

CHAPTER II (B)
REVIEW OF OVERALL PERFORMANCE DURING 1994-95
INDIRA GANDHI NATIONAL FOREST ACADEMY

IGNFA was established in May, 87 by upgrading the Indian Forest College, Dehradun and delinking it from the Forest Research Institute. The Academy is responsible for initial inhouse training for Indian Forest Service probationers. The training was spread over a period of two years upto May 1994. Now the training will be for 3 years as per revised syllabus.

- 63 IFS probationers of 1992-94 batch completed training in Dec,94.
- 83 probationers of 1994-97 batch are undergoing training.

INDIAN COUNCIL OF FORESTRY RESEARCH AND EDUCATION, DEHRADUN

1. Publications of brochures on Red Sanders, Chironji, Ailanthus excelsa, Salvadora spp., Prosopis juliflora, Kadam, Anjan, Bursera penicillata, Sisham and jungle jalebi.
2. Publication of 100 books and monographs.
3. Publication of Neem Network Bulletin, Seed Bulletin and Timber Trade Bulletin.
4. Preparation of one high band U-matic audio-visual film using multi-screen and multi-projector on "Forest and Man".
5. Construction of residential buildings 16 units. and Scientist Hostel containing 32 suites. A review of the performance of the six Research Institutes and three Centres during 1994-95 under ICFRE is as under:

I. FOREST RESEARCH INSTITUTE, DEHRADUN

- I. Standardization of nursery practices of Paulownia species and tree interaction studies with agricultural crops.
- II. Development of laminated wood from plantation timbers for furniture, joinery and Engineered wood products.
- III. Identification and indexing of seed mycoflora, assessment of fungal deterioration of seeds of sissou, Kadamb and eucalyptus in the field and storage and its control.
- IV. Identification and characterization of VAM fungi and rhizobia associated with D.Sissoo and Acacia nilotica from nurseries and plantations including critical sites.
- V. Improved utilisation of fibrous raw materials for pulp and paper making through activation/modification of high yield pulps and oxygen bleaching.
- VI. Biological control of Poplar and shisham defoliators by using egg parasites, Trichogramma spp. and Trichogrammatoidea eldanae.
- VII. Clonal propagation of Dalbergia sissou Tactona Grandis Eucalyptus hybrid and Bamboos.

II. ARID FOREST RESEARCH INSTITUTE, JODHPUR.

1. Morphology bionomics and control of Babul defoliator with details and study of its potential natural enemies.
2. Study and selection of efficient strains of mycorrhizal fungi to enhance the growth of tree spp. in arid and semi-arid regions.
3. *Azadirachta indica* (Neem) collection of provenances and assessment.
4. Studies on phenology of important arid zone tree species.

III. INSTITUTE OF FOREST GENETICS AND TREE BREEDING, COIMBATORE.

1. Provenances trials of *Azadirachta indica* *Tectona grandis* *Tamarindus indica* *Casuarina* spp.
2. Reproductive biology and breeding systems in some tropical tree species.
3. Selection of *Casuarina equisetifolia* for increasing productivity
4. Standardisation of vegetative propagation techniques for *Casuarina* spp. *Acacia* species and *Albizia* species.
5. Developing tissue culture protocol for Bamboo, *Casuarina* and Teak.

IV. TROPICAL FOREST RESEARCH INSTITUTE, JABALPUR

1. Study of non-timber forest products.
2. Studies on the role of biofertilizers on growth of agroforestry multipurpose tree species.
3. Studies on insect, pest of fruits, seeds, nurseries of some of the tree species of the zone.
4. Developing tissue culture protocols for Bamboo spp., teak and *Eucalyptus* species.

V. INSTITUTE OF WOOD SCIENCE AND TECHNOLOGY, BANGALORE.

1. Study of structure and shrinkage behaviour of juvenile and mature plantation grown timbers- *Eucalyptus*.
2. Comparative studies of physico-chemical properties of natural and plantation grown *Pterocarpus santalinus* (Red sanders).
3. Enhancement of durability of bamboos by different treatments.
4. Leachability studies of preservatives in *Casuarina equisetifolia*, *Eucalyptus tereticornis* and *Eucalyptus camaldulensis*.
5. Demonstration of Agro-forestry models.

VI. INSTITUTE OF RAIN AND MOIST DECIDUOUS FORESTS RESEARCH, JORHAT.

1. Studies on seed and nursery technology of important species of north-east.
2. Screening of Tropical evergreen forest trees for VAM association their culture and utilisation in Nurseries and plantation as biofertilizers foF increased productivity.

VII. TEMPERATE FOREST RESEARCH CENTRE, SHIMLA

1. Develop and demonstration technology of afforestation of cold desert areas with local species.
2. Demonstration of agroforestry models with superior clones on farmer lands in the valleys of lower hills.

VII. CENTRE FOR SOCIAL FORESTRY AND ECO-REHABILITATION, ALLAHABAD.

1. Develop technology for afforestation and ecological rehabilitation of refractory and degraded sites.
2. To enhance the productivity of Vindhya forest by selection of seed production areas and initiate action to establish seedlings, seed orchards and clonal seed orchards.
3. Develop and demonstrate agroforestry models with superior clones of multipurpose species to enhance productivity.

VIII. CENTRE FOR FOREST PRODUCTIVITY, RANCHI

1. Extension of lac cultivation and study of lac market trend.
2. Trial of new lac host viz *Accacia auriculiformis* (Akashmoni) with Kusum & Rangeeni varieties in association with West Bengal Development Corporation and Bihar Forest Department.

INDIAN PLYWOOD INDUSTRIES RESEARCH AND TRAINING INSTITUTE (IPIRTI), BANGALORE

The Institute was established in 1963 jointly by the Plywood Industry and Government of India. It was under the administrative control of CSIR till March, 1978 and subsequently under the Ministry of Industry till April, 1990. Thereafter w.e.f. 1st May, 1990 it came under the administrative control of Ministry of Environment and Forests.

The achievements during the year are as under:

- Out of 33 ongoing projects, 22 projects are expected to be completed.
- Out of 13 training programmes to be held during the year, 5 have already been organised wherein 22 trainees participated.
- One special training course on "Adhesives Manufacture and Application for Plywood" has been organised. 93 samples have been tested for conformity to relevant Indian Standards.
- A one day National Workshop on processing of small diameter logs was held on 10-5-1994 wherein ;30 participants took part.

SVRVEY AND UTILISATION OF FOREST RESOURCES FOREST SURVEY OF INDIA

Forest Survey of India (FSI) carries out a comprehensive forest survey at regular intervals and brings information in a suitable form for planning at national, state and local levels including evaluation through inventory to facilitate scientific forestry planning. Efforts are underway to

acquire a Digital Cartography System to strengthen the capabilities of the FSI. The revised Estimate for the Plan Scheme Forest Survey of India has been kept at 750 lakhs as against the Budget Estimate of Rs.380 lakhs to enable procurement of the system. The achievements during the year are as under:

S. No.	Item of Work	Unit	Targents for 1994-95	Achievements Upto Nov, 94
1.	Forest Inventory	Area in Sq. km	26,000	4,483
2.	Data Processing	Do	26,000	In Progress
3.	Thematic mapping sheets of	1:50,000	260	89
4.	Vegetation maping	1:2,50,000	181	81
5.	Training	No. of persons Trained	90	69
6.	Wood consumption studies	No. of areas	4	Nil

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 Bangaloret Lucknow, Shillong, Bhopal, Bhubaneshwar and Chandigarh with Headquarters at New Delhi. These offices were set up to monitor cases under Forest (Conservation) 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 regdlarisation of encroachments and examine cases between 5-20 ha. in consultation with State Advisory Board.

2. Region-wise physical targets for 1994-95 and achievements upto September, 1994 are given below:

Regional Office	Forest Cons. Act		Environmental Protection Act	
	Targets	Achievements	Targets	Achievements
Bangalore	175	87	80	32
Bhopal	175	14	80	5
Bhubaneshwar	175	76	80	48
Lucknow	175	76	80	48
Shillong	120	43	45	11
Chandigarh	80	31	35	15

RO (HQ), New Delhi	--	---	---	---
Total	900	315	400	203

FOREST PROTECTION AND REG8NERATION

Forest fire is one of the major factor responsible for depletion/destruction of forest areas. This was not given due importance tiTI early eighties. The Modern Forest Fire Control project with UNDP assistance was launched in 1984 as a demonstration project in the states of Uttar Pradesh and Maharashtra. The project continued as a pilot project till 1990-91 with UNDP assistance. In 1991-92, assistance of Rs.20 lakhs was given. The scheme was continued during VIII Plan with approved outlay of Rs .5 crores. During 1992-93 and 93-94, RS .74 lakhs and Rs.l. 24 crores respectively were released to 11 states namely, Andhra Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Kerala, Uttar Pradesh, Himachal Pradesh, Gujarat, Bihar, Tamil Nadu and Orissa. The main items included for assistance are handtools, wireless communication sets, watch towers, fire finders, fire resistant clothing and creation of fire lines.

Under the Scheme “Association of Scheduled Tribes and Rural Poors” in Regeneration of Degraded forests on Usufructs Sharing basis”, an amount of Rs .2.75 crore has been provided. The afforestation projects sanctioned during 1992-93 and 1993-94 under the scheme in Madhya Pradesh,Andhra Pradesh, Orissa, West Bengal, Maharashtra, Gujarat, Bihar are being continued. A sum of Rs .53.00 lakhs has been released to the State Governments during 1994-95 upto November, 1994.

FOREST POLICY

The Indian Forest Act, 1927 is the main Act which regulates the management of forests by; the states. In some States, the Act is applicable as it is,while some of the States have enacted their own Acts which in essence,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 of 1988. Consequently need has been felt for a revised and more comprehensive legislation which would take into account the new National Forest Policy and the emerging imperatives of conservation of forests. A draft legislation has been circulated to the State Governments and Union Territory/Administrations and the comments received from them are being examined for finalising the drafti Consultation has also been initiated with Non-Governmental Organisation so that their views can also be adequately reflected in the final draft. The draft Act would also have to be considered through joint collective consultation in Inter-State Council.

JOINT FORESTRY MANAGENENT

The National Forestry 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 fuel wood requirement of the people. Accordingly, the Government of India issued guidelines to the State Government 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, 15 states have issued appropriate government orders/resolutions enabling peoples participation in management of forests on usufructs sharing basis. These states are Andhra Pradesh, Bihar, Karnataka, Rajasthan, Gujarat, Madhya Pradesh, Orissa, Tamil Nadu, West Bengal, Himachal Pradesh, Haryana, Jammu & Kashmir Punjab and Tripura. The other States are being pursued to issue similar orders.

NATIONAL FORESTRY ACTION PLAN

With the announcement of the National Forest Policy, 1988, it became necessary to orient all on-going forestry programmes to meet the objectives set by it. Consequently, an integrated perspective programme for long, medium and short-term development of the forestry sector at national and State level is being prepared, taking all aspects of forestry and people. This is being done under the project National Forestry Action Programme (NFAP) with the assistance of UNDP and FAO. The project document was signed during June, 1993 and became operational since July, 1993. Zonal sector Review Reports under the NFAP have been prepared. Organisations/ Institutions/ individuals for consultancy in specific subject areas have been identified and preparation of consultancy reports is under progress. International consultants in the fields of resource Economics, Forest Industries Planning, Institutional development and Forest Sector Review have been appointed. A draft of the National forestry Action Programme is likely to be ready by the end of 1994-95.

WILDLIFE

The scheme "Strengthening of Central Wildlife Division and consultancies for Special tasks started from the year 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 Cochin were subsequently started. Proposal for setting up of two more sub-regional offices at Kandla and Paradeep has been approved and is under process for establishment.

Under the scheme Assistance for Development of National Parks and Sanctuaries, financial assistance was provided to 31 National Parks and 135 Sanctuaries (upto October, 1994.)

PROJECT TIGER

The centrally sponsored scheme "Project Tiger" was launched on 1st April, 1973 to ensure maintenance of a viable population of tigers in India for scientific economic aesthetic, cultural and ecological values. During 1994-95, the budget estimates were at Rs. 770 lakhs which have been raised to Rs. 798 lakhs at the revised estimates stage, for development and management of 21 Tiger Reserves. The Annual Plans of Operation (APO) of 21 Tiger Reserves were processed and provided central assistance.

With the notification of two more Tiger Reserves, namely the Panna Tiger Reserve in Madhya Pradesh and Dampa Tiger Reserve in Mizoram, during this year, the number of Tiger Reserves in the country has risen to 23.

PROJECT ELEPHANT

The scheme was started in 1991-92 and is being continued during VIII Plan. The Eighth Plan outlay of the scheme which was Rs.6.25 crore has been exhausted. The additional requirement of funds to the tune of Rs.19.00 crores are needed for implementation of this scheme. The Expenditure Finance Committee in its meeting held on 19.9.94 reviewed the estimates of expenditure and approved the additional requirement of funds. The scheme is being processed for approval of the Ministry of Finance

ECO-DEVELOPMENT IN AND AROUND PROTECTED AREAS

The Scheme started in the year 1991-92 and is being continued during VIII Plan. By November,1994, an amount of Rs.3,82.949 lacs have been released for assistance to 45 protected areas. Balance release is held up pending revision of EFC Memorandum, as the plan allocation has already been completely utilised.

NATIONAL ZOOLOGICAL PARK

	Targets for 1994-95	Achievements for 1994-95
1.	Providing of Interpretative sinages	Partly completed
2.	Improvement of moats for steady flow of water	Partly completed
3.	Enlargement of feeding cubicals of parther enclosure	completed

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. The achievements of the institute during 1994-95 are as under:

	Course	No. of Persons Trained
1.	M. Sc. Course in Biology	7
2.	Post Graduate Diploma in Wildlife Management	16
3.	Short Course	8

Four new projects under Indo-US collaboration have been forwarded to the M/o Finance, Department of Economic Affairs for external assistance.

CENTRAL ZOO AUTHORITY

- Evaluation work of zoo was continued during 1994-95 also and 4 medium zoos and 2 small zoos-were evaluated upto 30.9.94.
- There were reports about mis-management -of animals at Nasik Zoo. Accordingly the zoo was asked to close down and the animals in the stock of the zoo were transferred to Sanjay Gandhi National Park, Borivilli, VJB Udyan, Bombay and Pune Zoo.
- Centre for Cellular and Molecular Biology, Hyderabad was given an amount of Rs.24.928 lakhs for carrying out the research project on molecular characterization of wild animals by DNA Finger printing and Semen Analysis of Cryo preservation of Indian wild animals.
- Wildlife Institute of India was given a grant of Rs.3.45 lakhs for organising training course for zoo personnels and for publication of a book on zoo in India.
- A workshop on “Indira Gandhi Vision of Wildlife Conservation Zoo one such instrument” was organised from 29th to 3st October, in which the cientists, manayers, animals lovers and wildlife protected areas managers participated.

ANIMAL WELFARE BOARD

The fund provisions for the Animal Welfare Board of India under non-plan and plan has been kept at Rs.130 lakhs and Rs.20 lakhs. Considering the establishment of new animal welfare organisations, additional fund requirement of the existiny organisations and the board taking up animal birth control programme particularly immunisation and sterilisation of dogs, it is expected that the fund requirement will be approximately Rs.143 lakhs. Besides, the Board is going to hold seminar on animal welfare. The board needs fund for acquisition of land for the board.

The achievements of Animal welfare Board of India during 1994-95 are as under:

WELFARE SCHEMES	NO. OF ORGANISA- TIONS BENEFITTED.
1. Rescue Home/Animal Shelters etc.	54
2. Water troughs	38
3. Animal Birth control/Anti-Rabies programmes	48
4. Rescue operations	35
5. Purchase of medical equipments	14
6. Conducting vety. Camps	17
7. Animal welfare activities/New organisations	17
8. Purchase of medicines	95
9. Esabishment charges	74

The committee reconstituted for the purpose of control and supervision of experiments on animals in 1991, has already prepared the status report and will be now preparing guidelines.

NATIONAL AFFORESTATION AND SCO-DEVELOPMENT BOARD (NABB)

PERFORMANCE DURING 1994-95

Scheme	Physical		Financial	
	Target	Achievment	Target	Achievement
1. Integrated Affrestation and eco development project scheme	60000 ha	Under Compilation	48.00	37.22
2. Fuelwood/Fodder projects shceme	68000 ha	Under Compilation	34.00	23.94
3. Raising of minor forests produce including Medicinal plants scheme	20000 ha	Do	12.00	6.90
4. Seed development scheme	22 States to be assisted	8 states assisted	2.00	1.03
5. Aerial Sedding Scheme	22,500 ha	Not Reported	1.50	0.00
6. Grants-in-aid Scheme (for Voluntaryn Agencies)	30 projects to be sanctioned	27 projects sanctioned	1.50	1.20

ECOLOGY AND ENVIRONMENT BOTANICAL SURVEY OF INDIA SURVEY OF PLANT RESOURCES

Thirty-seven survey tours were undertaken by Central National Herbarium and nine circle offices of Botanical Survey of India in connection with the State and National Flora work of different parts of India. Nine survey tours have been completed till December 31, 1994. Rest of the tours are expected to be completed within target period.

STATE FLORA

Taxonomic description of 25 species completed. In regard to the Flora of MP Vol.II, Flora of Andaman & Nicobar Islands, Flora of Arunachal Pradesh and Flora of Assam and 60 species are expected to be completed within the remaining part of the year in respect of Flora of Assam. Taxonomic description of 204 species of Flora of Mizoram, Vol.II, 50 swpecies of Madhya Pradesh, Vol.II, 55 species of Andaman & Nicobar Islands, 45 species of West Bengal, Vol.II,

100 species of Cold Desert, 125 species of Kerala, Vol.II, 45 species of Sikkim, Vol.II and Arunachal Pradesh have been completed. Final manuscripts of Flora of Shivgiri and Sathor hill of South Western Ghats have been prepared. Taxonomic description of the rest of the species of these flora are expected to be completed within the remaining part of the year.

ENDANGERED SPECIES

Manuscript of Red Data Book of Indian plants is ready for publication. Compilation of Red Data Sheets of 50 species of Vol.V has also been completed.

NATIONAL FLORA/FLORA OF INDIA

Four families of Vol.IV of Flora of India completed and the work relating to editing and publishing of Vol.IV is likely to be completed within the remaining part of the year.

USEFUL PLANTS

Scientific evaluation of two species of useful plants completed.

NATIONAL DATA BASE

Work relating to computerization of type specimens of Botanical Survey of India, Herbaria is in progress. Finalization of the manuscripts of live plant collection is also in progress. The Manual of Cultivated Plants has also been completed.

ETHNOBOTANICAL STUDIES

The proposed ethnobotanical studies in Sunderbans and Koraput are expected to be completed during 1994-95.

CAPTIVE BREEDING

Out of 20 species, work relating to ex-situ conservation of rare and endangered species of plants completed and the remaining work is expected to be completed within the targetted time.

POLLEN ATLAS OF INDIAN PLANTS

Pollen slides of five species of Berberidaceae completed. Studies relating to growth and development of economical plants in respect of five species have been completed and introduced in the Garden.

PUBLICATION

Three publications have been brought out during 1994-95 and another eleven publications are at different stages of publication & printing and are likely to be published before the close of the targetted time.

ZOOLOGICAL SURVEY OF INDIA
Exploration and surveys of faunal resources

A total of 80 expensive surveys and 48 local surveys have been proposed to cover ecosystems and conservation areas. Out of these, 38 surveys as detailed below were undertaken upto September, 1994 and the remaining will be completed during the year under report.

Himalayan Ecosystem

3 surveys - 1 in Arunachal Pradesh and 2 in Sikkim were undertaken.

Desert Ecosystem

2 surveys were undertaken, one each in Rajasthan and Ladakh.

Tropical Rainforest Ecosystem

7 surveys - one in Nagaland and 2 each in Mizoram, Manipur and Kerala were carried out.

Freshwater Ecosystem

A total of 11 surveys - one each in Kolleru Lake, Andhra Pradesh, Sabhar Lake, Rajasthan, Sukhna Lake, Chandigarh, Pichola Lake, Rajasthan, Kondakaria Lake, Andhra Pradesh and Harike Wetland, Punjab and 6 Surveys in the Wetlands of, Doon Valley, Uttar Pradesh were conducted.

Marine Ecosystem

6 surveys were undertaken in West Bengal.

Conservation Areas

3 surveys were undertaken - one each in Pench Tiger Reserves, Todoba Tiger Reserve and Bhimashankar Wildlife Sanctuary.

State Surveys:

A total of 6 surveys were conducted - 2 surveys in Madhya Pradesh and one each in Bihar, Delhi, Andhra Pradesh and Tamil Nadu.

Status Survey of Endangered Species

One survey was undertaken to study the status of Chinkara and Desert Cat.

Taxonomic Studies:

Fauna of Sikkim: 6 manuscripts received and the rest under preparation.

Fauna of Minipur: Identification of the material collected so far is in progress.
Fauna of Nanda Devi: Final manuscripts have been received and processed for sending to press.
Fauna of Ujni Wetland: The final report is under preparation.

Publication

Fauna of India : One volume on crustaceans is in press.
Records of ZSI: Vol. 93 published
Annual Report of ZSI : 1990-91 and 1991-92 published
Bibliography of Indian Zoology: Vol. 28 published
State Fauna of Meghalaya : Parts I-IV in press.
Fauna of Chilka Lake: It is in page proof stage.
Fauna of Hugli - Matla Estuary: In page proof stage.
Fauna of Rajaji National Park : In page proof stage.
Fauna of Western Himalaya : In final stage of printing.
Red Data Book (vertebrates) : Published.

Status Survey Report: Reports on these endangered species, viz.. Golden Langur, Phayre's Leaf Monkey and Hispid Hare published.

Computerisation of Collection Data:

Data of about 2000 registered general collections computerised.

Environmental Information System (ENVIS) on Animal Ecology:

Data entry operation on Schedule I animals pertaining to their ecology are being computerised.
One issue of Newsletter on Animal Ecology published and the second issue under preparation.

Renovation of Zoological Galleries and Regional Museum:

Fish Gallery in Calcutta is being constructed and likely to be completed in December, 1994.
Some new exhibits in the Regional Museum at High Altitude Station, Solan (Himachal Pradesh), Southern Regional Station, Madras and Eastern Regional Station, Shillong added.

Environmental Impact Assessment (EIA):

The following surveys have already been undertaken:

- Goriganga Hydroelectrical Project at Dehra Dun.
- Hydroelectrical Project at Khadki Tal, Turagana, Nasik.
- Carrying Capacity Study at Doon Valley.
- Kalpong Hydroelectric Project at North Andaman.
- Suheli Barrage, Uttar Pradesh.
- Coal Belt areas at Chhotanagpur, Bihar.
- Tista Barrage, West Bengal.
- Damodar Valley (2 surveys)

Marine Aquarium-cum-Research Centre, Digha

All the decorating material have been appropriately fixed for the foreground and background of 24 aquarium chambers. Life material more than 1100 have been collected from Andaman sea. Display work of Museum exhibits is in progress.

Identification and Advisory Services

76 enquiries pertaining to identification of zoological material and other technical matters were attended to by ZSI Scientists.

Around 14000 identified specimens pertaining to about 540 species were added to the National Zoological Collections upto September, 1994.

Training and Extension Programme

Wildlife Week celebrated; other trainings and programmes on Animal Ecology, Taxidermy and Environmental Awareness will be conducted during the remaining part of the year.

ENVIRONMENTAL EDUCATION, AWARENESS AND TRAINING

(a) Environmental Education, Awareness and Training

The Ministry accorded priority to promoting Environmental Education and creating Environmental Awareness among various age groups of country's population through diverse activities and mass media campaign. The National Environment Awareness Campaign (RRAC) was organised with the main themes of 'Joint Forest Management' and 'Eco Development'. The campaign also addressed the whole gamut of environmental issues such as people's participation in forest management, Soil Conservation, Wildlife Protection, Montreal Protocol, Natural Resources Conservation etc. About 2200 organisations including NGOs, State Government Departments, Academic Institutions etc. are participating in this campaign during the year.

So far as publicity is concerned, one News Paper Advertisement, two Radio Programmes, one poster and one Advertisement through Magazine have been completed. So far about 800 Eco-clubs have been set up. The process for printing of 2 more posters has been initiated. Environment Education material in the form of a booklet is being printed. The quarterly magazine 'Paryavaran' in Hindi is being published regularly and 200 copies are distributed. 11 films on various topics related to environment have been produced so far and 10 additional films are expected to be finalised during the year.

(b) Grants-in-aid to Professional Societies

Financial support has been provided to various organisation including NGOs for developing exhibition galleries and educational programmes relevant to ecology wildlife and environment and to develop activities in the field of environment.

(c) Paryavaran Vahini

An amount of Rs.3,92,000/- has been released for expenditure on Paryavaran Vahinis 80 far. Substantial amount is to be released to the State/UT Govts. in the financial year 1994-95 soon.

ENVIRONMENTAL INFORMATION SYSTEM (ENVIS)

- The ENVIS Network with the Focal Point at the Ministry and 20 subject-specific ENVIS Centres located in different parts of the country continued its activities in information collection storage retrieval and dissemination.
- The Network responded to a total of 6721 queries out of which 5816 national and 905 international. The queries pertained largely to the subject areas like pollution control, renewable energy, bio-degradation of wastes, western Ghats ecology, Environmental management etc.
- During the year one new ENVIS Centre on 'Bio-geochemistry and Environmental Law' was set up in the School of Environmental Studies, Jawahar Lal Nehru University.
- The ENVIS Centre on 'Eastern Ghats' located earlier at Andhra University has been relocated at the EPTRI, Hyderabad, from where it has started functioning.
- The ENVIS Centre on 'Plant Ecology' located at Botanical Survey of India, Calcutta, also started functioning during the year.

Connectivity among the Focal Point and other ENVIS Centres is now being established through the ERNET Programme of the Department of Electronics. The users of ENVIS now will be having access to the databases of some premier educational and research institutions in the country.

Library

During the year, the Library of the Ministry has procured various documents, journals, research reports, abstracts etc., in the field of environment and its related areas, so that it could act as an information repository for the ENVIS in the Ministry.

More than 250 national/international scientific journals have been received. The collection of the documents etc., has been about 20,000.

Indira Gandhi Paryavaran Puraskar:

The IGPP Awards for the years 1992 and 1993 were presented to the awardees by the Hon'ble President at a function held at Rashtrapathi Bhawan on 6th August, 1994. Dr. K. Shivarama Karnath, the noted litterateur of Karnataka was awardee the Puraskar under the individual category for 1992, while the award for title organisation category for the same year went to the 157-Infantry Battalion TA (Ecological) for outstanding work in the Dehra Dun - Mussoorie Hills Region.

The Awardees for 1993 are; Dr. T.N. Khoshoo, eminent scientist under Individual category and the Young Mizo Association, a voluntary organisation of Mizoram under the organisation category.

Nominations have also been invited through Press advertisements for consideration of the Award for the year 1994.

NATIONAL MUSEUM OF NATURAL HISTORY (NMNH)

- (a) Partial completion of the Galleries, educational facilities Bio-science Computer Room, technical infrastructure, landscaping and horticulture of the Regional Museum of Natural History (RMNH) Mysore.
- (b) Partial completion of the building and initiation of collection work for the Regional Museum of Natural History, Bhopa.
- (c) Laying of foundation stone and initiation of construction works for the Regional Museum of Natural History, Bhubaneswar.
- (d) Collection of specimens, preservation, fabrication and production of exhibits needed for the Regional Museum of Natural History.
- (e) Regular educational and outreach activities of the IANH, throughout the year including Mobile Museum Service, School Loan Service, Summer Programmes, Teacher Orientation Workshops, Environment Awareness Campaign, Popular Publications, organisation of Temporary Exhibitions, etc.
- (f) Follow-up action on the 'Care for the Environment Contest' by prototype production of environment education resource material based on the entries received in various categories of the contest.
- (g) Collaboration with Delhi University and the National Museum Institute, New Delhi, in conducting course in Environmental Biology and Museology.
- (h) Professional enrichment programme through exchange visits of museum personnel with US Natural History Museums under the Indo-US Natural History Museum Partnership Programme.
- (i) Strengthening the educational infrastructure and potential of the NMNH through enriching the Library, Audio-visual and Film Collection, Photographic Documentation of the flora, fauna and ecosystems of India etc.

In terms of the targets set for 1994-95 there have been shortfall in acquiring land for permanent housing of the NMNH setting of project offices at Bhopal and Bhubaneswar for RMNHs because of the pending approvals of the project Reports and phased developments of the Regional Museums of Natural History.

Centres of Excellence:

a. Centre for Environment Education. Ahmedabad.

The Centre for Environment Education (CEE), Ahmedabad, continued to develop and continued to develop and conduct environmental education programmes and activities throughout the country. Highlights of the activities of this Centre during 1994-95 are as follows:

- A Seminar was organised to mark ten years of CEE's existence with the objectives of reviewing past achievements, assessing the strengths and limitations of the Institute and set courses of action for the future.
- The eight month long Training programme in Environment Education (TEE) was continued and TEE-94 commenced in November-1994.
- Three programmes on Bio-diversity, Forest Management and Environment Education were held under the TALEEM (Teach and Learn Environmental Education Modules) Programme.
- Under the Environment Education Bank Programme new nodes have been established at CEE-North East in Guwahati and CEE-Western at Pune to cater to the environmental educational and information needs of these regions.
- Under the South and Southeast Asia Network for Environmental Education (SASEANEE), a two-month 'Internship in Environment Education' was organised at Ahmedabad with support from Commonwealth Secretariat which was attended by in-service professionals from six countries. Another Seminar-cum-Training on Solid Waste Management was organised at Bangalore which had participants from 5 countries besides India.
- A six-week summer vacation project "Clean Green Summer Project" was organised for students in the 13-21 years age group, with the objective of promoting integrated-management of house-hold garbage through partnership between citizens and the Ahmedabad Municipal Corporation.
- A State level PREPCOM Meeting was organised to finalise Indian Country Paper on Environment to be presented at the 4th World Conference on Women to be held in Beijing in 1995.
- The Ranthambore and Hingolghadh Eco-development Programmes continued with their activities aimed at enhancing local capabilities for implementing sustainable development processes around National Parks and Sanctuaries and creating awareness.
- A Field Office has been set up at Amreli to carry out a project which aims at action about water-related health and sanitation issues through awareness and training programmes in fluorosis affected village.
- Two nature education camps were organised during the year at Sasan in collaboration with the Gujarat State Forest Department in which 66 teachers participated.
- The following major resource materials were brought out by CEE during the year:
- Plague: A Citizen's primer has been prepared for the general public.
- Sampark: The Hindi Version of the UNESCO; UNEP Newsletter "Connect" was published.
- A Report of the task force of the Kachch Marine National Park" was prepared with support from the Rajiv Gandhi Foundation and was presented at the "National Conservation Congress" organised by the WWF at New Delhi in November, 1994.
- A video documentary about the denotification of the Narayan Sarovar Sanctuary has been prepared in collaboration with Development and Educational Communication Unit (DECU), Ahmedabad.
- An "Environment and Development Kit" consisting of 32 four-colour transparencies was prepared.
- Six short video spots on environment were produced out of which some have been telecast by Doordarshan.

- Work relating to designing a symbol/logo for the Central Zoo Authority is under progress.
- A background paper on Primary environmental care was prepared for UNICEF.
- An approach paper on "Conservation of Biological Diversity" has been prepared for the Meeting of the Conference of Parties held at Bahamas during December, 1994.

C.P.R. Environmental Education Centre. Madras:

Highlights of the activities of the CPREECt Madras, are as follows:

- More than 40 Training programmes have been organised on topics dealing with environmental protection and regeneration for NGOs and rural workers.
- Twelve teacher training programmes were organised in which about 192 teachers participated.
- Nineteen workshops on environment education were held during the year for school students.
- A Summer workshop on environment was organised during April-June, 1994, in which about 300 school students participated.
- Eight one-day Seminars were organised for more than 450 participants on Environmental Protection, People and the Law.
- About 150 villages in 4 districts of Tamil Nadu were covered by the Eco-Van which has exhibits/activities aimed at creating environmental awareness among the masses.
- The Centre has identified 18 sacred groves in Tamil Nadu for restoration and work on six sites has been initiated during the year.
- A permanent exhibition on "Habitats of the World" has been set up at the Vandalur Zoof Tamil Nadu.
- Under the Rural Eco-development Project, about 4000 saplings of local tree species have been planted in ten villages of Tamil Nadu. Two more project sites in Andhra Pradesh have also been identified.
- A herbal garden is being developed at Thampatty village, by the Centre's Station at Ooty to educate the rural people and school children about the medicinal value of the plants of the Nilgiris.
- Work relating to development of village Bokkapuram as an eco-model village was continued. A ten day NSS Camp was conducted at Bokkapuram for student volunteers. A 3-day nature camp was also organised for the students of the Tribal Residential School at Bokkapuram.
- Environmental awareness programmes for teacher trainees were organised in Port Blair under the Andaman and Nicobar Conservation Programme.
- The Centre participated in several major and minor exhibitions in and around Tamil Nadu during the year and also distributed its publications to a wide cross-section of the population.
- The Centre continued to produce booklets, pamphlets, posters, audio and video cassettes on environmental themes for various target groups.
- The Centre continued to function as the Nodal Agency for the Scheme of "Environmental Orientation to School Education" of the Ministry of Human Resource Development (MHRD). During the year about 65 schools at various districts of Tamil Nadu were covered.

- The Project “Ecorestoration of the coastal areas of Tamil Nadu and Andhra Pradesh” sponsored by the MHRD was also continued and several resource materials relevant to the topic are being collected and produced.

Centre for Mining Environment, Dhanbad.

The Centre organised the following short courses for the benefit of the mining industry personnel.

- Six-weeks orientation programme on Environment Protection and Improvement for the executives of the South- Eastern Coalfields Limited (4.7.94 - 13.8.94)
- A off-campus course on Environmental Management for Central Coalfields Limited executives at Ranchi (6.6.94 - 11.6.94)
- One week executive development programme on Reclamation of Mined out areas. (26.9.94 - 1.10.94)
- One week executive development programme on Environmental Impact Assessment (21.11.94 - 26.11.94)
- One week Executive development programmes on ‘Water Resource Management in Mining Areas’ (12.12.94 to 17.12.94)

Work on the following research projects has been initiated during the year:

- Socio-economic evaluation of coal mining’ complexes with a view to affecting societal development and developing mineral ores societal development index.
- Investigations into the ground water balance in Jharia Coal field.
- Development of noise indices for coal mining complexes.
- Time-scale land-use studies of mining districts of Chota Nagpur and Santhal Pargana area of Bihar.
- Investigations into geo-technical and environmental parameters for design of compliant tailings improvements.
- Survey, isolation and inoculation of Mycorrhizae fungi in coal over burden dumps.
- Air quality impact assessment and development of pollution dispersion models in mining areas.

Centre for Ecological Sciences, Bangalore.

This Centre has initiated work on the following research projects during 1994-95:

- a) Ecology and behaviour of the Queenless ant Diacamma.
- b) Seasonality and prey-predator relationship between Ropalidra Montana and Verpa tropica.
- c) Epidemiological modelling of PPRV and Rinderpest outbreaks.
- d) The resources in urban centres in Karnataka.
- e) Assessment of renewable energy programme in Uttara Kannada Dist.- Western Ghats.
- f) Climate change and tropical forestry; assessment of impacts and adaptations options.
- g) To study grass and fodder productivity from cultivated and non-cultivated lands and its sustainability in village eco-systems.
- h) Feasibility survey of micro, mini and small hydel potential in Uttara Kannada District.

- i) Assessment of Solar, wind and bio-mass potential.
- j) Ecologically sound, integrated Regional energy planning.
- k) Performance and problems of the bee-keeping industry in Karnataka.
- l) Bio-diversity: Classifying habitats.
- m) Bio-diversity: Wild relatives of cultivated plants.
- n) Bio-diversity: Panchayat level bio-diversity mapping.
- o) Bio-diversity: Networking colleges.
- p) Bio-diversity: Computerised bio-diversity information systems.

NATIONAL NATURAL RESOURCE MANAGEMENT SYSTEM (NNRMS)

This scheme was continued during the year and out of ten on-going research projects, one was completed. Four new projects have been sanctioned during 1994-95 and the progress of the on-going projects continued to be monitored regularly.

SEMINARS/SYMPOSIA/WORKSHOPS

Under the scheme a number of NGOs, academic institutions Universities were financially supported for organising Seminars/Symposia/Conferences on various environmental topics of current interest so as to provide a common platform in sharing knowledge and experience among scientists, environmentalists, academicians, policy makers etc., from various disciplines.

WETLANDS

- During 1994-95, one meeting of National Committee on Wetlands, Mangroves and Coral Reefs was held.
- The State Governments have been requested to notify the important wetlands within various States for conservation purposes.
- Management Action Plans for Loktak Lake, Deeper Beel, Pong Dam have been sanctioned.
- One meeting of Research Sub-Committee on Wetlands, Mangroves and Coral Reefs was held and the following actions were initiated:
 - i. Four research projects have been sanctioned.
 - ii. Guidelines for preparation of Management Action Plan for Wetlands have been prepared.
- An amount of Rs.50.00 lakhs has been released upto 30th Sept.94 out of a provision of Rs.150 lakhs for the scheme during 1994-95. It is expected to release the balance amount by the end of March, 1995.

MANGROVES AND CORAL REEFS

- A meeting of National Committee on Wetlands, Mangroves and Coral Reef 8 was held.
- Management Action Plans for Goa and Pichavaram have been sanctioned.
- One research project has been sanctioned.
- An amount of Rs.30 lakhs has been released upto 30th Sept.94 out of a provision of Rs.150 lakhs.

BIOSPHERE RESERVES

During 1994-95, the National Committee on Biosphere Reserves met in May, 1994 and approved the financial assistance for the Management Action Plans for Nilgiri, Sunderbans, Gulf of Mannar, Nokrek, Nanda Devi and Andaman & Nicobar Biosphere Reserves. The following amount during the current year has been released.

(j) Nilgiris :	
(a) Karnataka	22.94 Lakhs
(b) Kerala	14.50 Lakhs
(c) Tamilnadu	4.42 Lakhs
(ii) Nokrek	15.00 Lakhs
(iii) Gulf of Mannar	17.75 Lakhs
(iv) Great Nicobar	22.00 Lakhs
(v) Nanda Devi	17.65 Lakhs
(vi) Sunderbans	Nil
(vii) Manas	Nil

A Scientific Advisory Committee (SAC) has been constituted to oversee the research activities under the Biosphere Reserves. During 1994-95, SAC met two times and as per its recommendations, 5 new research projects have been sanctioned. An amount of Rs. 15.86 lakhs has been sanctioned to various research projects in the major thrust areas of mapping, inventory of biodiversity, population dynamics, socio-economic aspects etc.,

During 1994-95, the Simlipal Forest area in Orissa has been designated as eighth Biosphere Reserve.

BIODIVERSITY CONSERVATION

With a view to give effect to the provisions of the Convention on Biological Diversity, the process of consultations for the various follow-up actions of the convention was continued.

During the year, the work for coordinating the preparation of a Status Report on Biological Diversity was continued. The drafts of Volume II were prepared and are now being finalised for publication.

Consultations were continued to identify the gaps in the existing legal framework on biodiversity. Action was also initiated to regulate the transfer of indigenous genetic material from the country.

The meetings of the Core Group for formulating the National Action Plan on Biological Diversity are being held regularly. A detailed framework of the action plan has been prepared and five smaller groups of experts are preparing the action plan.

In order to evolve mechanisms for regional cooperation on issues related to biodiversity, the Ministry took an important initiative and organised an international consultation on biodiversity

among SAARC, ASEAN and other countries of the region in Bangalore in August 1994, in which the participant countries adopted a Bangalore Declaration.

An Indian delegation participated in the second meeting of the ICCBD held in Nairobi in June-July, 1994. India was the Vice Chairman for one of the Working Groups.

Indian delegation also participated in the historic first meeting of the Conference of Parties to the Convention held in Nassau; the Bahamas in Nov.-Dec., 1994. The Ministry has initiated follow up action on the decisions taken in the Bahamas Conference.

The second installment, for the project on compilation of a monograph on tree species of India, was sanctioned. A project for setting up of an interpretation centre on biodiversity has been processed for grant of funds.

ASSISTANCE TO BOTANIC GARDENS

During the year 1994-95, a meeting of the Expert Group on Botanic Gardens was held on 2.8.94 under the chairmanship of Additional Secretary(S). Pursuant to the decisions taken in this meeting, the Director BSI arranged for physical inspection of six botanic gardens in the country, and then forwarded proposals for strengthening of five botanic gardens. In addition, a few more proposals were also received for consideration of financial support under the scheme. The proposals received were examined. Further details were sought from some of the proponents. Subsequently, three proposals have been processed so far for granting assistance to Government of Tamil Nadu, Jammu University and Guwahati University.

RESEARCH AND DEVELOPMENT

During 1994-95, 202 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. Seventeen new projects were sanctioned and 14 projects were completed. Progress of 35 projects was reviewed through Expert Committees Meetings of all three committees viz, 1) Expert Advisory Committee on Action oriented Research Programme for Eastern & Western Ghats 2) Man & Biosphere Committee, 3) Environment Research committee, were held to clear project proposals. In all 102 projects were considered and 11 projects were approved. An expenditure of Rs.130 lakhs has been incurred out of total allocation of Rs.385 lakhs.

PITAMBER PANT FELLOWSHIP

The Pitamber Pant National Environment Fellowship Award for 1994 was given to Dr. M.P. Nayar, Emeritus Scientist, TBGRI, Thiruvananthapuram on "Hot spots of plant diversity and ecologically sensitive areas in India".

G.B. PANT INSTITUTE OF HIMALAYAN ENVIRONMENT & DEVELOPMENT

A regional meeting of NGOs of North—East was organised on 17-18 Feb., 1994 at Guwahati to identify initiatives for sustainable development of the area. The Institute signed Memorandum of Understanding (MOU) with Yale University, School of Forestry & Environmental Study, New Heaven, USA for research and information exchange. Another MOU was signed with regional research laboratory, Jammu for collaborative research on high value crops. Thirty projects remained operational during the year which included twenty one for Action Oriented Research Projects for the Himalayan Region. Seven projects were completed during the year 1994.

Annual day of the Institute was celebrated on 25 Oct., 1994 at Guwahati. The 4th G.B. Pant Memorial Lecture was delivered by Prof. UR Rao, Member, Space Commission. Project formulation workshop on medicinal plants and orchids was organised in collaboration with Sikkim Government during 21-22 Oct., 1994.

PREVENTION & CONTROL OF POLLUTION

CENTRAL POLLUTION CONTROL BOARDS

- (i) Completion of Inventory of remaining Industrial Estates
- (ii) Studies on assessment of water quality of polluted river stretches will be completed.
- (iii) Pollution Status reports for Metrocities is being prepared and would be completed.
- (iv) River Basin reports have been published for Narmada, Tapi and for remaining river basins, the reports are under preparation.
- (v) Review of Water and Air Quality monitoring stations is initiated and would be completed to cover more locations.
- (vi) Laboratory at Zonal Offices will be established for undertaking investigating schemes.
- (vii) Research and development projects relating to pollution control are continued and would be completed during this year.
- (viii) Training to State Board to undertake analysis of critical pollutants would be completed.
- (ix) Standards which were initiated during 1993-94 would be completed during the year.
- (x) Guidelines for developing “Green Belt” will be completed
- (xi) Meetings of Technical Committee & Sub Committees on ecolabelling are being organised to evolve criteria for different product categories as defined by the Steering Committee set-up in MOEF.
- (xii) Training course under “World Bank Scheme” are being organized.
- (xiii) Ensuring pollution control in 17 categories of industries.
- (xiv) Implementation of Action Points in identified 24 problem areas
- (xv) Inventorisation of hazardous waste generating units will be completed.
- (xvi) Prepared draft guidelines for preparing environmental Atlas for siting of industries.

ASSISTANCE FOR ABATMENT OF POLLUTION

A study was conducted by Indian Law Institute on the integration of major environmental laws to simplify the multiplicity of legislations and agencies and also to remove overlapping and media-specific approach. The report has been submitted by the Indian Law Institute to the Ministry. The report has been circulated to State Governments, concerned organisations and

NGOs for their comments. A project on legal drafting on the comprehensive legislation has also been entrusted to the Indian Law Institute.

ENVIRONMENTAL EPIDEMIOLOGICAL STUDIES:

The scheme on Environmental Epidemiological Studies has been launched to study the health status of human beings, together with flora and fauna in the identified critically polluted areas. The scheme is aimed at to cover all the critically polluted areas and also heavily polluted areas in the country.

During 1992-93, this scheme was initiated and four critically polluted areas viz., Angul-Talcher, Greater-Cochin, Vapi and Chembur were identified.

During 1993-94, these studies were initiated and sampling of health data made. The questionnaire for collecting health data of the population in the affected areas were circulated and the collected information analysed.

During 1994-95, three more areas viz., Kanpur, Mandi Govindgarh (Punjab), and Bhadravati, Karnataka were identified for studies.

The scheme on labeling on 'Environmental Friendly' products which envisage to help to reduce environmental pollution by providing consumers with the information on 'Eco-friendliness' to make wise decision. During 1993-94, four final notifications were issued and nine draft notifications were published for public comments.

A publicity campaign targeting manufacture consumers is also being launched. A scheme on economic incentives under the Eco-Mark is under consideration. A licence has been granted to one product under Eco-Mark.

The Water (Prevention and Control of Pollution) Cess Act, was enacted in 1977 to augment the financial resources of the Central and State Pollution Control Boards. The levy of cess has also been used as to check the pollution of water and help its conservation. The revision of cess rate structure was first made in 1991. In view of the scarcity of sources of Central and State Pollution Control Boards and the need for the control of rising water pollution and also to conserve water, the Government has proposed to enhance the water cess rates structure (more than three times). A note for the Cabinet enhancing water cess rates was submitted to Cabinet Secretariat. The Cabinet in its meeting held on 12.10.1994 deferred the decision and the said Cabinet Note is being redrafted for submission to the Cabinet.

A bill to provide for strict liability for damages arising out of any accident occurring while handling any hazardous substance and for the establishment of a National Environmental Tribunal for effective and expeditious disposal of cases arising out of such accidents, with a view to give relief and compensation for damage to persons, properties and the environment and for matters connected therewith or incidental thereto, has been introduced in Lok Sabha on 18.8.1992. In the last Monsoon Session of Parliament, the bill was referred to the Parliament

Standing Committee of this Ministry for review. The Committee submitted its recommendations to this Ministry for incorporation in the National Environmental Tribunal Bill.

ENVIRONMENTAL AUDIT

A software package for analysis information submitted in environmental statements has been prepared by IIT, Bombay, under the project sponsored by the Ministry and is being disseminated to all the State Pollution Control Boards.

A report on rapid assessment of performance of the environmental statement received by selected State Pollution Control Boards has been prepared by CPCB and the final report will be submitted by the end of November, 1994.

Draft simplification of Form-V for submission of environmental statement has been prepared. This will be finalised on receipt of the report on Rapid Assessment of the Performance of the Environmental Statement by end of November, 1994.

More proposals to organise training programmes on environmental audit for personnel in industry are being obtained.

The State Pollution Control Boards have been requested to furnish the compliance report of environmental statement received by respective State Pollution Control Boards during the year 1993-94.

ENVIRONMENTAL STATISTICS AND MAPPING

A report for the year 1993-94 on project Environmental Statistics and Mapping using GIS with a specific reference to abatement of pollution sponsored to NISTAD, CSIR has been received and is being evaluated.

Proposals for preparation of pollution ATLAS are being obtained from CPCB.

ADOPTION OF CLEAN TECHNOLOGIES IN SMALL SCALE INDUSTRIES

A general guideline manual on waste minimisation has been prepared.

An initial identification of 10 circles with 10 industries in each has been made.

Interactive workshops with entrepreneurs for setting up on waste minimisation circles have been held and some more are being planned.

WORLD BANK AIDED INDUSTRIAL POLLUTION CONTROL PROJECT

The existing activities regarding investment component, CETP component and Institutional Development component are being continued.

The second phase of this Project was signed in June 1994 on the same lines as in phase I. In this phase, other State Pollution Control Boards viz. in the States of Karnataka, Madhya Pradesh, Andhra Pradesh and Rajasthan will be taken up for strengthening.

The procurement of equipment for the above mentioned State Boards shall also be made. The training of the personnel of Pollution Control Boards shall also be carried out.

HAZARDOUS SUBSTANCES MANGEMENT

1. The 4th edition of the Redbook for Crisis Management is ready for printing. Names, addresses and telephone numbers have been updated and duties have also been specified.
2. Industrial Pocketwise hazard analysis reports are being finalised and 11 more areas are being taken up. Preparation of Off-site Emergency Plan Midnapur district is under progress.
3. A Poison Control Centre at AIIMS, New Delhi is being set up.
4. Action has been initiated to establish Regional Register for Potentially Toxic Chemicals at three places, viz. Chandigarh, Bhubaneswar and Bangalore under the scheme of National Register for Potentially Toxic Chemicals and implementation of London Guidelines. Amendment on Manufacture, Storage and Hazardous Chemicals Rules, 1989 has been notified.
5. Amendments to the Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 were gazetted on 3rd October, 1994.
6. Draft Amendments to the Hazardous Waste (Management & Handling) Rules, 1989 and Rules on Manufacture, Import, Export, Use and Storage of Hazardous Micro-organisms Genetically Engineered Organisms have been prepared. Draft Rules for Management of Bio-medical wastes have been prepared.
7. Scheme on Development of Secured Landfill sites has been implemented. Budget has been released to various States like Punjab (Ropar), Madhya Pradesh (Raipur and Indore) and Uttar Pradesh (Lucknow).
8. Reports on Survey of Municipal Solid Wastes have been received from the cities viz., Madras, Bombay, Nagpur, Bhubaneswar and Calcutta.
9. A guide to Safe Road Transport of Hazardous Chemicals is being brought out.

IMPACT ASSESSMENT

Impact Assessment			Monitoring of Project	
	Target	Achievement (Upto 9/94)	Target	Achievement (Upto 9/94)
Mining	50	12	60	51
Industries	60	64	70	43
Thermal	25	12	30	12
RV/HE	50	25	120	55
Atomic	5	1	12	3
Others	60	22	40	15

INTERNATIONAL COOPERATION

- (i) The Ministry of Environment and Forests is the nodal agency in the country for United Nations Environment Programme (UNEP), South Asia Cooperative Environment Programme(SACEP), International Centre for Integrated Mountain Development (ICIMOD), and the International Union for Conservation of Nature and Natural Resources (IUCN). Annual contributions are made to these organisations. The Ministry also functions as the nodal agency for participation in international agreements such as the Convention on International Trade in Endangered Species on Wetlands and the Basel Convention on Trans Boundary Movement of Hazardous Substances.
- (ii) Follow-up UNCED: The principles enshrined in the Rio Declaration and Agenda 21 provide a framework for future action on environmental issues in a global perspective. India is actively participating in the global debate on the implementation of Agenda 21. The Second Session of Commission on Sustainable Development (CSD) was held in New York over 16-27th May, 1994. India was elected to the bureau of CSD as Vice-Chairman representing Asia. The CSD reviewed the Cross-sectoral themes of Agenda 21, notably financial resources and mechanisms, transfer of environmentally sound technologies, role of major groups, decision-making structures, consumption and production patterns, etc. Apart from these, specific themes of health, human settlements, fresh water, toxic chemicals and hazardous wastes were also reviewed. India and the United Kingdom jointly sponsored a Workshop entitled: "Towards Sustainable Forestry: Preparing for CSD 1995" in New Delhi in July, 1994. In this Workshop, a draft framework was prepared for providing the National information to the CSD' 1995.
- (iii) India was represented at the negotiations that adopted the final text of the conventions to combat desertification. The Convention was signed on 14th October, 1994.
- (iv) India ratified the Basel Convention in March, 1992 and has been actively participating in finalising the technical guidelines for various categories of hazardous wastes as identified in the convention.
- (v) Global Environment Facility (GEF): An agreement on the restructuring and the replenishment of the Global Environment Facility (GEF) was reached at Geneva at a meeting of the Participants Assembly, over 14-16th March, 1994. With this Agreement, donor countries pledged a total of slightly over \$ 2.0 billion towards replenishment of the Facility. The four focal areas of GEF are-Climate Change, Biological Diversity, International Waters and Ozone Layer Depletion. The agreement on the restructured GEF envisages funding for activities concerning land degradation, primarily desertification, and deforestation as they relate to the four focal areas.
- (vi) A large number of projects for consideration under the UNDP's capacity 21 programmes have been prepared though there have been no sanctions as of now.
- (vii) A State of Environment report is being prepared by ESCAP for Asia and Pacific Region: the Ministry of Environment & Forests (MOEF) is coordinating India's contribution to this report.
- (viii) The Environment Action Programme of December 1993 gives details of our priorities in environmental management which include the promotion of cleaner technologies, strategies for development of alternate sources of energy and institutional development.
- (ix) During the year, the Indian delegations actively participated in the Sixth Meeting of the Parties to the Montreal Protocol, tenth meeting of the Open Ended Working Group, three meetings of the Executive Committee, three meetings of the Sub-Committee of the

Executive Committee supervising Review under Article 5(8), and in the Steering Panel Supervising review of the Financial Mechanism. The procedure for flow of funds from the Implementing Agencies to the enterprises was finalized. 'Small Project Approval Procedure' was prepared jointly with the World Bank. It was subsequently approved by the Executive Committee. One project preparation workshop was held in August, 1994. Additional three awareness generation cum project preparation workshops are scheduled for December 1994. Aerosol sector strategy was in advance stage of preparation. Comprehensive survey of small scale and informal sector was started. i The Confederation of Indian Industry set up core groups in RAC, Foam and Solvent sectors with assistance from Ozone Cell. The Development Commissioner, SSI set up an Ozone Unit for small scale an informal sector. The Oil Industry safety directorate is nearing completion of a report on safety aspect6 on use of distinchd LPG in aerosol sector.

- (x) Indo-Canada Environment Facility (ICEF): A Joint Project Steering Committee (JPSC) of ICEF has been set up with Additional Secretary(V) as Chairman and JPSC has representatives of MOEP, Department of Economic Affairs(DEA) and Canadian High Commission who will select the projects for funding under ICEF. An amount of Rs.55.0 crores is expected to be received by the government of India under ICEF in the financial year 1994-95.

GANGA ACTION PLAN

GANGA ACTION PLAN PHASE I

As on 1st April 1994, 230 out of 261 schemes sanctioned had been completed. During 1994-95 till the end December 1994, 7 more schemes were completed and another 12 schemes are targeted to be completed by March 1995. The remaining 12 schemes are likely to spill over. 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 tenderers, adverse law and order situation in Ganga Action Plan towns and enlargement of scope of work.

The following table shows the number of schemes sanctioned, schemes completed and schemes under implementation as on 31.12.94:

Category	UP	BIHAR	WEST BENGAL	TOTAL
Schemes sanctioned	106	45	110	261
Schemes completed	102	41	94	237
Schemes under progress/ Implementation	4	4	16	24

Following table shows category-wise number of schemes completed till the end of December 1994 in various States:

Category	UP	BIHAR	WEST BENGAL	TOTAL
Interception and diversion	40	17	22	79
Sewage Treatment Plants(STPs)	9	3	10	22
Low Cost Sanitation (LCS)	14	7	22	42
Electric crematoria	3	8	15	26
River Front Facilities	8	3	24	35
Other Schemes for biological . regeneration of the river etc.	28	3	1	32
Total	102	41	94	237

As on 31.12.94, a capacity to intercept/divert 612.2 mld of municipal sewage and treat 431 mld has been created. The completion of all the low cost sanitation schemes and most of electric crematoria has helped in reducing river water pollution.

The water quality has been observed to improve discernibly in towns where pollution abatement schemes have been commissioned wholly or in part. The following table gives a comparison in water quality between 1986 and 1994 in selected stations.

Station Name	DISSOLVED OXYGEN(mg/1)		BIOCHEMICAL OXYGENEDEMAND (mg/1)	
	1986	1994	1986	1994
Rishikesh	8.1	9.64	1.67	2.03
Hardwar (D/S)	8.1	8.82	1.80	1.08
Garhmukteshwar	7.8	8.02	2.20	2.46
Kannauj (U/S)	7.2	8.76	5.53	2.68
Kannauj (D/S)	NA	7.21	NA	3.04
Kanpur (U/S)	7.2	6.69	7.71	4.99
Kanpur (D/S)	6.7	4.6	8.57	8.52
Allahabad (U/S)	6.4	8.2	11.4	2.27
Allahabad (D/S)	6.6	7.37	15.5	3.57
Varanasi (U/S)	5.6	7.2	10.13	1.83
Varanasi (D/S)	5.9	6.8	10.6	2.87

Patna (U/S)	8.4	7.04	1.96	1.6
Patna (D/S)	8.1	7.18	2.08	1.55
Rajmaha ;	7.8	7.61	1.8	1.88
Palta	NA	6.83	NA	2.53
Uluberia	NA	6.77	NA	3.18
	DO SHOULD BE 5 mg/l OR MORE		BOD SHOULD BE LESS THAN 3 mg/l	

NOTE: U/S stands for up-stream and D/S stands for down-stream.

The research works initiated under the identified thrust areas are continuing and the projects on Bio-conservation and Bio-monitoring are stated to be completed by the close of the financial year. Special emphasis is being laid to identify suitable technology for controlling the microbial pollution.

Research projects mainly use of ultra-violet radiation and gamma radiation have been started. The experimental work on gamma radiation technology has been completed and the final results are expected by March 1995. To economise on the cost of construction and optimise the performance efficiency of the Upflow Anaerobic Sludge Blanket (UASB) Reactor, studies have been initiated with the help of IIT Kanpur. To utilise the sludge for soil conditioning and as manure, analysis of the sludge from various types of treatment technologies is being carried out. Certain new research projects like River Modelling Effect of community toilets on ground water pollution, treatment of liquid wastes by using vermiculture technology and finding biological solutions to the microbial pollution are planned to be taken up during the year 1994-95.

Water Quality monitoring has also been initiated at 15 stations on river Yamuna in addition to the water quality monitoring of river Ganga, Gomti, Hindon and western Yamuna Wanal which was initiated in the earlier years. The data generated from water quality monitoring since 1986 was critically reviewed and a new strategy for water quality monitoring shall now include sediment analysis and monitoring of the drains. Special emphasis has been laid on the performance monitoring of the commissioned STPs under the Ganga Action Plan. The water quality monitoring and the performance monitoring of sewage treatment plants shall be carried out by reputed research institutes and universities situated along these rivers.

A fresh inventory of polluting industries along river Ganga, Yamuna, Hindon and other identified rivers under Ganga Action Plan Phase II and National River Action Plan is being prepared for monitoring the industries for setting up of proper effluent treatment plants.

GANGA ACTION PLAN PHASE II AND NATIONAL RIVER ACTION PLAN

(i) Yamuna Action Plan

Some of the Detailed Project Reports for interception and diversion has been received from Haryana and Delhi and approvals have been accorded to all the schemes received upto the end of October 1994. Detailed Project Reports for the schemes received after October 1994 will be approved and the work will commence on these schemes during 1994-95. As far as UP schemes

are concerned, Detailed Project Reports for land acquisition, wood based crematoria and low cost sanitation for several towns have been approved. During the year 1994-95 till December 1994, 34 Detailed Project Reports have been received out of which 4 have been returned which needed total re-casting. 22 have been approved and 8 are under scrutiny. These 8 Detailed Project Reports will be approved before March 1995.

(ii) GOMTI ACTION PLAN

Ministry of Environment & Forests had sought financial assistance of the Government of UK for implementing this Plan and the latter has indicated its willingness to fund the Lucknow portion of this project with suitable modifications. During 1994-95, Overseas Development Agency consultants are preparing the plan for emergency works as well as documentation for total master plan based on ODA funding criteria. In the meantime, Detailed Project Reports for Low Cost Sanitation and crematoria in Jaunpur and Sultanpur have been approved. Funds have been released for land acquisition for sewage treatment plants in Lucknow. CCTV survey and sewer cleaning works are taken up with ODA assistance in Lucknow to rehabilitate the defunct trunk sewers along the river Gomti.

(iii) GANGA ACTION PLAN PHASE II

Main stem of river Ganga component

A proposal on the mainstem of river Ganga for Pollution abatement works in 10 cities of U.P and 11 cities of Bihar is under consideration of the Central Government. Survey and investigations are being done presently for pollution abatement. Works proposed in West Bengal and Bihar in respect of Damodar river and works in West Bengal for main stem of river Ganga.

NATIONAL RIVER ACTION PLAN

A proposal for sanction of schemes to the tune of Rs.772 crores has been processed and is under consideration of the Government.

CIVIL CONSTRUCTION UNIT (CCU)

MAJOR WORKS COMPLETED DURING 1994-95 (UPTO 30.9.94)

- (i) Herbarium-cum-office building for BSI Shillong.
- (ii) Construction of Additional Floor over existing office building BSI, Port Blair. Office Building for ZSI, Port Blair.
- (iii) Construction of extension to guest house for IFGTB, Coimbatore.
- (iv) Construction of 40 staff quarters Phase-I, IAZFR Jodhpur. Construction of 12 staff quarters for ZSI at Itanagarh.
- (v) Construction of staff quarters for ZSI (18 Nos) Dehradun.