipal/Industrial Solid Waste.

ENVIRONMENTAL AUDIT

A scheme for Environmental Audit has been started from 1992-93 and will continue during VIII Plan at a total cost of Rs. 50.00 lakhs at the rate of Rs. 10.00 lakhs per year. Environment Audit is an assessment of an industry of its processes, technology etc.

A notification has already been published under which all the industries, which are required to take consent under Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 or authorisation under Hazardous Waste Management Rules or both; are required to submit an environmental statement in the prescribed forms to the respective State Pollution Control Boards for the period ending 31st March on or before 30th September every year, beginning 1993 under the scheme the Ministry initiated the work relating to the preparation of Environmental Audit Report for selected industries belonging to the 17 categories of heavily polluting industries through institutions.

A Booklet on Environmental Statement (as part of Environmental Audit) has been prepared describing the concept of environmental audit, methodologies to conduct audit in the units and the benefits that would accrue from it for circulation to various industries, industry associations and concerned organisations.

ADOPTION OF CLEAN TECHNOLOGIES BY SMALL SCALE INDUSTRIES

The scheme is to continue during the 8th Five year plan at a total cost of Rs. 50.00 lakhs at the rate of Rs. 10.00 lakhs per year.

The scheme proposes to provide subsidy to small scale industries through Small Industries Development Bank of India (SIDBI) for adopting pollution control measures. Subsidy under this scheme would be given to ensure parity with the interest rate under the World Bank aided Industrial Pollution Control Project.

The scheme also provides for adoption of clean technologies by Small Scale Industries (SSIs) through assistance for education and training of SSIs through Small Industry Development Organisation - an apex body of Development Commissioner, SSI, Ministry of Industry. A project has been sponsored to D.C. SSI during 1993-94 at a total cost of Rs. 5.35 lakhs to organise training and awareness programmes to the personnel of S.I.D.O. Information will be made available to SEIs regarding adoption of waste minimisation measures clean technologies through publication of Sector specific manuals.

IMPACT ASSESSMENT

The targets and actual (up to 31-12-1993) regarding number of projects appraised during 1993-94 are as follows:

Sl. No.	Sector	Appraisal of projects	
		Target 1993-94	Actual (upto 31 -12-93)
1	Mining sector	50	48
2	Industry sector	60	19

3	Atomic Power sector	10	01
4	Thermal Power sector	30	49
5	River Valley sector	60	45
6	Other sectors	50	66*
	TOTAL	260	288

*Some of the projects have been appraised more than once.

(i) Carrying Capacity Study on Doon Valley

The project was sanctioned at the cost of Rs. 100 lakhs for the period of three years, 50% of work completed. Review was made during July 1993.

(ii) Carrying Capacity Study of National Capital Region

The project was sanctioned at the cost of Rs. 209.82 lakh, for a period of three years. All equipment ordered, man power in position. The first report identifying the "hot spots" is expected to be ready by end January, 1994.

(iii) Carrying Capacity Study of Damodar River Valley Basin.

The project was sanctioned at the cost of Rs. 255.50 lakhs for three years. A review of programme was made during November 1993. The problems in completing the first six month study were identified. Remedial action is being taken to avoid any slippage in completing the project in time.

(i) Knowledge Based System for EIA for Industrial projects The project was sanctioned at the cost of Rs. 17.1t lakhs for period of 18 months. A review was held during November 1993. 75to of the work is completed.

(ii) Studies on Ground Water Contamination in Land Around Ash Dumps Areas of Power Plants. The study was sanctioned at a cost of Rs. 7.33 lakhs for a period of two years. Sampling and analysis and interpretation of data is being done and the report is likely to be ready by December 1993.

New projects being taken up in 1993-94

(i) Carrying Capacity Study of Tapi River Estuary

It is a multidiscipline and multi-institution study. The project has been formulated. Role of institutions and the requirements of finance are being worked out.

(ii) A Study to Develop Siting Criteria for Gas Based Thermal Power Plants in Ecological Sensitive Area.

The project has been formulated. The institute which would carry-out the study has been identified. Requirements of finance are being worked out.

Training Programme

Four workshops during 1993-94 were proposed to be funded by the Ministry. One workshop has already been held and remaining three workshops will be held by March, 1994.

The other training programmes under Indo-Dutch Programme, World Bank are being finalised.

Clean Technology

A meeting to discuss the proposal for setting up a Clean, Technology Centre was held in November 1993. Work on the first phase is likely to start by December 1993. It is proposed to set up centre with limited applications on an immediate basis in respect to coal sector. The expenditure proposed is for a demonstration project.

INTERNATIONAL COOPERATION

- (a) The Ministry of Environment and Forests is the nodal agency in the country for the United Nations Environment Programme (UNEP), South Asia Co-operative Environment Programme (SACEP), International Centre for Integrated Mountain Development (ICIMOD) and the International Union for Conservation of Nature and Natural Resources (IUCN). Annual financial contributions are made to these organizations. The Ministry also functions as the nodal agency for participation in international agreements such as the Convention on International Trade in Endangered Species (CITES), the Convention on Migratory Species, Ramsar Convention on Wetlands and the Basel Convention on Transboundary Movement of Hazardous Substances. The Ministry is responsible for 12 out of 33 agreements/conventions etc. to which India is a Party.

(ii) The Rio agreements are still being actively discussed and translated into action programmes. The Commission on Sustainable Development (CSD) has undertaken to oversee and review the implementation of Agenda 21. Signatory countries to the major Conventions on the Conservation of Biological Diversity and Climate Change are moving towards the establishment of the Conference of Parties. Issues deriving from the Non-legally binding forest principles are being keenly discussed at representative bodies of nations such as the Forestry Forum for Developing Countries, or the World Commission on Forests. The countries of the Commonwealth have also perceived the need to focus discussion on environmental issues. The establishment of the restructured Global Environmental Facility (GEF) as a fulfillment of one of the major agreements at Rio is as yet awaited.

(iii) Establishment of Ozone Cell for which funding has been received from the Multilateral Fund of the Montreal Protocol; The Cell has since been established. India's country programme on the phase out of the ozone depleting substances has been approved by the Executive Committee of the Multilateral Fund. Sanctions for individual projects have also been obtained.

(iv) Follow up of Environment Action Programme (EAP) Document:

The final version of the EAP document has been forwarded to the Department of Economic Affairs in December, 1993. During the year, two major rounds of discussions were held in September and December wherein the comments of other Ministries/Departments were considered and included in the document where necessary. The EAP document serves to highlight priority areas in the field of environment protection, though it does not represent an exhaustive list of such concerns.

(v) Finalisation of additional proposal for funding from GEF: Limited progress was made during the pilot phase of the GEF towards mobilizing projects that met the criteria stipulated by GEF towards generating a steady pipeline of projects. For GEF-2, an inter-ministerial cell has been

constituted under the Chairmanship of Secretary (EF). A workshop was held in December where experts of the UNDP and the World Bank were present. A large number of proposals were discussed at this workshop and a few identified for further refinement and subsequently, presentation to GEF. Second workshop is proposed in January, 1994. Information relating to GEF guidelines, etc. have been circulated extensively.

(vi) Follow up action on Conventions in terms of proposal for extending funding India has ratified the Frame Work Convention on Climate Change on 1-11-1993. The Convention on Conservation of Biological Diversity is being ratified Both Conventions have since come into force (Climate change from 21-3-94 and Biological diversity from 29-12-93. Proposals for funding under the terms of the Conventions are, for the present, taken up under GEF.

GANGA ACTION PLAN

GANGA ACTION PLAN PHASE-I

As on 1st April 1993, 206 out of 261 Schemes sanctioned had been completed. During 1993-94 till end of November, 1993, 5 schemes were completed and another 33 schemes are targeted to be completed by March 1994. The remaining 17 schemes are likely to spill over and completed, except a couple of schemes, during 1994-95. While most of Schemes have progressed according to schedule, there have been slippages in some Schemes of interception and diversions and sewage treatment on account of problems of land acquisition, court cases, poor response from tenders, adverse law and order situation in Ganga Action Plan towns and enlargement of scope of work.

The following table shows the number of scheme completed and schemes under implementation.

Category	U.P.	Bihar	West Bengal	Total
Schemes sanctioned	106	45	110	261
Schemes completed	85	38	88	211
Schemes under progress/ Implementation	21	7	22	50

Following table shows category-wise number of schemes completed till the end of November, 1993 in various States:

Category	U.P.	Bihar	West Bengal	Total
Interception & diversion schemes	32	17	18	67
Sewage treatment plants (STPs)	7	0	8	15
Low cost sanitation (LCS)	12	7	22	41
Electric crematoria	3	8	15	26
River Front Facilities	8	3	24	35
Other Schemes for biological	23	3	1	27

regeneration of the river, etc.				
TOTAL	85	38	88	211

As on 1- 11 - 93, a capacity to intercept/divert 543 mld of municipal sewage and treat 297 mld has been created. The completion of most of the low cost sanitation schemes and electric crematoria has helped in reducing river water pollution.

Checking or industrial pollution of river is yet another area of concern for Ganga Project Directorate. According 64 polluting industries had been identified along the Ganga which discharge their effluent into the Ganga river and its tributaries. Out of these, 68 grossly polluting units have been monitored for pollution abatement. During 1985 only 14 units had effluent treatment plants. Presently, 49 units have set up effluent treatment plants and 12 units have been closed down. Effluent treatment plant is under advanced stage of construction in one unit. Remaining 6 units are under prosecution. A capacity to treat 229 mld of industrial effluent, out of the estimated quantity of 260 mld, has been set up.

The water quality has been observed to improve discernibly in towns where pollution abatement schemes have been commissioned wholly or in part. It has also been observed that both the Dissolved Oxygen and Bi3-chemical Oxygen Demand are meeting the permissible limits for bathing in main towns except at Kanpur.

A number of research projects on scheme specific and site specific thrust areas such as Pollution Monitoring, Resource Recovery, Bio-monitoring and Bio-conservation and Impact Assessment of Ganga Action Plan on health have been initiated during the year. Low cost and unconventional technologies for sewage treatment through plantation and aquaculture are being studied with a view to find alternatives for sewage treatment.

Possibilities of initiating available technological options for disinfection of sewage through ultraviolet and gamma radiation are being explored. Under the directions of the Planning Commission, the works completed under the Ganga Action Plan Phase I were evaluated by four University Experts namely Prof. R. P. Mathur (Roorkee University), Prof. T.C. Aggarwal (Motilal Nehru Regional Engineering College, Allahabad), Dr. R.K. Sinha (Patna University) and Prof. Nilaya Chaudhuri (Jadavpur University). The reports on evaluation have been received from these experts and are under examination for making possible incorporation in the Ganga Action Plan Phase II and NRAP.

The technology of "Afforestation with Raw Sewage" developed by the Central Soil Sanitary Research Institute, Karnal, has been applied under the Action Plan Phase I at Buxur and Varanasi. The technology as a means of sewage treatment has been taken up for the towns of Faridabad and Agra under Yamuna Action Plan.

GANGA ACTION PLAN PHASE II AND NATIONAL RIVER ACTION PLAN

(i) GANGA ACTION PLAN PHASE II

The second phase of Ganga Action Plan would cover the following works:

1. Works required but not included in the 1st Phase in 25 class I towns;

2. Pollution abatement works in Class II and Class III towns identified on the main river;
3. Pollution abatement works on the grossly polluted stretches of tributaries of the Ganga (Yamuna, Gomti and Damodar Action Plans).

Under the Yamuna component of Ganga Action Plan Phase II, pollution abatement works are to be taken up in 15 towns - 8 in Uttar Pradesh, 6 in Haryana, besides Delhi. The estimated cost of the Yamuna component is Rs. 357 crores for which external assistance from Government of Japan is available. Under the Gomti component, works are to be taken up in 3 towns of U.P. namely: Lucknow, Sultanpur and Jaunpur. The estimated cost of the works is Rs. 64 crores. The implementation period of both Yamuna Action Plan and Gomti Action Plan is six years.

The pre-feasibility reports costing Rs 347.64 crores in respect of all the towns under Yamuna Action Plan have been examined and approved to prepare the Detailed Project Reports. The State Governments of Haryana and Uttar Pradesh including Delhi are now preparing the DPR's. The preparation of DPR's in respect of smaller schemes such as Low Cost Sanitation, Setting of Electric/Wood Crematoria and Aforestation is not likely to take much time. Therefore, it is proposed to start the work on these schemes in all the towns covered under Yamuna and Gomti Action Plans by the end of March 1993. The State Governments have been requested to pre-prepare and submit the DPR's in respect of other schemes expeditiously. Work on these schemes would be taken up as and when the DPR's are received from the States.

To formulate an Action Plan for the pollution abatement of river Damodar, survey and studies to collect data have been initiated. On completion of these studies specific schemes will be prepared by the State Governments of Bihar and West Bengal.

The pre-feasibility reports for the other components of Ganga Action Plan Phase II are being prepared by the concerned State Governments. While the DPR's for all the towns in UP and Bihar except Haridwar proposed to be covered under Ganga Action Plan Phase II have been received, the State Government of West Bengal has only recently decided to participate in Ganga Action Plan Phase II on 50: 50 cost sharing basis.

The start of works on schemes other than Yamuna Action Plan and Gomti Action Plan under Ganga Action Plan Phase II will take place in 1994-95 only.

(ii) NATIONAL RIVER ACTION PLAN (NRAP)

Besides the works undertaken on Ganga, Yamuna, Gomti and Hindon, the NRAP would also cover polluted stretches of 19 other rivers in the country. The stretches have been classified based on pollution load surveys carried out by the Central Pollution Control Board (CPCB). The CPCB is continuing surveys and if required some more stretches in these or other rivers would be taken up, subsequently, depending upon the pollution loads. The Planning Commission has already approved the Approach Paper on the proposed NRAP. After completing various formalities, the approval of the Cabinet/ CCEA will be obtained before starting the Scheme.

CIVIL CONSTRUCTION UNIT

Major Works completed during 1993-94:

- (i) Regional Museum of Natural History, Mysore.
- (ii) 24 Residential Quarters (Phase I) at Coimbatore.
- (iii) Approach road to existing Nursery to IDF at Jabalpur.
- (iv) Providing drainage system to FRI Campus at Coimbatore.
- (v) 32 Staff quarters for Botanical Survey of India at Dehradun.
- (vi) 108 Quarters for Regional Forest Research Centre Jabalpur.
- (vii) 37 Residential Quarters for ZSI at Digha
- (viii) Residential quarters for BSI Pune.
- (ix) 41 Staff quarters for FRT Coimbatore (Phase II).
- (x) Institute of Northern Peninsular Deciduous Forest, Jabalpur.
- (xi) Residential Quarters (40 Nos) for IAZFR Jodhpur.
- (xii) Roads and Development of site for G. Pant Institute for Himalayan Environment and Development at Almora