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INTRODUCTION AND THE YEAR UNDER REVIEW

Role and Organisation

The Ministry of Environment & Forests is primarily concerned with planning, promotion, coordination and overseeing the implementation of the various environmental and forestry policies and programmes. The Ministry also serves as 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 for the follow-up of the United Nations Conference on Environment and Development (UNCED). The Ministry is also entrusted with the issues relating to multilateral bodies such as the Commission on Sustainable Development (CSD), Global Environment Facility (GEF) and of regional bodies like Economic and Social Council for Asia and Pacific (ESCAP) and South Asian Association for Regional Co-operation (SAARC) on matters pertaining to Environment.

The broad objectives of the Ministry are:

- Conservation and Survey of flora, fauna, forests and wildlife,
- Prevention and control of pollution,
- Afforestation and regeneration of degraded areas, and
- Protection of environment.

These objectives are sought to be fulfilled by the Ministry through:

- environmental impact assessment,
- eco-regeneration,
- assistance to organisations implementing environmental and forestry programmes,
- promotion of environmental and forestry research, extension, education and training,
- dissemination of environmental information,
- international cooperation, and
- creation of environmental awareness among all sectors of the country's population.

These objectives are well supported by a set of legislative and regulatory measures, aiming at the preservation, conservation and protection of the environment. Some of them are the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public Liability Insurance Act, 1991, the National Environment Tribunal Act, 1995, the National Environment Appellate Authority Act, 1997, Wildlife Protection act, 1972 and Forests (Conservation) Act, 1980. Besides the legislative measures, a National Conservation Strategy and Policy Statement on Environment and Development, 1992, National Forest Policy, 1988 and a Policy Statement on Abatement of Pollution, 1992 have also been evolved.

The organizational structure of the Ministry indicating various divisions, subordinate offices and autonomous institutions is given in Annexure-1.

Allocation of Business

- The Indian Forest Act, 1927
- The Wildlife (Protection) Act, 1972
- The Water (Prevention and Control of Pollution) Act, 1974
- The Water (Prevention and Control of Pollution) Cess Act, 1977.
- The Forest (Conservation) Act, 1980
- The Air (Prevention and Control of Pollution) Act, 1981.
- The Environment (Protection) Act, 1986
- The Public Liability Insurance Act, 1991
- The National Environment Tribunal Act, 1995
- The National Environment Appellate Authority Act, 1997
- National River Conservation Directorate.
- National Afforestation and Eco-development Board
- Animal Welfare
- Indian Forest Services
- Botanical Survey of India and Botanical Gardens.
- Zoological Survey of India.
- National Museum of Natural History
- Indian Council of Forestry Research and Education, Dehradun
- Central Zoo Authority
- Biosphere Reserve Programme
- National Forest Policy and Forestry Development in the country, including social forestry.
- Forest Policy and all matters relating to forests and forest administration in so far as the Andaman and Nicobar Islands are concerned.
- Wildlife preservation and protection of wild birds and animals
- Fundamental research, including coordination thereof and higher education in forestry.

- Desert and desertification
- National Assistance to Forestry Development Schemes
- Indian Plywood Industries Research and Training Institute, Bangalore
- Environment and Ecology, including environment in coastal waters, in mangroves and coral reefs but excluding marine environment on the high seas.

An overview of the activities undertaken during the year by the Ministry and its Subordinate Offices, Autonomous Institutions and undertakings is as follows:

Survey of Natural Resources

Flora

- Germplasm of 65 species of rare, endangered, wild relatives of ornamentals and medicinally important plants have been conserved, multiplied and maintained in different gardens of Botanical Survey of India. 180 species of orchids maintained in Experimental Garden and National Orchidarium, Yercaud. Another 304 species collected for *ex-situ* conservation and maintained.
- More than 33 exploration/collection tours were undertaken by various units of Botanical Survey of India (BSI) in different States, including protected areas, fragile ecosystems and wetlands. More than 17,500 specimens were collected including lower groups of plants, namely, algae, fungi, lichens, bryophytes and pteridophytes. 3028 specimens belonging to 1155 species were identified.
- A total of 18,820 herbarium data sheets were prepared for the family Orchidaceae, Beberidaceae, Menispermaceae, Ranunculaceae, Resedaceae including type specimens. 9,365 data sheets entered into the computer using Botanical Research and Herbarium Management System (BRAHMS).
- Seven species and two varieties have been described as new to science. Eight species have been recorded for the first time from India, two species *Argemone ochroleuca* Sweet and *Melhania incana* Heyne ex Wight & Arn. recorded for the first time from Maharashtra and an endemic species *Asplenium auritum* Sw. rediscovered after 100 years from Kerala.
- Creation of virtual herbarium was initiated by scanning of all specimen of Dilleniaceae in BSI, Southern Circle (MH) on a pilot scale and CD-ROM prepared.
- Flora of Mizoram, Gulf of Mannar, Palamau district of Jharkhand and the bulletins of the Botanical Survey of India were published.

Fauna

- Seventy nine extensive faunal surveys were undertaken by Zoological Survey of India in different States/Union Territories including important ecosystems and some selected conservation/protected areas. Two Surveys were undertaken for the determination of the status of some endangered species.
- Detailed taxonomic studies carried out during the year resulted in the discovery of a total of 31 new species. It includes three species of mites from Antarctica.

- The National Zoological Collection was further enriched by 14,642 specimens belonging to 1,107 species including 31 new species.
- The Fauna of India Volumes for Chloropidae and Sarcophagidae of Diptera and Sauria-Reptilia Vol.-II were published.

Forests

- For the assessment of national forest cover 125 districts (rural) of Trees Outside Forests (TOF) from 22 states and 15 districts of TOF urban from 13 states spread over 14 physiographic zones were surveyed and data was analyzed.
- Wood consumption study was carried out in 39 districts of Maharashtra, Madhya Pradesh, Uttar Pradesh, Rajasthan and Bihar during the year.
- Field manuals for forest inventory and TOF urban have been finalized for data collection.
- Special studies for assessment of change in the forest cover of seven Biosphere Reserves, thirteen Tiger Reserves, twelve National Parks and fourteen Wildlife Sanctuaries have also been done.
- During the year (up to December 2002) the inventory data consisting of tree species and dbh collected from 51 districts, rural and urban areas of all 14 physiographic zones were used to estimate average number of trees per hectare in that zone.
- Forest Survey of India (FSI), Dehradun organized an International Training Workshop on “Assessment of Trees Outside Forests” from April 22-26, 2002. The Workshop was attended by 22 participants from 11 countries from South and South East Asia. Food and Agriculture Organisation (FAO) of the United Nations sponsored the Workshop.

Conservation of Natural Resources including Forestry and Wildlife

Biosphere Reserves

- Thirteen Biosphere Reserves have been set up in the country to protect representative eco-systems and serve as laboratories for evolving alternative models of development.
- Three Biosphere Reserves from India are now included in the World Network of Biosphere Reserves namely; Sundarbans (West Bengal), Gulf of Mannar (Tamil Nadu) and Nilgiri (Kerala, Karnataka and Tamil Nadu).

Wetlands, Mangroves and Coral Reefs

- Management Action Plans for all the identified Wetlands are in various stages of implementation except Maharashtra and Bihar.
- Four new wetlands have been added to the national list namely; Hokersar, Mansar-Surinsar, Pangong Tsar from Jammu & Kashmir and East Kolkata from West Bengal.

- Thirteen new sites from India were declared as Ramsar sites of international importance in addition to existing six sites. Six sites are in the process of being designated as Ramsar sites and six more are being processed.
- Ramsar Conservation Award was bagged by India for ecological interventions in Chilka Lake through opening of Maggarmukh mouth in consultation with communities which yielded fruitful results in terms of higher income, higher fish yield, control of weeds and re-appearance of some prawn species which had earlier disappeared. This award was given to Chilka Development Authority and was received by Chief Executive of Chilka Development Authority in Valencia on 18th November, 2002.
- A Directory of Wetlands covering 2,107 natural and 65,253 man made wetlands, occupying an area of 4.1 million hectares and information on the status of 183 Wetlands of national/international importance was prepared.
- Twenty four wetlands, 33 mangrove and four coral reef areas in the country have been identified by the Ministry for conservation and management.
- The National Committee and Research Sub-Committee on Mangroves and Coral Reefs were reconstituted.
- Management Action Plans for all the identified Mangrove areas (except Maharashtra, Kerala and Pondicherry) were considered by the National Committee and financial assistance extended.
- A Database Network and Web Site on Mangroves has been established.
- Database Network and Website of Indian Coral Reef Monitoring Network (ICRMN) was updated and protocols for sharing of data have been finalized. Database CDs on all the identified Coral Reef areas have been prepared and are being launched on the Website of ICRMN for wider dissemination.
- Gulf of Mannar Coral Reef area in Tamil Nadu was included in the World List of Biosphere Reserves by UNESCO.

Bio-Diversity Conservation

- The NBSAP project envisages assessment and stocktaking of biodiversity-related information at state level including distribution of endemic and endangered species and site specific threats and pressures. All the 69 plans prepared are under finalization. The Technical and Policy Core Group has prepared the draft of the National Plan which has been circulated for comments.
- A final National Workshop under NBSAP was organized in December 2002, to discuss the respective SAPs and the first draft of the National Plan and sharing of experience.
- The Biological Diversity Bill has been passed by the Lok Sabha on 2nd December and by the Rajya Sabha on 11th December, 2002. The main intent of the legislation is to protect India's rich biodiversity and associated knowledge against their use by foreign individuals and organizations without sharing the benefits arising out of such use, and to check biopiracy.

- The Biosafety Protocol now has 43 parties. India ratified the protocol on 17-1-2003.

- The Genetic Engineering Approval Committee (GEAC) accorded approval for commercial release of three Bt cotton varieties developed by Maharashtra Hybrid Seed Company (MAHYCO). The three approved hybrid varieties (Bt MECH-162, Bt MECH-184, Bt. MECH-12) are presently under cultivation in six states namely Maharashtra, Gujarat, Madhya Pradesh, Karnataka, Andhra Pradesh and Tamil Nadu.

All India Coordinated Project on Taxonomy (AICOPTAX)

- The Sixth meeting of the Steering Committee of AICOPTAX was held on February, 2002. It was decided that the Coordinating Units for Algae will be made effective and the proposed Chair on taxonomy will be offered soon. One Collaborating Unit for Pteridophytes and Gymnosperms was approved. The Committee decided that each Chair will carry an honorarium and suitable annual grant to facilitate travel and other expenses on the lines of Pitamber Pant Fellowship.

Medicinal Plants

- Medicinal plants have been identified as one of the thrust areas by the Ministry and different programmes encompassing activities in the area of medicinal plants were continued to carry out conservation of medicinal plants found in the forests and protected areas as well as cultivation of these plants in the degraded forest areas.

- Medicinal Plants Conservation Areas (MPCA) in the southern States of Kerala, Tamil Nadu and Karnataka and Medicinal Plants Conservation Network (MPCN) established for *in-situ* conservation earlier continued their activities during the year.

Assistance to Botanic Gardens

- The Ministry has constituted an Expert Group to examine and recommend proposals received under the scheme on Assistance to Botanic Gardens to augment *ex-situ* conservation of rare endemic plants. One time financial assistance is provided under the scheme.

- During the year, 7 institutions were provided financial assistance for improvement of infrastructural facilities in their botanical gardens.

- The project for establishment of a National Botanic Garden at NOIDA-Delhi with an outlay of Rs. 3,777.85 lakhs has been approved for implementation in the Tenth Five Year Plan.

Forest Conservation

- Out of 133 proposals (forest-land involved more than 20 ha.) received from all the States/UTs during the year seeking approval under the Forest (Conservation) Act, 1980 for diversion of forest land for other purposes, 30 proposals were decided and the remaining are under process or pending for want of information from State Governments.

- A total number of 707 projects were approved upto 20 ha. under the Forest (Conservation) Act, 1980 by the six Regional Offices of the Ministry located at Bangalore, Bhopal, Bhubaneswar, Lucknow, Shillong and Chandigarh.
- A study has been carried out by the Institute of Economic Growth, Delhi on the contribution of forestry sector to GDP in India. As per the study report the gross value of goods and services provided by the forestry sector is estimated at Rs.26,329.8 crores, with the range varying from a minimum of Rs.19,846.35 crores to a maximum of Rs. 47,841.69 crores.
- After incorporating the comments and suggestions, the final draft of the amendments to the Indian Forest Act, 1927 is now under preparation for placing before the Cabinet for approval.
- Integrated Forest Protection Scheme has been formulated by the merger of the schemes 'Forest Fire Control and Management' and 'Bridging of Infrastructure Gaps in the Forestry Sector in the North Eastern Region and Sikkim'. The 100% centrally sponsored scheme is now being extended to all the States and UTs during the 10th Five Year Plan.
- The concept of Joint Forest Management (JFM) was initiated earlier to involve the Village Communities in the development and protection of degraded forests on the basis of their taking a share of the usufruct from such areas. Twenty seven States have so far issued resolution on JFM. As on 1.12.2002, 14.26 million ha. of forest lands in the country are being managed and protected by 64000 JFM Committees.

Wildlife Conservation

- During the year, ban on export of 29 species of plant, plant-portions and their derivatives obtained from wild, was continued. Export of six species of exotic birds was also continued subject to pre-shipment inspection and provision under CITES wherever required.
- The Wild Life (Protection) Amendment Bill, 2002 was passed by the Parliament during the Winter Session, 2002. The Bill proposes to enhance penalties for violation of the provisions of the Act. It also proposes to create two new categories of Protected Areas, viz., 'Conservation Reserve' and 'Community Reserve'.
- A number of species reported as endangered were provided highest protection by including them in the Schedule I and part II of Schedule II of the Wild Life (Protection) Act, 1972.
- The Standing Committee of the Indian Board of Wildlife (IBWL) met three times to discuss important aspects relating to wild life. The IBWL Apex Advisory Committee is headed by the Hon'ble Prime Minister.
- In order to monitor the implementation of the National Wild Life Action Plan (2002-2016), a Monitoring Committee has been set up. The first meeting was convened on 16.1.2003.
- There are 89 National Parks and 500 wildlife sanctuaries in the country covering an area of 1.56 lakhs square Km. Financial assistance for development of National Parks and Sanctuaries was provided to 210 National Parks and Sanctuaries in

25 States (including North-Eastern States) and Union Territories in the country during the year.

- Twenty seven Tiger Reserves have so far been set up in various States covering an area of about 37,761 Sq.Km. in the country. An amount of Rs. 7.10 crores was released to the 4 new Tiger Reserves in the states of Karnataka, Maharashtra, Arunachal Pradesh-Assam and Madhya Pradesh.
- The India Eco-development Project is being implemented in seven Protected Areas namely; Buxa, Palamau, Nagarhole, Periyar, Pench, Ranthambore, Tiger Reserves and Gir National Park to conserve biodiversity through eco-development.
- Fourteen elephant reserves have been set up during the year (till December 2002) which include Singhbhum (Jharkhand); Garo Hills (Meghalaya); Mayurbhanj, Mahanadi and Sambalpur (Orissa); Eastern Dooars and Mayurjharna (West Bengal); Wayanad, Nilambur, Anamudy and Periyar (Kerala); Kameng (Arunachal Pradesh); Mysore (Karnataka) and Shiwalik (Uttaranchal).
- Renewal of recognition to eight large zoos, four medium zoos and two small zoos, which were evaluated, have been granted. Ten mini zoos were also evaluated during this year.
- An interactive website of the Central Zoo Authority (www.cza.nic.in) has been hosted. The complete inventory of animals of all the large, medium and small zoos are in the website. Zoos can now access their respective inventory and enter death, birth and other details directly.
- The National Zoological Park, New Delhi, at present, houses about 1257 animals of 130 species. During the year 1 : 0 Himalayan Black Bear, 1 : 1 Black Swan, 2 : 2 Ring Necked Pheasants, 1 : 2 Japanese Green Pheasants, 2 : 2 Spectacles Caiman, 2 : 2 Siamese Crocodile and 1 : 1 Aligators were received in exchange.

Animal Welfare

- The Animal Welfare Division became a part of the Ministry of Environment and Forests in the month of July 2002. Earlier the Division was under Ministry of Statistics and Programme Implementation. The mandate of Animal Welfare Division is to prevent the infliction of unnecessary pain or suffering on animals.
- Under the Prevention of Cruelty to Animals Act, 1960, a new set of rules namely, Animal Birth Control (Dogs) Rule, 2001 was notified on 24th December, 2002
- Under the scheme for Animal Birth Control and Immunization of Stray Dogs, during the year, an amount of Rs.1.30 crore was released to 49 organisations in various states.
- The first National Seminar on “The Status of Animal Houses in India” was organized in June, 2002. As an outcome of the Seminar, three Sub-Committees namely; Committee on Alternatives and Harmonisation with Global Guidelines on Alternatives, Committee on Norms of Rehabilitation of Animals used in Experimentation and Committee on Accreditation of Laboratories were formed.

- An Institute is being set up at Ballabhgarh, District, Faridabad, Haryana for providing various Graduate and Post Graduate courses on animal welfare. The Institute would also offer intensive specialized Diplomas in specific streams.

Environmental Impact Assessment

- A total number of 292 projects were appraised for environmental and site clearance during the year. Out of these, 158 projects were cleared and 87 were either rejected or closed. 147 projects were pending at the end of the year.
- Expert Committees constituted for different sectors under the provisions of Environmental Impact Assessment (EIA) Notification, were reconstituted for appraisal of projects received for environmental clearance.
- During the year, the EIA Notification has been further amended vide Gazette Notification no. S.O. 632 (E) dated 13 June, 2002. By this amendment, the investment limit for major activities listed under Schedule-I of the Notification has been raised from Rs. 50 crores to Rs. 100 crores. Further, EIA preparation has been made mandatory prior to public hearing process. In addition, for projects such as pipelines and highways, public hearing has been mandated in each district through which the pipeline/highway passes.
- Draft Notification S.O 1043 (E) dated 26 September, 2002 has been notified inviting comments from the public regarding simplification of procedures for certain category of offshore exploration projects as well as inclusion of certain new sectors like dye intermediates, pesticide and bulk drug intermediates.
- Ministry has carried out a number of amendments to streamline the original CRZ Notification, 1991 and promote sustainable development of coasts. During the year, following three amendments to the Notification have been issued:
 - Notification No. S.O. 550 (E) dated 21st May, 2002.
 - Notification No. S.O. 1100(E) dated 19th October, 2002.
 - Notification No. S.O. 52(E) dated 16 January, 2003
- A Notification No. S.O. 113(E) dated 4th February, 2003 declaring Matheran and its surroundings as Eco-Sensitive Zone has been issued.
- During the year, the Ministry continued its programme of monitoring implementation of environmental mitigation measures stipulated while according environmental clearance to various development projects. About 600 projects have been monitored in the year 2002 through six Regional Offices of the Ministry and wherever compliance was not satisfactory, action has been taken including issuing of show-cause notices followed by directions.

Prevention and Control of Pollution

- So far 115 waste minimization circles have been established throughout the country and a large number of Organizations and Institutions have been trained in waste minimization activities. Implementation of this project has helped in identification of more than 200 options for resource and energy conservation in various small scale industries.

- LCA studies have been initiated in various sectors namely; Steel, Pulp and Paper and Thermal Power. The study relating to the Thermal Power Sector has been completed during the year while the study in the Pulp and Paper Sector is progressing as per schedule.
- A study was undertaken to develop and implement Industrial Ecology Opportunities in Ankleshwar and Nandesari Industrial Estates of Gujarat. The study has examined technologies used by industries in this region and suggested possible approach to achieve eco-efficiency within the industrial estates to reuse and recycle wastes and effluents generated from different industrial units.
- The Planning Commission approved Rs.600 crores on a 50:50 cost sharing basis between Central and the State Government to implement various schemes in the Taj Trapezium Zone in the context of environmental protection of the Taj Mahal. In the first phase during the ninth Five Year Plan, 10 projects were approved and are being implemented by the State Government of Uttar Pradesh.
- Notification S.O. 1088(E) was issued on 11th October, 2002 to permit the use of loudspeakers or public address system during night hours (between 10.00 p.m. to 12.00 midnight) on or during any cultural or religious festival for a limited duration not exceeding 15 days in all during a calendar year.
- Noise limits for vehicles at manufacturing stage were notified vide GSR 7(E) on 25th September, 2000 which would be effective from 1st January, 2003. To make these standards commensurate with the emission standards for vehicles, the notified rules have been revised and are phased out in two stages. In the first phase, two wheelers, three wheelers, and passenger cars would comply with the notified norms from 1st January, 2003. A relaxation of 3dB(A) has been given to passenger or commercial vehicles of various categories and would become effective from 1st July, 2003. In the second phase, noise limits for vehicles at manufacturing stage would be applicable on and from 1st April, 2005 which would be at par with EC norms and based on engine power for various categories of vehicles.
- Emission standards for new diesel generator sets upto 800 KW and more than 800 KW were notified on 17th May, 2002 vide GSR 371(E) and on 9th July, 2002 vide GSR 489(E).
- As on 31.12.2002, out of 1,551 highly polluting industries, 1,351 industries have provided the necessary pollution control facilities, 178 industries have been closed down and remaining 22 industries are defaulting in the 17 categories of identified highly polluting industries. Legal actions under the Environment (Protection) Act, 1986 have been taken for all the defaulting units.
- During the year, work has been taken up in 73 districts covering 21 States for preparing District-wise Zoning Atlas for siting of industries.
- As on 30-09-2002, out of 851 grossly polluting industries discharging their effluents directly into rivers and lakes, 608 industries have installed pollution control systems to comply with the prescribed standards, 238 industries have been closed and 5 industries have to install the necessary pollution control systems to comply with the present standards.
- The Central Pollution Control Board (CPCB) has established a National Ambient Air Quality Monitoring (NAMP) network comprising of 295 stations in 98

cities / towns under the Air (Prevention & Control of Pollution) Act, 1981 to collect, compile and disseminate information on air quality.

- The CPCB continued the monitoring of water quality. It is observed that pollution load is on the increase and water bodies are further being polluted.

- A project has been undertaken by Central Pollution Control Board for assessment of efficiency of autoclaves used in hospital waste treatment based on standardized spore testing methodology.

Hazardous Substances Management

- Implementation of the Manufacture, Storage and Import of hazardous Chemicals Rule 1989 and the Chemicals Accidents (Emergency Planning Preparedness and Response) Rules, 1996 was constantly pursued and monitored. There are 1460 major accident hazard Units in 19 States in the country and 1395 on-site plans and 118 off-site plans have been prepared. All the States except Bihar & J&K have constituted State Level Crisis Groups.

- A country report on “Status of Emergency Preparedness and Response in MAH Districts in the Country” has been prepared.

- A number of steps were taken during the year to ensure effective implementation of the Batteries (Management & Handling) Rules 2001 notified to regulate the collection, channelisation and recycling as well as import of used lead acid batteries in the country.

- An Inquiry Committee was constituted during the year on the directions of the Hon’ble Supreme Court to verify the inventory of hazardous wastes such as waste oil, lead acid batteries and other non-ferrous metal wastes lying in various ports and Inland Container Depots of the country. The Committee has submitted the final report and findings have been submitted to the Supreme Court.

- Under the scheme “Registration of recyclers/reprocessors of wastes as actual users having environmentally sound management facilities”, 234 units were granted registration. Registration of 53 were renewed.

- Committee on Plastic Waste Disposal constituted under the Chairmanship of Shri Ranganath Mishra, former Chief Justice of the Hon’ble Supreme Court has submitted its report containing recommendations for the management of plastic wastes in the country.

- Draft amendments to the Recycled Plastics Manufacture and Usage Rules, 1999 were issued during the year.

- Draft amendments were also issued to the Fly ash Notification, 1999.

- During the year, guidelines for use of fly ash have been formulated and circulated to the State Governments.

- The Hazardous Wastes (Management and Handling) Amendment Rules, 2002 was notified.

- Draft amendments Recycled Plastics Manufacture and Usage Rules, 1999 were issued during the year.

- Draft amendments to the Flyash Notification 1999 were also issued.

- The Ministry participated in the 20th session of the Technical Working Group and the Legal Working Group, 5th and 6th meetings of the Expanded Bureau and the 6th meeting of the Conference of Parties to the Basel Convention during the year.

Regeneration and Development

National River Conservation Directorate

- Under the Ganga Action Plan (Main Stem) (GAP-II, MS), pollution abatement works have been taken up in 59 towns, of which 12 are in U.P., 10 in Uttaranchal, 14 in Bihar and 23 in West Bengal. Out of 142 schemes of pollution abatement sanctioned under the Plan, 13 schemes have been completed so far. After launching the NRCP, it was decided to merge the GAP-Phase-II with NRCP and a notification in this regard has been issued.

- The Yamuna Action Plan at present covers pollution abatement works in 21 towns at an approved cost of Rs. 509.45 crores of which Rs. 466.63 crores has been incurred so far. Out of the 141 schemes of pollution abatement sanctioned under the plan, 117 schemes have been completed and the remaining are at different stages of completion.

- Under Damodar Action Plan, pollution abatement works are being taken up in 12 towns, of which eight are in Jharkhand and four in West Bengal. So far 11 schemes have been sanctioned

- Consequent to the introduction of fecal coliform standards, efforts are being made to introduce new appropriate technologies which meet the new bacterial standards for locations where adequate land is not available for construction of waste stabilization ponds.

- A series of measures have been undertaken to improve the performance of NRCP, which includes:

- releases of money directly to the implementing agencies, minimize slippage on account of delays in land acquisition, notices to the local bodies which are responsible for non-operation of assets in Bihar and U.P, and introduction of a new criteria for examining the project proposals where the financial status of the local bodies of each Action Plan town is being evaluated.

- A proposal for conservation of Dal lake was approved in principle under the National Lake Conservation Plan.

National Afforestation and Eco-development Board

- Under the afforestation programme with people's involvement for the sustainable management of the country's forests, two hundred and twenty seven projects in 23 States have been operationalised for treating an area of 3.75 lakh ha.

- The Ministry of Environment and Forest is the National Coordinating Body for implementation of UNCCD in India. During 2002-03 a three day technical workshop on formulation of Field projects was organized at New Delhi from 11-13 December, 2002. All stake holders in the country as well as external partners such as

UNCCD Secretariat, Global Mechanism and other Bilateral and Multilateral Donor Agencies participated.

- World Day to Combat Desertification was Celebrated on June 17, 2002 throughout the country with the theme "Land Degradation".
- The NAEB has seven Regional Centres (RCs) located in Universities/National level Institutions. During the year, the RCs conducted a number of training programmes on Joint Forest Management (JFM), interactive workshop on forestry programmes, micro-planning exercise.

Research

Environmental Research

- During the year, under the Research and Development Schemes, 35 new research projects were initiated, 18 studies were completed and 119 on-going projects were reviewed and monitored.
- The Regional Research Laboratory, Jorhat has prepared common masonry brick, pazzolona, lightweight aggregate utilizing the hydro-carbon in the sludge of Lakwa oil field effluent in Assam, as fuel to solve disposal problem associated with the sludge.
- A study on the Impact of Indira Gandhi Canal Irrigation on the Status of Mammals in Western Rajasthan was undertaken to assess the impact of changes in landuse pattern on relative abundance of mammals in the Indira Gandhi Canal Area. The study has revealed that one of the causative agent of impact on the biodiversity in this deserts region is sand dune transformation from grassland to irrigated cropland.
- The biodiversity assessment surveys in Kumaon showed that the Askot and Binsar Protected Areas are affording protection to species such as kaleej, koklass, sambar barking deer and goral only. These species are commonly distributed throughout Himlayas and are not threatened.
- A taxonomic study on members of Agaricales of Nilgiris Biosphere Region in Tamil Nadu State was undertaken. A total number of 130 species in 42 genera belonging to 12 families have been described. Out of the 130 species, 79 species were new addition to the Indian Agaric Flora, 21 new taxa have been proposed and 30 species although already reported from different parts of India but have been reported for the first time from Nilgiri region under this study.

Forestry Research

- All the eight Research Institutes of the ICFRE, located at Dehradun, Coimbatore, Bangalore, Jabalpur, Jorhat, Jodhpur, Shimla, Ranchi, Chindwara and Allahabad continued the various research activities in the forestry related areas and evolved several new techniques for a number of species for their conservation, propagation and promotion.
- Some of the salient research achievements during the year are development of a technique to produce tamarind polysaccharide, categorisation of different clones of Eucalyptus, macro propagation of teak through clonal technology, DNA finger printing of clonal plants, etc.

- The Indian Plywood Industries Research & Training Institute, Bangalore, continued research under three categories, wood and wood composite, composites from non-wood renewable fibres and enhancing of service life

Wildlife Research

- The Wildlife Institute of India (WII), Dehradun conducted research on the ecological, biological, socio-economic and managerial aspects of wildlife conservation in various parts of the country.
- Eight collaborative research projects are underway at various institutions and three MoUs were signed with Nature Conservation Foundation, Mysore, Centre for Cellular and Molecular Biology (CCMB) and Centre of Herpetology, Hyderabad for collaborative research during the year.

National Natural Resource Management System (NNRMS)

- The Standing Committee on Bio-resources and Environment (SC-B) constituted by the Planning Commission recommended 49 priority areas for taking up remote sensing based studies addressing key environmental and ecological issues such as management of forests, grassland, faunal resources, wetland, coastal areas, land degradation, river pollution, etc. Out of the 49 areas, 20 priority areas have been covered and 40 projects have so far been completed under the NNRMS Scheme and the remaining are in various stages of completion.

Education, Training and Information

Forestry Education, Training and Extension

- To strengthen the infrastructure for forestry faculties in the universities imparting forestry training at graduate/post graduate levels, assistance was provided to various universities by the ICFRE, Dehradun during the year. M.Sc. forestry curriculum was also prepared and circulated to all Indian Universities for implementation. Forestry statistics and quarterly ICFRE Newsletter were published.
- The Forest Research Institute undertook Doctoral and Post Doctoral Research Programmes in various disciplines of forestry at different institute of ICFRE. Post graduate diploma courses on Plantation Technology, Pulp and Paper Technology and Bio-diversity Conservation were also imparted during the year.
- The Indira Gandhi National Forest Academy (IGNFA), Dehradun, undertook training programmes for 25, 22 and 27 IFS probationers belonging to 2000, 2001 and 2002 courses respectively. The academy also conducted 10 courses on Advanced Forest Management for senior in-service officers during the year.
- For the first time the forest cover of the entire country has been assessed by employing digital interpretation of satellite data at 1:50,000 scale. In addition, FSI has assessed tree cover which are below 1 ha and which cannot be discerned through satellite imageries by using appropriate stratification, sampling and field inventory methods.
- During the year, SFR - 2001 and two reports, viz. Rural Wood Consumption Study in Haryana and Wood Consumption Study in Pune District of Maharashtra were published.

- The Directorate of Forest Education, Dehradun, organized various short-term courses, and in-service courses for State Forest Service Personnel, Range Forest Officers etc. during the year.
- The Indian Plywood Industries Research and Training Institute (IPIRTI) Bangalore, conducted the Post Graduate Diploma courses in “Mechanical Wood Industries Technology” and several short-term courses for the industry personnel for enhancing their skills and professional competence during the year. The institute also organized training courses for Senior Indian Forest Service Officers (IFS) during the year.
- So far 13 batches consisting of 353 students have completed the two year Post Graduate Diploma in Forestry Management (PGDFM). The 15th batch of PGDFM and the 9th batch of Post Masters course in Natural Resources Use and Management is underway.

Wildlife Education and Training

- The XXIII P.G Diploma Course for the officers from various States/Union Territories in the country as well as from other countries was completed by the Wildlife Institute of India (WII) Dehradun, during the year.
- The VIII M.Sc. course of two years duration on ‘Wildlife Science’, started in 2001 by WII was continued.
- A national workshop on ‘Evolving Sustainable Livestock Grazing Policy Guidelines’, Dehradun was organized by the Institute in collaboration with the International Centre for Integrated Mountain Development (ICIMOD), Nepal under the WII-IUCN Himal Programme.
- A number of training programmes on Wildlife Management, Biodiversity Conservation, Eco-tourism Planning and Management, Wetland Conservation and Management in the Protected Areas, etc., were also conducted by the WII during the year.

National Museum of Natural History (NMNH)

- Special in-house as well as outreach oriented programmes were regularly organized for the benefit of school children, college students, teachers and the general public.
- Special programmes to commemorate the 24th Foundation Day of NMNH and the World Environment Day were organized on 5th June’2002 during the year. Essay, painting competitions and open-house quiz competition for school children were also organized to celebrate the Earth Day.
- To coincide with the Eighth Conference of Parties (COP 8) on Climate Change held from 23rd October to 1st November, 2002 in Vigyan Bhawan, New Delhi, NMNH organized various competitions and activities related to Climate Change to create awareness among school children. Painting/Poster design, Essay, Quiz, Debate and Slogan writing competitions were conducted in different schools of Delhi.

- The Regional Museums of Natural History at Mysore, Bhopal and Bhubaneswar continued their activities on conservation and education amongst various target groups during the year.

Fellowships and Awards

- The Indira Gandhi Paryavaran Puraskar (IGPP) for the year 1998 & 1999 were finalized. Nominations for the year 2000, 2001 and 2002 are being processed.
- The Indira Priyadarshini Vriksha Mitra Awards (IPVM) are given on the basis of innovative efforts and outstanding work in afforestation, with special reference to wastelands development and involvement of the people. The Awards for the years 1999 and 2000 were conferred on 16th September 2002.
- The Pitambar Pant National Environment Fellowship Award for 2001 has been conferred on Prof. K.P. Singh, Banaras Hindu University, Varanasi. The Pitambar Pant National Environment Fellowship Award for 2002 has been conferred on Dr. Tapan Chakrabarti, NEERI, Nagpur.
- The B.P. Pal National Environment Fellowship Award for 2002 has been conferred on Dr. M. L. Saini, CSS Haryana Agricultural University, Hissar.

Environmental Education, Awareness and Training

Formal Environmental Education

- The pilot project for strengthening environmental concepts in school curriculum launched by the Ministry last year made good progress. The Global Learning and Observations to Benefit the Environment (GLOBE) Programme was also included in this project to provide hands-on learning experience to the students. This World Bank supported project has been designed in two phases. In the first phase, a critical content analysis was undertaken in order to know the status of environment content in the textbooks currently being used in the schools. Based on the findings of Phase-I, the second Phase of pilot implementation was designed.
- The Ministry has taken initiative to introduce environmental management in business schools. An expert group has been set up to work out a strategy for strengthening Environmental Education in Management / Business schools. As a first step in this direction, the Ministry has sponsored organisation of five workshops at various Management Institutions to sensitize the faculty of the Management Institutions towards environmental issues.

Non-formal Environment Education and Awareness

- The National Environment Awareness Campaign (NEAC) for 2002-2003 was organized by the Ministry with the major theme "Water-Elixir of Life". The action oriented component introduced last year was further strengthened.
- 8,061 organizations were provided financial assistance for organizing various awareness creating activities, for preparation and distribution of environment education resource material and for different action oriented activities on these issues. Diverse target groups ranging from students/youth/teachers to tribal, rural population, professionals etc. were covered under the campaign.

- The Ministry funds the Eco-clubs programme for mobilizing youth for environmental action. The student members of Eco-clubs constitute the National Green Corps (NGC). The program aims to establish Eco-clubs in atleast 100 schools in each district of the country thereby covering around 55,000 schools.
- To encourage individual and private organizations to produce documentaries and films on the subjects related to environment, conservation and wildlife, the Ministry continued support to a film festival on the theme of environment and wildlife named “Vatavaran-2002” being organised by the Centre for Media Studies, New Delhi.
- The Ministry sponsored a half hour weekly Environmental Magazine Programme called BHOOMI which is telecast on Doordarshan National Channel every Saturday.
- Fifty proposals were supported for financial assistance under Seminars/Symposia/Workshops/Conferences Scheme to provide a common forum to professionals, Scientists, Environmentalists, other groups of the society to share up-to-date knowledge on various technical issues related to environment during the year.

Centres of Excellence

- Two new Centres of Excellence namely; Madras School of Economics (MSE), Chennai on Environmental Economics and Foundation for Revitalization for Local Health Traditions (FRLHT), Bangalore on Medicinal Plants were established.
- Both CEE and CPREEC organized a number of training programmes on environmental education designed for specific target groups and exhibitions on environment to create awareness among the people for conservation of nature and natural resources. Seminars and conferences were also organised.
- During the year, Centre for Environment Education (CEE), Ahmedabad and the CPR Environmental Education Centre (CPREEC), Chennai served as platform for multi-stake holder consultation for documenting efforts on Sustainable Development.
- During the year, the Centre for Ecological Sciences, (CES), Bangalore carried out projects in the areas of animal behaviour, ecology and on role of juvenile hormones on wasps.
- The Centre for Mining Environment (CME), Dhanbad, continued its three-semester M.Tech. programme in Environmental Science & Engineering and provided environmental management inputs for academic activities of the Indian School of Mines, (ISM) Dhanbad. In addition the center also organized several training programmes on environmental management in mining areas, and conducted a number of R&D activities in its field during the year.
- The Salim Ali Centre for Ornithology and Natural History (SACON), Coimbatore focussed its research activities in ornithology on avian ecology and conservation of endangered birds during the year. Some of the salient findings of the studies concluded during the year are:
 - One of the major factors responsible for population decline in many species of birds is, increased use of pesticides.

- Species which are highly specialized like the *Salea horsfieldii* are worst affected by alterations in habitat.
- The Centre for Environmental Management of Degraded Eco-system (CEMDE), New Delhi, continued its activities of maintenance of bio-diversity in protected areas, ecological restoration of degraded lands and valuation of ecosystems services.
- The Tropical Botanic Garden and Research Institute (TBGRI), Tiruvananthapuram, the national centre for Centre of Excellence in *ex-situ* conservation of tropical plants, continued its activities of conservations by both *in-situ* & *ex-situ* methods and characterization of plant resources using R&D tools for sustainable utilization during the year.

Environmental Information

- During the year the focal point and the ENVIS centers focused on the development of home page and websites which was accomplished and laid stress on the strengthening of the information resource repositories.
- The ENVIS focal point responded to 363 queries and the ENVIS Centres over 19,694 Queries.
- The website of the Ministry, <http://envfor.nic.in>, developed by ENVIS Focal Point was updated continuously during the year.
- Updation of the SDNP website, URL: <http://sdnp.delhi.nic.in>, developed earlier under the programme, which provides information on 27 thematic areas was continued.
- The ENVIS Focal Point implements the World Bank assisted Environment Management Capacity Building Technical Assistance Project (EMCBTAP), which aims to strengthen the ENVIS scheme of the Ministry. Under this project Eighty ENVIS Nodes have been set up and are now functional.
- A new portal on Environmental Information System at <http://www.envis.nic.in> has been developed under the EMCBTAP Project. It would act as a mother portal for all the 80 operative ENVIS Centres and Nodes, and 16 other Nodes planned. The portal would act as a catalyst for inter nodal interaction and information on seven broad categories of subjects related to environment, under which the Centres and Nodes have been classified. The websites of the ENVIS Centres and Nodes can also be directly accessed from the home page of the portal.
- In the fourth Monitoring Committee Meeting held on 7-08-2002, 20 subject areas and institutions were approved for setting up of ENVIS Nodes through out the country under the project. 5 new subject areas namely: Cleaner Production and Technologies, Bio-medical Waste Management, Sustainable Development, Aviation and Environment, Population and Environment were also identified. Of the 20 areas identified 15 ENVIS-Nodes have been set up so far.
- Two Issues of “Paryavaran Abstracts”, reporting information on environmental research in Indian context was brought out during the year.

- Four issues of “ENVIRO NEWS”, a quarterly news letter was brought out by the division with the objective of disseminating information about various important policies, programmes, new Act and rules and amendment to existing legislations.
- All the 25 ENVIS Centres continued their activities relating to collection, collation, storage, retrieval and dissemination of information on the subject areas allocated to them during the year, besides strengthening the databases and responding to various national and international queries.

Legislation and Institutional Support

- The second phase of the Green Rating of the Industry project which was awarded to the Centre for Science and Environment (CSE), New Delhi has been completed. The objective of this project was to recognize good environmental performance as well as improvement in performance of the unit.
- The Urban Services Environmental Rating System (USERS) Project funded by UNDP aims to develop an analytical tool to measure the performance with respect to basic services delivery in local bodies. Delhi Jal Board, Municipal Corporation of Delhi, Kanpur Jal Sansthan and Kanpur Nagar Nigam of Delhi and Kanpur respectively were identified as pilot cities. Performance Measurement (PM) tool was developed through a set of performance measurement indicators that are benchmarked against set targets using the input-output efficiency outcome framework.
- A Citizens Charter for the Ministry has been prepared on the guidelines provided by Department of Administrative Reforms and Public Grievances (DARPG) and printed during the year. The Charter includes the Ministry’s vision, aims and objectives, details of business transacted, statement of services provided, details of clients, customers and grievance redress mechanisms, expectations from the client/citizen and the contact points in the Ministry for citizens grievances, etc. The Citizen’s Charter is now available in the Ministry’s website <http://envfor.nic.in>.

Women and Environment

- Women participation has been inbuilt in the Joint Forest Management Committees which are grassroots level institutions for conservation, protection and management of degraded forests.
- To recognise women’s contribution in the field of tree plantation, the Ministry has decided to institute a separate Vrikshamitra award for women from 2002. The award comprises a cash amount of Rupees one lakh.

International Cooperation

- The World Summit on Sustainable Development (WSSD) was held from 26th August – 4th September, 2002 at Johannesburg, South Africa. The Summit reviewed and appraised progress towards sustainable development and the commitments made ten years ago at Rio and forged a cohesive set of global partnerships to achieve comprehensive implementation of Agenda 21.
- The following documents were brought out by the Ministry:
 - Agenda 21 – An Assessment.

- Empowering People for Sustainable Development.
- Towards sustainability – Learning from the Past, Innovating for the Future.
- Sustainable Development – Learning and Perspective from India.
- Indian delegation to the WSSD was led by Hon'ble Minister of Environment & Forests. A major outcome of the Summit was adoption of Plan of Implementation and Johannesburg Declaration.
- The 22nd Session of Governing Council/Global Ministerial Environment Forum (GMEF) of UNEP was held from 3-7 February, 2003 at Nairobi, Kenya. The Session addressed the state of environment and contribution of UNEP to address various environmental challenges. The follow up actions arising from WSSD, and in the field of International Environmental Governance, linkages among and support to environment related conventions were also discussed.
- The Global Environment Cell (GEC) with UNDP assistance continued to provide technical and scientific inputs in the process of project formulation including those for Global Environment Facility (GEF) assistance. Twelve projects are under implementation of which one has been completed.
- Under India Canada Environment Facility (ICEF), 21 projects have been approved so far with a total outlay of Rs. 162.56 crores.
- A new plan scheme has been incorporated in the Tenth Five Year Plan for preparation of State of Environment (SoE) reports. The objective behind this scheme is to highlight the upstream and downstream linkages with environmental issues besides creating a baseline document.
- India ratified the Kyoto Protocol, which was adopted in 1997 committing the developed countries to reduce their emissions of greenhouse gases by an average of 5.2% during 2008-2012 with reference to 1990 level of emissions.
- India hosted the Eighth Conference of the Parties to the United Nations Framework Convention on Climate Change during the year from 23rd October to 1st November at Vigyan Bhawan New Delhi. Over 4300 delegates from all over the world attended the Conference, making it one of the biggest international event of its kind ever held in the country.
- Hon'ble Minister of Environment and Forests, was elected the President of the Conference of the Parties on 23rd October and led the negotiations at the Conference which successfully completed negotiations in several critical areas. Parties agreed on the rules and procedures for the Executive Board of the Clean Development Mechanism under Kyoto Protocol, as well as simplified procedures for small-scale projects. The Conference concluded guidelines for reporting and review under Kyoto Protocol after three years of intense negotiations. It adopted the New Delhi Work Programme for five years relating to education, training and public awareness and also set a time frame for operationalization of the Special Climate Change Fund by 2003 at the next Conference of the Parties next year. Most importantly, the Conference adopted the Delhi Ministerial Declaration, which firmly establishes the link between climate change and sustainable development and brings out importance of adaptation. The high point of the Conference was the Speech of the Hon'ble Prime

Minister in which he outlined the basic tenets of Indian perspective on the ongoing climate change negotiations.

- During the Year, six projects in the renewable energy sector were endorsed by India for implementation as Clean Development Mechanism Projects under the Kyoto Protocol. Implementation of these projects would help in attracting foreign investments in such projects in the country as well in accessing more efficient technologies.

- The International Day for the protection of ozone layer was celebrated at Bangalore on 16th September 2002. A set of newly designed posters, special covers, stickers and the fifth edition of a book entitled “The Montreal protocol, India’s Success Story” were released. An exhibition of ozone friendly products developed by industry with assistance from Montreal protocol Multilateral Fund was also organized. One of the companies exhibited refrigerators operating very efficiently with hydrocarbon as a refrigerant.

- During the year, seven investment projects, including terminal project for foam, commercial refrigeration and aerosol and three non-investment projects at a cost of US \$ 13,866,127 were approved by the Executive Committee of the Montreal Protocol Multilateral Fund.

- Four producers of CFCs, SRF Limited, Gujarat Fluorochemicals Limited, Navin Fluorine Industries and Chemplast Sanmar Limited, came together and signed a pledge reiterating their commitment to Montreal Protocol on phasing out Ozone Depleting Substances on May 2, 2002.

- Under the World Bank assisted Environment Management Capacity Building (EMCB) Project, the EIA sub-component, the mining sub-component, the ambient air quality monitoring sub-component, the development of standards sub-component, the environment law component, the environmental research sub-component were continued during the year. An ENVIS sub-component was also implemented to broaden the ambit of ENVIS by including various subject-areas, themes, local conditions, issues and to establish a nation-wide web-enabled network for environmental information.

Administration, Civil Construction, Plan Coordination and Budget

Administration

- The Ministry, including the National Afforestation & Eco-development Board and the National River Conservation Directorate at the Head Quarters presently has a strength of 1,083 under various groups.

- During the year, 911 parliament questions pertaining to various aspects of environment, forests and wildlife were dealt with by the Ministry. Out of which, 485 were in the Lok Sabha and 426 in the Rajya Sabha.

- In pursuance of the instructions issued by Department of Administrative Reforms & Public Grievances and provisions contained in the Manual of Office Procedure, a review of existing instructions contained in the compendium issued in

1996 was undertaken. On the basis of the feed back received from the various sections/divisions the existing compendium has been revised.

- Ministry is the “Cadre Controlling Authority” for the Indian Forest Service (IFS) an all India Service. This Service consists of 24 State Cadres including three Joint Cadres namely the Assam-Meghalaya, Manipur-Tripura and Arunachal Pradesh-Goa-Mizoram, Union Territories (AGMUT). Present authorized strength of the Service is 2756. During the year, Cadre Review meetings were conducted and completed revising the strength and composition of six States.

- A Grievances Cell has been constituted to ensure timely redressal of public grievances regarding environmental problems. Joint Secretary (Administration) has been nominated as Public Grievances Officer of the Ministry. During the year, 390 grievances were received from the general public, majority of which were related to unauthorised industries and mismanagement of civic amenities.

- A recreation club in the Ministry has been set up to encourage the employees of the Ministry to participate in social functions, sports, dramatic, library and such other activities. The functioning of the Recreation Club is monitored by the Management Committee, elected by the members of the club for a period of 2 years.

- “Hindi Fortnight” was celebrated during 16-30th September 2002. Competitions were held in Hindi Essay Writing, Quiz, Noting/Drafting, Hindi Typing and Dictation, etc. during this fortnight. In all these competitions, an amount of Rs. 92,300/- was given as awards to 136 officers/employees of the Ministry.

- The “Paryavaran” magazine in Hindi containing scientific and technical articles was brought out regularly by the Ministry during the year.

Civil Construction Unit

- The Civil Construction Unit (CCU) of the Ministry completed 16 civil construction activities in various wings of the Ministry, its attached and subordinate offices as well as autonomous organizations located in various parts of the country.

- The use of timber was stopped in civil construction of buildings and its substitutes are being used in all construction works in order to promote better environment. As a measure of conservation of electric energy, low-powered CFL fittings are being used in all common places and solar water heating system are used in hostels and office buildings at high altitudes.

Plan Coordination and Budget

- An amount of Rs. 3013.84 crores and Rs. 5945.00 crores was allocated to the Ministry for its Ninth Five Year Plan (1997-2002) and Tenth Five Year Plan (2002-2007) respectively.

- An outlay of Rs. 1010.00 crores including Animal Welfare has been allocated to the Ministry for various sectors in the Annual Plan 2002-2003 against Rs. 800.00 crores for 2001-2002.