

**CHAPTER II - A & B**

**REVIEW OF OVERALL PERFORMANCE**

**5. A REVIEW OF PERFORMANCE DURING 9TH FIVE YEAR PLAN AND GOALS SET FOR THE 10TH PLAN**

(I) The Ministry of Environment & Forests was allocated an outlay of Rs.3,013.84 crores for its 9th Plan 1997-2002. The actual expenditure in 1997-98 was Rs.406.70 crores, in 1998-99 it was Rs.497.77crores, in 1999-2000 Rs.539.90 crores, in 2000-2001, Rs.607.56 crores and in 2001-2002 it was Rs.893.55 crores, making a total of Rs.2945.48 crores. The sector-wise and year wise details of outlays/expenditure are as follows:

**Table-A: Sector wise/Year wise approved Outlays & Expenditure under 9th Plan.**

(Rs. in Crores)

Sector	9 <sup>th</sup> Plan Outlay Original	Outlay 1997- 98	Expdt. 97-98	Outlay 98-99	Expdt. 98-99	Outlay 99- 2000	Expdt. 99- 2000	Outlay 2000- 2001	Expdt. 2000- 2001	Outlay 2001- 2002	Expdt. 2001- 2002
1	2	3	4	5	6	7	8	9	10	11	12
<b>Environ- ment</b>	887.00	198.00	115.37	210.91	144.00	191.50	118.11	229.90	166.48	214.65	196.92
<b>NRCD</b>	766.84	109.00	99.44	191.70	107.48	200.00	157.24	210.05	121.58	190.95	297.37
<b>NAEB</b>	500.00	92.00	69.19	92.35	72.05	93.50	86.45	152.00	115.10	137.20	137.41
<b>Forests &amp; Wildlife</b>	860.00	144.70	122.70	209.13	174.24	215.00	178.10	258.05	204.40	257.20	261.85
<b>Total</b>	3013.84	543.70	406.70	704.09	497.77	700.00	539.90	850.00	607.56	900.00	893.55

**Table-B: Sector-wise Plan outlay & Expenditure in percentage under the IXth Plan**

(Rs. in Crores)

Sector	9 <sup>th</sup> Plan Outlay Original	Total Outlay Revised	Total Expdt.	Allocations (% increase over original outlay)	Expdt. (% increase over original outlay)
1	2	3	4	5	6
<b>Environment</b>	887.00	1044.96	740.88	17.80	- 16.47
<b>NRCD</b>	766.84	901.70	783.11	17.58	2.12

<b>NAEB</b>	500.00	567.05	480.20	13.41	- 3.96
<b>Forests &amp; Wildlife</b>	860.00	1084.08	941.29	26.05	9.45
<b>Total</b>	3013.84	3597.79	2945.48	19.37	- 2.27

**6. OUTLAY FOR THE NINTH PLAN AND ANNUAL PLANS 1997-98, 1998-99, 1999-2000, 2000-2001 and 2001-2002 AND APPROVED OUTLAY FOR TENTH PLAN.**

Overall Plan outlay/expenditure  
sector-wise

(Rs. in Crores)

Year	Environment	NRCD	Forests & Wildlife	NAEB	Total
9 <sup>th</sup> Plan approved outlay	887.00	766.84	860.00	500.00	3013.84
1997-98 Outlay	198.00	109.00	144.70	92.00	543.70
Expenditure	115.37	99.44	122.70	69.19	406.70
1998-99 Outlay	210.91	191.70	209.13	92.35	704.09
Expenditure	144.00	107.48	174.24	72.05	497.77
1999-2000 Outlay	191.50	200.00	215.00	9333.50	700.00
Expenditure	118.11	157.24	178.10	86.45	539.90
2000-2001 Outlay	229.90	210.05	258.05	152.00	850.00
Expenditure	166.48	121.58	204.40	115.10	607.56
2001-2002 Outlay	214.65	190.95	257.20	137.20	900.00
Expenditure	196.92	297.37	261.85	137.41	893.55

**SECTOR-WISE 10<sup>TH</sup> PLAN APPROVED OUTLAY:**

Year	Environment	NRCD	Forests & Wildlife	NAEB	Total
10 <sup>th</sup> Plan approved outlay	1200.00	1670.00	*1775.00	1300.00	5945.00
2002-2003 Outlay	**110.57	299.83	257.77	321.83	990.00
Expenditure	**129.12	295.31	249.16	274.45	948.04
2003-2004 Outlay	**218.43	294.76	266.81	230.00	1010.00
Expenditure***	164.84	244.59	228.04	250.46	887.93

\* Including Rs.175.00 Crores for Animal Welfare Division.

\*\* Including Secretariat and CCU

\*\*\* Figures are tentative as final accounts are under process.

7. The scheme wise details of outlay, expenditure, physical targets and achievements during the 9th Plan period in all the sectors as above, and the outlay and the goals set for 10th Plan are as below:

**8. INDIAN COUNCIL OF FORESTRY RESEARCH AND EDUCATION (ICFRE), DEHRADUN**

It is an autonomous body under the Ministry of Environment and Forests, Government of India. Full autonomy was accorded to ICFRE w.e.f. the 1<sup>st</sup> June 1991. Following are mandate of the council:-

- (i) To undertake, aid, promote and co-ordinate forestry education, research and its application.
- (ii) To act as a clearing-house for research and general information relating to Forest & Wildlife.
- (iii) To develop forestry extension programmes and propagates the same through mass media, audio-visual aids and extension machinery.
- (iv) To provide Consultancy services in the field of forestry education & training and in allied sciences.
- (v) To do other things considered necessary to attain the above objectives

It has 8 Institutes and 3 satellite Centres spread all over the country. Each Centre is attached to an Institute. At the ICFRE (HQ) there are 4 Directorate viz. Directorate of Administration, Directorate of Research, Directorate of Education & Directorate of Extension.

The thrust of forestry research was on reducing pressure on natural resources by increasing productivity through genetic and silvicultural improvement, and making available wood substitutes; eco-restoration through treatment of wasteland; conservation of forest ecosystems; tribal development and social forestry.

Some of the Major Research Projects of ICFRE are- development of eco-restoration model for iron ore mines of Bihar & Orissa, studies on vegetable dyes from *Parthenium hysterophorus*, *Ageratum conyzoides*, *Eupatorium* and *Azadirachta indica*, development of packing boxes from different bamboo species for horticultural produce, studies on nursery techniques/cultivation of important medicinal plants for socio-economic development of rural poor, role of forests in soil and water conservation genetic variability and selection in natural population of *Artocarpus* species, genetic transformation of Eucalyptus and casuarinas to enhance salinity tolerance, studies on the pest problems in forest nurseries and their management in arid and semi arid region, developing bio climatic indices for important species existing under agroforestry and departmental plantations for different agro climatic zones of Punjab.

Its achievements during IXth Plan and goals for the X Plan are as under:-

(Rs. in crores)					
No.	Programme	9 <sup>th</sup> Plan outlay	Expenditure	Physical Targets	Physical Achievements
1.	General Component	161.58	153.78		@
2.	Education & Training	10.00	9.15		
3.	Externally Aided Component	142.45	133.21		
4.	<b>North-East</b>	-	1.00		
	Total	314.03	297.14		

#### @ IX Plan Physical Targets & Achievements:

During IX plan period, a great deal of work has been done by different agencies engaged in forest and environment related studies in the country at centre and state levels. In the IX plan it was proposed that the institutions under the ICFRE would continue to work in their respective fields of specialisation. Additionally some new thrust areas for research and education, which were in conformity with the mandate of ICFRE, were proposed. The main activities of forestry research education and training were broadly classified as core programmes of ICFRE and focussed on conservation, restoration, agroforestry, utilisation of forest produce, genetic improvement of forestry species, Education and Extension awareness.

A total of 244 projects were completed during the IX plan. Eighteen new technologies were developed and six technologies were commercialised during the IX plan period. Seventeen patents were filed for different research outcomes. Some of the major achievements are-

A substitute of pectin from *Cassia tora* seed gum used in food industry was identified. A process for making this substitute was standardised and patent of the same was filed. Adhesives to be used in plywood industry were prepared from tannins of *Uncaria gambier* and *Acacia catechu*. The technology for the production of katha from *Uncaria gambier* was sold to industries. Seed collection, processing, storage, pre-treatment requirement, and germination methods were standardised for *Aegle marmelos*, *Syzygium cumini*, *Feronia elephanta* and *Strychnosmox- vomica*. Various agroforestry models like agri-silviculture, silvi-horticulture, and silvipasture were demonstrated in farmers field. Cost effective tissue culture protocol

has been developed for *Dendrocalamus strictus* which is very difficult to root by conventional method of vegetative propagation. Technology package for the rehabilitation of coal and iron mine overburdens have been developed and extended. Vegetative, propagation of *Gmelina arborea* through grafting has been standardized through rooting of single nodal cuttings. Complete tissue culture protocol has been developed for the in-vitro multiplication of Neem using explant for the multiplication of selected CPT for desired traits like high oil yield and high azadirachtin content. Standardized the micro-propagation protocols for *Eucalyptus hybrid (E.torelliana x E.citriodora)*, *Acacia hybrid (A. mangium x A. auriculiformis)* and *Bambusa arundinacea*. Suitable tree species for planting in the problem soils like mine dumps were identified and successfully raised in the quartz sand dumps after suitable bio-fertilizer inoculation. A database of 250 commercially exploitable medicinal plants was created. Cost benefit analysis of cultivating *Gloriosa superba*, *Mappia foetida* and other farm grown medicinal plants for farming community. Codification using card key features required for the creation of database for computer assisted timber identification have been completed for 52 genera belonging to six families. Standardised vegetative propagation method for Neem.

Under the planting stock Improvement Programme, ICFRE has established the Seed Production Areas (SPAs), Clonal Seed Orchards (CSOs), Seedling Seed Orchards (SSOs) and vegetative Multiplication Gardens (CMGs) of important species in the different states of the country, Under the Research Grant Fund (RGF) of FREEP two hundred and twenty five projects were sanctioned to Research Institute, Universities, State Forest Research Institutes, State Forest Departments, NGOs and Private Industries.

## II. B. OUTLAY FOR THE X<sup>th</sup> PLAN

(Rs. in crores)

Programme	X <sup>th</sup> Plan Outlay	Goals set for X <sup>th</sup> Plan	Achievements
<b>PLAN</b>			@@
<b><u>Forestry Research</u></b>			
1. General Component	196.50		
2. Education & Training	13.50		
3. Externally Aided Component	-		
<b>Total:-</b>	<b>210.00</b>		

### @@ Goals set for X Plan & Achievements :

X Plan goals are set for the thrust areas like watershed management, desert development, medicinal plants, coastal areas, bamboo's, genetic and agro forestry, biodiversity conservation, climatic change etc. The major themes of X Plan are -mitigation strategies in forestry sector to reduce and store the green house gases. Reforestation of degraded lands and problem soils (barren/mined/waste/water-logged/salt affected lands, etc). Conservation protection and sustainable development of existing forests to conserve biodiversity, multipurpose trees in farming systems. Improved utilisation, including improved recovery and processing of traditional wood. Non-wood forest products research to provide sustenance to the people and supply raw materials to a large number of forest based industries. Research on modern tools, equipment techniques and operations for afforestation, logging and extraction of forest produce. Protection of forest from entomological and pathological problems. Socio-economic research for motivating farmers/land owners to adopt tree farming in a manner similar to crop based farming. Agro forestry models with market information and bio-diversity assessment, conservation, monitoring and utilisation.

**9. INDIAN PLYWOOD INDUSTRIES RESEARCH & TRAINING INSTITUTE (IPIRTI), BANGALORE**

The Institute was established in 1961-62 as a Central Research Laboratory of the Indian Plywood Manufacturers' Research Association under the Co-operative Research Scheme of the Government of India from out of the funds provided by CSIR and voluntary contribution from the Plywood Industries (in pursuance of Ministry of Commerce and Industries Resolution No.CI-9 (5)/50 dated 22.9.1951). Since its inception the Institute is an autonomous body registered as a society under the Karnataka Society's Registration Act No. 16 of 1960 (Registration No. S-6/1961-62 dated 24<sup>th</sup> October 1961).

Consequent to the re-organization of the CSIR during 1977-78 (*vide* letter No. 5(15)/77-IED dated 21.3.1978 of the Secretary, DST and Notification No.CD-261/78 dated 6-4-1978), IPIRI was transferred to the Ministry of Industry, government of India. Subsequently, *vide* Government Order No.2/1/88-CI of the Ministry of Industries, Department of Industrial Development dated 30-4-1990, the Institute was transferred to the administrative control of Ministry of Environment and Forests (Government of India (GOI/Allocation of business rules (211 amendment) 1959) amended *vide* Cabinet Secretary notification dated 15.5.1990 The name of the Institute was changed to Indian Plywood Industries Research and Training Institute (IPIRTI) in the year 1992.

**MANDATE & VISION**

Broadly speaking the present mandate of the Institute includes:

Research on all aspects of production of sawn timber, manufacturing plywood and other allied engineered and reconstituted wood or lignocellulosic products, including improvement of materials, manufacturing processes, improvement of machines and appliances, conditions of work - time and motion studies - standardization of methods of work -conditioning of factories,

Inspection, certification and marking of all forest products viz. plywood, wood, timber, hardboard, particleboard, chipboard, furniture, glue-lam, compreg, doors, panel doors, block board, flush doors, veneered panels, veneers, laminated panels, composite boards, and the products of allied trade and industry,

Training in connection with forest product utilization for plywood industry and trade, and allied industries, imparting technical education and/or training at undergraduate, postgraduate, and/or any other level in technology of forests products and plastics, chemicals and paper laminates, and/or synthetic finishing, manufacturing machinery.

Contribution made by the institute since its inception in the areas of wood products/composites research and providing timely technological interventions and commercial interaction with the industry resulted in establishment of organized plywood and allied industry sector. The plywood industry in the country is technologically competent to produce high quality wood-based products to meet the varied domestic market needs and export.

The Institute's Vision is "Conservation of natural forests through development and adoption of efficient technologies for manufacturing wood alternates and panel products from renewable fibers, including plantation timbers & bamboo to meet the vital needs of our developing society".

Its achievements during IXth Plan and goals for the X Plan are as under:-

(Rs. in crores)

Programme	9th Plan Outlay	Expdt.	Physical Targets & Achievements	Xth Plan Outlay	Goals for Xth Plan
IPIRTI	4.50	4.35	*	10.00	**
Inputs to improve research capability in Labs., experimental					

plant at IPIRTI and Training Centre for Mechanical Wood Industries					
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\* There is a huge gap between supply and demand for wood, including the gap in respect of industrial wood raw material, which is of the order of 25-30 per cent of the demand. The gap decrease gradually when the benefits of the intensive effort now being made to grow trees through agro/social/farm forestry, other plantations and better management of natural forests through innovative practices starts flowing to the society. Wood is the most eco-friendly and can be produced in a sustainable manner to meet the increasing demand of growing population.

At IPIRTI, R & D activities have already been reoriented to achieve the twin goals of rationalizing the wood utilization of available wood resources through appropriate technological innovations and development of wood alternates from other natural/renewable fibers. To achieve these goals, various projects have been pursued under following headings.

## **A RESEARCH AND DEVELOPMENT**

### **1. RESEARCH**

Research projects pursued during the 9<sup>th</sup> Five Year Plan in various disciplines are as follows:

#### **1.1 Wood and Wood Composites**

Due to shortage of indigenous timbers from natural forests for plywood manufacture, particularly to produce high quality face veneers, studies were conducted to find out the suitability of imported species to enhance the acceptability of panels based sustainability on fast growing plantation wood grown in the country.

Study on the suitability of newer plantation grown timber species with constant improvement of technological innovations on efficient utilization is a continuing process including their evaluation for the production of higher grades of plywood.

Fast growing plantation timbers are very prone to warping thereby limiting wider acceptability of panels from such species. Tenderizing technique to overcome this problem has been worked out in laboratory scale experiments and industrial model is planned followed by its industrial adoption. Finger jointing of veneers for higher recovery from small girth logs is also under progress.

Revision of I.S. specifications in context of use of fast growing plantation wood are pursued to expand the scope of the plantation grown timbers. Development of Laminated Veneers Lumber (LVL) is another study showing promising results having higher potential for innovative applications as alternate to sawn wood products in joinery and carpentry products.

Development of glued laminated timber through finger jointing technique has been evolved for the efficient use of plantation wood for value added products is quite encouraging. All efforts are made to popularize this technique.

Development of innovative resins, adhesives, additives for resin adhesives to improve performance or to enlarge raw material base are being pursued from the beginning. Efforts are also being made to develop resin with lesser formaldehyde emission, which are becoming mandatory in other countries.

Attention is also being given in recent years to minimize the pollution of water/air etc. through proper treatment techniques.

## **1.2 Composites from Non-wood Lignocellulosic materials**

Development of bamboo based composites is a thrust area of R & D at the Institute and a number of innovative products have been developed, some of which are commercialized. They include:

- Development of Bamboo Mat Board (BMB)
- Bamboo Mat Veneer Composites (BMVC)
- Bamboo Mat Moulded Trays (BMMT)
- Bamboo Mat Corrugated Sheets (BMCS)
- Bamboo Laminates (BL)
- Bamboo Match sticks (BMS)

These products have been found to be environmentally friendly giving vast employment opportunities to rural poor particularly women.

Development of particle board from forest residues like Chir pine needles through innovative process developed at the Institute under a sponsored project and the use of particle boards in door making, an essential requirement of housing, is quite promising.

Development of moulded products from coir non-woven felt developed has enormous potential as alternate to house-hold moulded products as alternate to the ones based on plastics, metals, etc. Work has also been initiated to develop panel products based on coffee husk, Casuarina needles, etc.

## **1.3 Enhancement of service life of wood and wood based panel products**

R & D activity on this subject is being pursued to evaluate the performance of newer preservative compositions as well as agricultural pesticides evolved to preserve wood and wood based panels to enhance service life. This has become more relevant with extensive use of plantation wood which are generally non-durable.

### **B. Testing and Standardization**

The Institute is continuing to play significant role in evaluating standards, specification for wood and wood products. Product testing is another important activity aiming at production of quality products by the industry and also consumers including government and non-government organizations in checking the quality of wood products. This activity has also been initiated in a limited way at Field station, Kolkata for the purpose.

Research Project has been initiated to develop Non-Destructive Test methods (NDT) for evaluating strength properties of wood/panel products. Infrastructural facilities for lab. scale experiments have been established. Further efforts are in progress to develop industrial model suitable to be adopted by the industry to check the quality on line to ensure production of quality products.

### **C. Extension**

The effective dissemination of research findings to the industry and their successful adoption and to benefit the members at large through the industry is one of the major activities from its inception. This is evident from the large number of industries being the members of the IPIRTI Society.

## **2 Training and Education**

Training is an important goal to facilitate efficient use of a resource through making available trained personnel at various levels in industries and enhancing the professional competence of the industrial workers through refresher courses in different disciplines. The Post-Graduate Diploma course in Mechanical Wood Industries organized by the Institute is attracting lot of young graduates in Science and Engineering who in turn will be resource persons to manage the industry.

Apart from Post-Graduate Diploma course, several short-term vocational training courses organized by the Institute are also made use by the industry in specialized fields of wood panel manufacture. Some of the local engineering students also find a place at IPIRTI to complete their project as a partial fulfillment of their degree in engineering. A number of training courses for senior IFS officers have also been organized in the past and 2 courses every year are planned in the years to come. During the year 2000-2001, training courses for ACFs. And ROs has been initiated.

### **\*\* Goals for Xth Plan**

IPIRTI is making all efforts to ensure the findings of laboratory results to commercialize the processes developed for efficient utilization of fast growing plantation timbers and renewable fibers for the manufacture of panel products as alternate to wood which is a continuing endeavor. Some of the laboratory findings with promising results will be further taken up for refinement of technologies suitable to make for commercial adoption. The main emphasis during the X Five Year Plan are in the field of wood and wood based composites, wood alternates for panel manufacture from bamboo and other renewable fibers including bamboo, Testing and standardization and training are as follows:

#### **Continuing Themes**

- a) Inputs to improve research capability in laboratories and experimental plant at Indian Plywood Industries Research and Training Institute.
- b) Training Centre for Mechanical Wood Industries.

#### **New Themes**

- a) Procurement of bamboo based panel products, product development, standardization of products, transfer of technologies, establishment of demonstration structures, training of growers, entrepreneurs, evaluation of standards and code of practice.
  - Establishment of bamboo processing machine for the development of bamboo laminates such as horizontal, vertical and cross laminates as an alternate to wood and wood products.
  - Establishment of Regional Training Centre for bamboo composites and products.
  - Establishment of pilot plant for the development of appropriate technology for particleboard aiming fuller utilization to bamboo and bamboo residues.
  - Development of overlays and overlaying techniques for particleboard for value addition.
  - Extension of Technologies already developed like BMB, BMMT, BMCS, Bamboo Housing etc.,
  - Development of innovative products using bamboo composites as alternate to wood and wood products as well as to establish demonstration structures.
- b) Improvement of sawing techniques for the manufacture of sawn timber for efficient utilization of plantation wood.
  - Development of innovative engineered products from plantation wood through finger jointing and laminating techniques.
  - Establishment of model sawmill in collaboration with the industry.
  - Creation of mobile demonstration and training facilities for improvement of saw mills in the country.
  - Human resource development programmes for farmers, entrepreneurs, technical personnel, consumers aiming self-reliance with requirements of timber and timber products.



01.	MDP/Courses & Seminars	13.00	14.11	75 MDPs & 19 Workshops	52 MDPs, 21 Workshops, 2 Seminars	20.00	90 MDPs & 20 Workshops, 15 Seminars	22MDPs and 8 Workshop during F.Y.02-03, 6 MDP and,7 Seminar/Workshop during F.Y.2003-04 upto Oct.03
02.	PGDFM/MRM			Every year 35 students in PGDFM,5 seats to SAARC students, 5 seats for foreign nationals/NR Is. 20 persons in MRM.	198 admission in PFM and 74 admission in MRM including SAARC & NRI sponsored students		Every year 45 students in PGDFM, 20 Admissions in MRM.	<b>42</b> ( F.Y. 2002-03), <b>43</b> ( F.Y.2003-04)Admissions in <b>PGDFM</b> , 18 ( 2002-03), <b>20</b> (2003-04)Admission in <b>MRM</b> .
03.	Ph.D./Research Studies & Consultancy			Ph.D. Programme - 10 Nos	6 registered, 4 registration awaited			5, student registered during F.Y. 2002-2003.
04.	Manpower (Salary & Wages)			Salary & Wages to supporting staff and also to fill up the vacant posts	Regular expenditure is being made		Salary & Wages to supporting staff and also to fill up the vacant posts.	Regular expenditure is being made.
05.	Construction and development			The construction works on hand and proposed works are to be undertaken during IXth Plan.	Maximum work has been completed		The construction works on hand and proposed works are to be undertaken during Xth Plan.	Regular work is being carried out.

06.	Library			New additions of books/journals and magazines are proposed for constant flow of information, 1000 books and 250 journals/periodicals	3083 Books and 1058 periodicals / journals has been purchased.		Procurement of 600 books and 200 journals every year.	books and 200 books & 200 3)
07.	Vehicles			Purchase of three vehicles	Nil		Purchase of three vehicles	Nil
08.	Bio-aesthetic Plan Exp.			To maintain and develop the surroundings of the campus for ecological balance and environment, the plantation and maintenance	Dense plantation has been done and campus has been maintained efficiently.		To maintain and develop the surroundings of the campus for ecological balance and environment , the plantation and maintenance	Plantation is being done and campus is being maintained efficiently.
09.	Computers			Acquisition of latest hardware / software purchase of 25 new computers, upgradation of another 25 computers	Geomedia (GIS) software, SPSS Package, and required computers and printers has been procured to strengthen computer centre		Acquisition of latest hardware / software and new computers, multimedia projector etc.	Some new computers and software purchased
10.	Stores(Furniture & Fixtures)			Stores and Equipments such as furniture fixtures are proposed for carrying on the activities including new ones	Minimum required purchase has been made		Stores and Equipments such as furniture fixtures are proposed for carrying on the activities including new ones	

11.	Office expenses Common expenses (including SIDA corpus fund & loss on sale of vehicles/copier & robbery)			Common expenditure includes security arrangements, electric supply, water charges, postage, telegrams, stationery, P.O.L. expenses board meetings, TA to staff, maintenance of building and machinery & equipment, telephone charges, staff welfare, audit fees etc.	Regular required expenditure is being made.		Common expenditure includes security arrangements, electric supply, water charges, postage, telegrams, stationery, P.O.L. expenses board meetings, TA to staff, maintenance of building and machinery & equipment, telephone charges, staff welfare, audit fees etc.	Regular required expenditure is being made.
12.	Information Dissemination			Information/Dissemination have been provided to enable to be evaluated through its publication. New Initiatives have been proposed such as NFDC,NFIC & NTFP	Quarterly news letter is being published		Information/dissemination have been provided to enable to be evaluated through its publication. New Initiatives have been proposed such as NFDC,NFIC & NTFP	Quarterly news letter is being published.

13.	National/ International linkages				Work is in progress. Institute has successfully established linkages/partnership with FAO/WBI/ World Bank, University of Toronto, ITTO, etc		National/International linkages have been proposed so that the institute will acquire the international acceptance	Work is in progress. Institute has successfully established linkages/partnership with FAO/WBI/ World Bank, University of Toronto, ITTO, etc
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## 11. STATE FOREST SERVICE AND RANGERS COLLEGES

The Directorate of Forest Education functions directly under the Ministry of Environment & Forests. The mandate of the Directorate is as follows:

- (i) To cater to the training needs of SFS Officers and Forest Rangers of States / Union territories in the country. Candidates sponsored by various public sector undertakings, industrial firms, other institutions, universities and foreign countries are also trained in these Institutions.
- (ii) To ensure 'standard and quality' training imparted to the forestry personnel.
- (iii) To help develop training 'capacity and facility' of desired standard, for various functionaries of forestry sector.
- (iv) To assist develop appropriate and relevant training contents and evaluation standards for forestry training at various levels.
- (iv) To generate awareness and sensitivity about forests and forest conservation amongst various stakeholders.
- (v) To assist the Centre and the States to develop training policy for efficient human resource management and development.
- (vi) To help States assess 'Training Needs' of forestry personnel for quality and standard training.

The achievements during the IXth Plan and goals for the Xth Plan and achievements so far are as under:

(Rs. in Crores)							
Programme	IXth Plan Outlay	Expdt.	Physical target	Physical Achievements	Xth Plan Outlay	Goals set for Xth Plan	Achievements
<b>SFS &amp; Rangers Colleges</b>	5.00+ 1.00*	4.28+ 0.57*			6.00+ 4.00*	-	-
Training of SFS officers		-	15 courses	7 courses		10 courses of 2 years duration (5 for newly recruited+ 5 senior batches will continue training in	3 courses (1 course completed & 2 courses are going on). Remaining goal will be achieved during the balance period of Xth Plan.

						2 <sup>nd</sup> year)	
Training of Forest Rangers		-	2 courses	5 courses		30 courses (15 for newly recruited+ 15 senior batches will continue training in 2 <sup>nd</sup> year)	10 courses (3 batches 2000-02 passed out on October, Nov., 2002 & Jan., 2003 respectively. 2 batches 2001-03 passed in Oct., & Nov., 2003. 2 batches of 2002-04 are continued in 2 <sup>nd</sup> year of training. 3 new batches of 2003-05 are schedule to start from Nov., 2004. Remaining goal will be achieved during the balance period of Xth Plan.
Refresher Courses for In-service SFS officers with 30-35 participants in each course.		-	55 courses	39 courses		45 courses	12 courses. Remaining goal will be achieved during the balance period of Xth Plan.
Courses on Computer Application in Forestry for In-service SFS officers with 30-35 participants in each course (Basic & Advance courses).		-	34 courses	43 courses		50 courses	15 courses. Remaining goal will be achieved during the balance period of Xth Plan.
Theme based Courses in Forestry for in-service SFS officers with 25-30 participants in each course.		-	5 courses	16 courses		40 courses	9 courses. Remaining goal will be achieved during the balance period of Xth Plan.
Two weeks "Trainers Training Course" with 20 participants each.		-	-	1 courses		8 courses	3 courses. Remaining goal will be achieved during the balance period of Xth Plan.

Two weeks "Refresher Course" for Range Officers with 30 participants in each course.						10 courses	4 courses. Remaining goal will be achieved during the balance period of Xth Plan.
Seminars and Workshops on different themes of Forestry at SFS Colleges, Dehradun, Burnihat, Coimbatore and EFRC, Kurseong		-	-	5		15	2 Remaining goal will be achieved during the balance period of Xth Plan.
Courses for sister and other organisations on request.	-	-	-	2 courses		-	3 courses. (No target is fixed for such courses. However, courses are conducted only on receipt of demand from the States/Organisations).
Promotion linked courses for ACFs			8 Course (4 course for ACF and 4 for Forest Rangers	Course curriculum prepared and sent to Ministry for approval.		15 courses	Course curriculum sent to Ministry for approval, which is awaited.

**\* Fund is at the disposal of Civil Construction Unit.**

## **12. IN-SERVICE TRAINING FOR IFS OFFICERS**

Ministry of Environment and Forests being nodal ministry in respect of the Indian Forest Service Officers sponsor one/two-week refresher training courses in the premier institutes all over the country on the pattern of DoPT guidelines as applicable to the other All India Service Officers, i.e., IAS/IPS etc.

The basic aim of the in-service training courses is to upgrade the managerial skills of the officers in the changing socio-economic scenario of the country as also expose them to the recent developments in the field of forestry and allied subjects to enable them to handle their present duties and future needs better. The training courses also provide a forum for the IFS officers serving in different regions of the country for sharing of experiences for efficient discharge of their responsibility.

In addition to above one/two-week compulsory training courses, it is proposed to sponsor six IFS officers each for undergoing course on "Advanced Professional Programme in Public Administration" at

IIPA-New Delhi and one year course on “Executive Post-graduate Diploma in Business Programme” at MDI, Gurgaon, Haryana during 2004-05

The achievements during the IXth Plan and goals for the Xth Plan and achievements so far are as under:

(Rs. in Crores)

Programme	IXth Plan Outlay	Exp.	Physical Target	Physical Achievement	Xth Plan Outlay	Goals set for Xth Plan	Achievements
In-service Training for IFS Officers	5.00	5.00	100%	100%	6.00	To sponsor one/two-week training courses for 1400 officers and sponsor 9/12 months advance training courses for about 12 IFS officers in the remaining period of the five year plan.	100%

### 13. INDIRA GANDHI NATIONAL FOREST ACADEMY (IGNFA), DEHRADUN

IGNFA was constituted in the year 1987 by renaming the erstwhile Indian Forest College vide Ministry of Environment and Forest order no.1-6/87-RT dated 25.5.87. This Academy is engaged in imparting induction training to IFS (Probationers) and in-service training of one week/two weeks to the in-service officers. Academy has also started Professional Skills Upgradation Training for the officers promoted to Indian Forest Service from SFS. Brief objectives/activities of the Academy are as under:

1. Conducting initial training of IFS probationers extended over a period of three years.
2. Organizing Professional Skills Upgradation training programme for officers of SFS promoted into IFS.
3. Conducting compulsory course for in service IFS officers at middle/senior level.
4. Organizing seminar/workshop on relevant Sectoral issues, case studies etc.
5. Conducting Advanced Forest Management Courses of in service courses for officers of 10 years, 7 years and 21 years of service.

(Rs. in Crores)

Programme	9th Plan	Expenditure	Physical Target	Achievement	10 <sup>th</sup> Plan	Goals set for X Plan
Training of IFS Probationers and officers	9.77	9.72	*	Targets set out for academy were fully achieved.	30.00	**

- \* 1. Training of IFS Probationers recruited from the year 1999 to 2002.  
 2. Compulsory courses for in service IFS officer.  
 3. Professional Skills Upgradation training programme  
 4. Advanced Forest Management Courses for officers of 10, 17 and 21 years of service.

- \*\* 1. To Impart training to IFS probationers and in service officers.  
 2. Modernisation of Academy  
 3. Upgradation of Computer Lab and installation of LAN.  
 4. Improvement in the Class rooms.

5. Upgradation of Reprographic unit.
6. Improvement of transport facility.
7. Hostel facilities will be improved

#### 14. FOREST SURVEY OF INDIA (FSI)

Forest Survey of India (FSI) was created in June, 1981 with the objective of monitoring periodically (ten years cycle) the changing situation of land and forest resources and present the data for national planning; conservation and management of environmental preservation and implementation of social forestry projects.

The goals and objectives of Forest Survey of India are given below:

- (1) To prepare a comprehensive State of the Forest Report (SFR) including National Vegetation Map (NVM) once in very two years. To prepare thematic maps through use of remote sensing data with minimum essential ground truth verification on a ten year cycle.
- (2) To collect, store and retrieve necessary forestry and forestry related data for national and state level planning and to create a computer based National Forest Inventory System (NBFIS).
- (3) To design methodologies relating to forest surveys and subsequent updating. This would include methodologies for:
  - (a) Vegetation mapping including thematic maps use of satellite imageries/aerial photographs.
  - (b) Ground truth verification
  - (c) Growing stock and volume assessment.
- (4) To undertake work in regard to preparation of forest inventory in selected States/UTs on agency basis until establishment of their own resources survey units.
- (5) To impart training in modern forest survey techniques to foresters at various levels of responsibility in the State/UTs/GOI.
- (6) To advise the State/UTs on design and development of regional NBFIS.
- (7) To support and oversee techniques/inventory undertaken by State/UTs Forest Departments.

The physical targets and achievements of FSI during the IXth Plan and the goals set for the Xth Plan are as under:

(Rs. in Crores)				
Programme	IXth Plan outlay	Expenditure	Xth Plan outlay	Physical Target/Achievements
Application of Remote Sensing Techniques in Survey of Forests	21.00	15.56	35.00	*

\* PHYSICAL TARGET AND ACHEIEVEMENTS

(Area in Km <sup>2</sup> )					
	YEAR				
	1997-98	1998-99	1999-2000	2000-2001	2001-2002

	Target	Achievements	Target	Achievements	Target	Achievements	Target	Achievements	Target	Achievements
Forest Inventory	25000	55794	25000	68001	40000	92447	40000	148400	300000	327397
Data Processing	25000	38969	25000	41451	40000	55729	40000	50655	300000	300619
thematic Mapping	260	240	260	263	50	51	50	51	50	55
Vegetation Mapping	181	183	182	182	181	182	182	182	181	182 full sheets 30 part sheets
Training	90	135	90	110	90	100	90	159	90	95
Special Study	4	4	4	4	-	2	2	-	-	4

#### Details of Physical Targets and Achievements for X<sup>th</sup> plan

Item	2002-03		2003-04	
	Target	Achievement	Target	Achievements (upto 31.10.2003)
Forest Inventory (in Sq.Kms.)	1,10,000	49,776	3,83,224	55,612
Data Processing (in Sq.Kms.)	3,50,000	3,27,618	1,10,000	22,384
Vegetation Mapping (No. of sheets)	181	181	182	29
Training (No. of persons)	90	114	90	92
Special studies No. of areas	L.S.	1	L.S.	-

Item	Targets - 2004-05	Targets - 2005-06	Targets - 2006-07
<b>Forest Cover Assessment</b>			
Data Processing	315* Scenes	0	315 Scenes
Data rectification	100* Scenes	215 Scenes	100 Scenes
Data Classification	50* Scenes	265 Scenes	50 Scenes
Ground verification	150** Scenes	200 Top Sheets	150 Scenes
Corrections, area calculation and map generation.	Top sheets		Top Sheets
<b>Forest Inventory</b>			
Inventory Data Collection	30* Districts		30 Districts
Data checking & entry	30 Districts	30 Districts	30 Districts
Data processing & Output	30 Districts		30 Districts
<b>Inventory of TOF (Urban)</b>			
Inventory Data Collection	30* Districts		30 Districts
Data checking & entry	30 Districts	30 Districts	30 Districts
Data processing & Output	30 Districts		30 Districts
<b>Inventory of TOP (Rural)</b>			
Procurement of PAN data	30* Districts		30* Districts
Image process & Sample gen.	30 Districts	30 Districts	30 Districts
Inventory Data Collection	30 Districts		30 Districts
Data checking and entry	30 Districts		30 Districts

Data processing & Output	30 Districts		30 Districts
<b>Resources Consumption Study</b>	30 Districts	30 Districts	30 Districts
<b>Training</b>	100 Persons	100 Persons	100 Persons

\* For the Period Covering 10<sup>th</sup> Cycle (Nov)

\*\* For the Period Covering 9<sup>th</sup> Cycle (Previous)

## 15. FOREST PROTECTION AND REGENERATION

During IXth Plan a Central Sector Scheme 'Modern Forest Fire Control Methods (MFFCM)' was being implemented under which funds were being provided to 11 States. The Scheme was reviewed and after EFC's approval in Nov 2000, the Scheme was extended to all the States and renamed as "Forest Fire Control & Management". The achievements in the IXth Plan and goals set for Xth Plan are given hereunder :

(Rs. in Crores)

Programme	IXth Plan Outlay	Exp.	Physical Target	Physical Achievements	X th Plan Outlay	Goals set for X th Plan
MFFCM FFCM	40.00	7.68 23.01	To assist the State Government for taking effective measures for prevention & control of Forest Fire  -do-	States were assisted for taking effective steps for prevention & control of forest fire		
Infrastructure Development	45.77	45.77	To assist all NE States & Sikkim for strengthening of infrastructure for forest protection			
Integrated Forests Protection Scheme					445.00	To assist all States & UTs for forest protection, Infrastructure Development & Work Plan & Survey & Demarcation

## 16. FOREST CONSERVATION

Under the Scheme "Strengthening of Forestry Division", six Regional Offices are implementing the Forest Conservation Act and monitoring of environmental clearances accorded by the Ministry under Environment Protection Act. The physical and financial achievements during the IXth Plan and goals set for Xth Plan are as under:-

(Rs. in Crores)  
(Physical in no.)

Programme	IXth Plan outlay	Expd.	Physical target	Physical Achievements	Xth Plan Outlay	Goals set for Xth Plan
Plan Scheme of Strengthening of Forestry Division for Monitoring six Regional Offices located at Bangalore, Bhopal, Bhubaneswar, Lucknow, Shillong and Chandigarh	20.00	26.45			34.00	
1. Monitoring of projects approved under FCA 1980 for compliance of stipulated conditions.			4750	4544		4750

2. Monitoring of project approved, under FPA, 1980 for compliance of stipulated conditions.			2000	3462		2000
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## 17. WILDLIFE

Ministry of Environment and Forests oversees implementation of Wildlife (Protection) Act, provides assistance to State Governments for development and protection of National Parks and Wildlife Sanctuaries and deals with matters relating to Wildlife Institute of India (WII), Dehradun and Convention on International Trade in Endangered Species (CITES).

## 18. STRENGTHENING OF WILDLIFE DIVISION AND CONSULTANCIES FOR SPECIAL TASKS

The Scheme was started from 1986 with activities like Strengthening of Wildlife Division and Regional Offices in Delhi, Mumbai, Calcutta and Chennai with adequate manpower and development of infrastructure for better enforcement of Wildlife (Protection) Act, CITES, etc. Three sub-regional offices at Guwahati, Amritsar (shifted from Pathankot) and Cochin were started. The achievement of the Scheme during the IXth Plan and Goals set for the Xth Plan are as under.

Four Regional Offices at the main trade centres of the country i.e. Delhi, Calcutta, Chennai and Mumbai were set up to control the illegal trade in wildlife during the IXth Plan. During the IX Plan the outlay was fixed at Rs. 18 cores out of which 5.5748 crores have been utilised under the scheme.

(Rs. in Crores)

Programme	9th Plan outlay	Exp.	Physical Target	Physical Achievement	Xth Plan Outlay	Goals set for Xth Plan
Strengthening of Wildlife Division and Consultancies for special tasks	18.00	5.57	No physical target can be taken as Regional Offices salary, office expenditure and domestic travel expenditure are being paid under this scheme. Funds are also provide for consultancies for special tasks as and when there is a proposal for the same	---	10.00	1.Strengthening of Central Unit, Regional and Sub Regional Offices 2.Consultancy for special tasks

## 19. NATIONAL PARKS AND SANCTUARIES

The objective of this scheme is to provide financial assistance to the States and UTs to develop National Parks and Sanctuaries and encourage them to extend the Protected Area Network. The scheme provides financial assistance for habitat development for Wildlife and biodiversity conservation and to create infrastructural facilities for better protection and management. Hundred percent assistance is provided under this scheme for identified items of non-recurring expenditure in the case of national parks. Fifty percent assistance is also provided in respect of certain identified recurring items of expenditure. For Protected Areas (National Parks and Wildlife Sanctuaries both) in high altitude region, deserts or ocean eco

system with identified endangered species, both recurring and non recurring items of work are provided financial support.

The total allocation under this scheme during the IX Plan was 70 crores and the EFC was approved for Rs. 70.00 crores. Out of the existing 589 National Parks and Sanctuaries in the country, only about 220 protected areas were funded under this scheme.

The achievement during the 9<sup>th</sup> Plan and goals set for the 10<sup>th</sup> Plan are as under:

(Rs. in Crores)

Programme	9th Plan outlay	Exp.	Physical Target	Physical Achievement	Xth Plan Outlay	Goals set for Xth Plan	Achievements
Assistance for Development of National Parks/ Sanctuaries	70.00	82.67	250(National Parks & Sanctuaries)	220 protected areas	350.00	350.00	21.24

## 20. WILDLIFE INSTITUTE OF INDIA (WII)

WII was established in 1982 under the erstwhile Ministry of Agriculture and Co-operation and subsequently brought under the Ministry of Environment and Forests. The main mandate of the Institute is to impart training to government and non-government personnel to carry out research and advise on matters of conservation and management of wildlife resources. In April 1986, autonomous status was granted to this Institute for developing its professional role in bio-diversity conservation for South and South East Asian Region.

The Institute conducts three principal courses viz., the 3 months' certificate, the 9<sup>th</sup> months' diploma and 2 years M.Sc. in Wildlife Sciences on a regular basis.

During 9<sup>th</sup> Plan about 1646 students/Forest Officers/others were trained by WII in different courses conducted by it. Its achievements during 9<sup>th</sup> Plan and goals set for 10<sup>th</sup> Plan are given below.

(Rs. in Crores)

Programme	9 <sup>th</sup> Plan Outlay	Expenditure	Physical Target	Physical achievement	X Plan Outlay	Goal set for X Plan	Achievement
WII	25.00	25.00	-	-	50.00	-	-
M.Sc. Courses in Wildlife Science			30	30		40	
PG Diploma in Wildlife Management			150	150		150	
Certificate Course in Wildlife Management			150	116		150	
Field Workshop/ Short Course			1350	1350		1500	

## 21. PROJECT TIGER (PT)

The Directorate Project Tiger deals with the funding to State Governments having Tiger Reserves Areas under the Centrally Sponsored Scheme viz. Project Tiger, which during the Xth Plan is an earlier

CSSs viz. umbrella scheme incorporating components of the 'Eco-Development around National Parks and Sanctuaries including Tiger Reserves' and 'Beneficiary Oriented Tribal Development'. The World bank aided India Eco-Development Project now being implemented in 6 PAs on pilot basis, is also coordinated and monitored by the Project Tiger Division, including funding to the concerned State Governments. Its achievements during 9<sup>th</sup> Plan and goals set for 10<sup>th</sup> Plan are given below.

(Rs. in Crores)

Programme	9 <sup>th</sup> Plan Outlay	Expdt.	Physical Targets	Achievement	10 <sup>th</sup> Plan Outlay	Expdt.	Physical Targets
PROJECT TIGER	75.00	80.86 (including Rs. 6.76 crores for NE states)	*	**	150.00	45.83 [including Rs. 3.88 crores for NE states (till 23.12.03)]	To assist Tiger Reserves for conservation and protection of tigers, habitat improvement, forest protection, construction of staff quarters, office building, wireless network, etc.

\* The target was to continue to provide Central Assistance to the Tiger Reserves as per the Scheme approved, subject to the availability of budgetary provisions. During the 9<sup>th</sup> Plan period, it was also proposed to increase the area to 40,000 sq.km by creating 6 more Tiger Reserves. Additional activities, namely sanction of Project Allowance to Project Tiger Staff in the field, continuous monitoring of tiger population outside Tiger Reserves, deployment of Strike Force in selected Tiger Reserves and emphasis on relocation of tribal families.

\*\* Central Assistance has been released for the various approved items to the Tiger Reserves based on the Annual Plan of Operations submitted by the State Governments containing the physical targets. The area under Project Tiger scheme amounts 37,761 sq. km., which includes 4 new Tiger Reserves created during the IXth Plan. Project allowance has been sanctioned to the Project Tiger field staff in the field. Central Assistance has also been sanctioned for deployment of strike Force, and for continuous monitoring of tiger population outside Tiger Reserves.

#### C.S. ECO- DEVELOPMENT SCHEME

(Around National Parks and Sanctuaries including Tiger Reserves)

(Rs. in Crores)

Programme	9 <sup>th</sup> Plan Outlay	Expdt.	Physical Targets	Achievement	10 <sup>th</sup> Plan Outlay	Expdt.	Physical Targets	Achievement
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Eco-development Around National Parks and Sanctuaries including Tiger Reserves	40.00	51.45	The target area of the Scheme includes all the 586 National Parks/WLS in the country. 100% Central Assistance is to be provided based on the APOs containing physical targets furnished by the State Governments. Target was to cover at least 80 National Parks/WLS excluding the seven location where IEP (externally aided project) is being implemented.	On an average about 100 National Park/ WLS have been provided with Central Assistance for approved items of the scheme.	Merged with Project Tiger Scheme during X Five Year Plan
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#### C.S. BENEFICIARY ORIENTED SCHEME FOR TRIBAL DEVELOPMENT

(Rs. in Crores)

Programme	9 <sup>th</sup> Plan Outlay	Expdt.	Physical Targets	Achievement	10 <sup>th</sup> Plan Outlay	Exp.	Physical Targets	Achievement
Beneficiary Oriented Scheme For Tribal Development	19.00	14.39	To release Central Assistance as per the approved norms on the basis of proposals received from the States. The scheme is implemented by the various State Governments concerned.	2157 families has been relocated from 7 Protected Areas / 4 States.	<b>Merged with Project Tiger Scheme during X Five Year Plan</b>			

#### 23. PROJECT ELEPHANT

Project Elephant was launched in February 1992 to assist States having free ranging populations of wild elephants to ensure long term survival of identified viable populations of elephants as their natural habitats. States are being given financial as well as technical and scientific assistance in achieving the objectives of the Project. The Project is being implemented in 12 States, namely Andhra Pradesh, Arunachal Pradesh, Assam, Jharkhand, Karnataka, Kerala, Meghalaya, Nagaland, Orissa, Tamil Nadu, Uttaranchal and West Bengal. These are being provided with 100% assistance under the centrally Sponsored Scheme 'Project Elephant'.

The achievement during the IXth Plan and goals set for the X Plan are as under:-

(Rs. in crores)

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<b>Programme</b>	<b>IXth Plan outlay</b>	<b>Expdt.</b>	<b>Physical Target</b>	<b>Physical Achievements</b>	<b>Xth Plan Outlay</b>	<b>Goals set for Xth Plan</b>	<b>Achievements upto 15.2.04</b>
<b>Project Elephant</b>	35.00	30.50	As proposed by States in A.P.O	Funds released to 12 States	60.00	60.00	22.73

#### **24. CENTRAL ZOO AUTHORITY (CZA)**

The Central Zoo Authority was constituted by the Central Government in 1992 under the provisions of Section-38A of the Wildlife (Protection) Act, 1972 as a statutory body to exercise the powers conferred on, and to perform the functions assigned to it under the Act.

The achievements of CZA during the IXth Plan and goals set for the X th Plan are as under:

(Rs. in crores)

<b>Programme</b>	<b>IXth Plan Outlay</b>	<b>Expdt.</b>	<b>Physical Target</b>	<b>Physical Achievements</b>	<b>X Plan Outlay</b>	<b>Goals set for X Plan</b>	<b>Achievements</b>
Central Zoo Authority	43.01	43.46	.*	**	75.00	***	****

### **\*Physical Targets for IX Plan:-**

To fulfill the objectives assigned to the Authority as spelt out in Section 38(c) of the Wildlife (Protection) Act which includes among others, laying down standards for housing, upkeep and veterinary care of the animals kept in Zoos and to provide the technical and other support to the zoos to help them to attain these standards with the objective of improving the quality of life of Zoo animals and complement the on going national effort of conservation of Wildlife.

### **\*\*Physical Achievement for IX Plan**

1. During the IX Plan period, 293 zoos were evaluated for grant of recognition. 178 zoos were granted recognition and 115 zoos were refused recognition.
2. 42 zoos have been provided financial assistance to the tune of Rs.27.90 crores during the IX Plan period.
3. Five rescue facilities for housing 300 circus animals were created in five designated zoos at the cost of Rs.7.84 crores. Grant of Rs. 1.20 crores were also provided towards feed and upkeep of circus animals kept in these rescue centres.
4. Various training courses and workshops were organized for capacity building of the zoo personnel and zoo management. During the Plan Period total 731 Zoo personnel have been trained including 11 officials sent for training abroad.
5. Project of Establishment of Laboratory for Endanger Species ( LaCONES) under CCMB were taken up. During the IX Plan period total grant of Rs. 1.20 crores provided to CCMB for this project.
6. Five veterinary institutes were selected region-wise for upgradation of their clinical and diagnostic facilities for better animal health care. Funds Rs. 33.65 lakhs have been released to two Institutes during the plan period.

### **\*\*\* GOALS SET FOR THE XTH PLAN**

1. To achieve the standards and norms set-forth under the Recognition of Zoo Rules, 1992.
2. Provide the Grants to Zoos for improvement of animal housing, upkeep and veterinary care facility on upgraded funding pattern on 100% basis. The remaining activities to be funded on 50:50 basis.
3. Creation of scientific cell within the Central Zoo Authority with a view to provide technical assistance in various aspects of zoo management to the zoos in the country
4. Capacity building of the zoos personnel to be continued by organizing various training programmes, workshops and seminars.
5. Research Activities in critical areas particularly for preservation of germ- plasm of endangered species and provide financial assistance for establishment of a laboratory for conservation of wild animals in CCMB, Hyderabad will be continued.
6. Create further Rescue Facility in the off display area of the to rehabilitate lions and tigers expected to be surrendered from circuses and from the zoos refused recognition by the Central Zoo Authority.
7. To continue meeting the cost of feed and upkeep of rescued animals kept in Rescue Centres

## **25. NATIONAL ZOOLOGICAL PARK, NEW DELHI**

On the recommendation of the Indian Board of Wildlife, the Government of India set up the National Zoological Park in New Delhi in October, 1955, to conserve and breed rare and endangered animals, to conduct research on their behaviour, reproduction and nutrition and to educate the people

about preservation of wildlife. It also provides assistance and guidance to the other zoos in the country.

(Rs. in crores)

Programme	Ixth Plan Outlay	Expdt.	Physical Target	Achievements
Development Activity at National Zoological Park.	3.20	2.19	During IXth Plan Construction of Chimpanzee, African Elephant Enclosure, Improvement of existing enclosures as per Master Plan, Construction & Extension of White Tiger Enclosure, Extension of Royal Bengal Tiger encl. besides major renovation and modifications to suit the requirements of certain other animals have been taken up. Animal exchange with Indian and foreign zoos were made. Mate for White Peacock, Lady Pheasant, Cassowary were procured. Many competitions were organized for school children, Physically handicapped children, painting Competition during the Wildlife Week Celebration. Van Mahaotsava was also organized with great enthusiasm, Planting of sapling were carried out, Leopard cat, jungle fowl, partridge, chinkara, wolf were received in exchange.	Target set achieved in full

**Goals set for Xth Plan**

(Rs. in crores)

Programme	Xth Plan Outlay	Physical Target/Goal Set for Xth Plan	Physical Achievements
Development Activity at National Zoological Park.	7.00	1. Various Educational Programmes: i) Celebration of Wildlife Week & Van Mahaotsava ii) Conduction of various seminars & Teacher Oriented Programme iii) Publication of Guide Map, Annual Report, Stickers etc. iv) Preparation of Signage. v) Maintaining the Health & Hygienic Environment for Zoo Animals. vi) Exchange of various animals with India & Foreign Zoo for Plan Breeding Project. vii) Upkeep of animals and their enclosure. **For the Capital construction work executed through CCU / CPWD, the funds will be provided by Central Zoo Authority.	Target will be achieved in due course of time

**26. PROTECTION OF WILDLIFE OUTSIDE PROTECTED AREAS**

The new scheme of Protection of Wildlife Outside Protected Areas has been proposed under X Plan. The most important part of this scheme is protection of wildlife outside protected areas. Protected areas cover about only 4.5% of the total geographical area of the country. Considering about 23% total geographical area under forest about 19.5% forest area is outside protected area system. In addition there is considerable extent of non-forest wildlife habitat also which is not forming a part of protected area systems or forests. These areas are the abode of a large number of wildlife, both flora and fauna. Unfortunately no appropriate mechanism for wildlife conservation and protection is in force at present in such areas. There is hardly any infrastructure, special staff or budget available under the control of territorial forest staff for wildlife conservation. Consequently conservation of wildlife in such areas continues to be neglected.

This scheme will be introduced in the selected areas in the beginning which are in the high diversity or high risk categories. It also envisages to establish 80 mobile patrolling units in these areas. The total outlay recommended for the Tenth Plan is Rs 60.00 crores.

(Rs. in crores)

Programme	9 <sup>th</sup> Plan outlay	Expdt.	Physical target	Physical achievements	Xth Plan Outlay	Goals set for IXth Plan	Achievement
Protection of Wildlife outside Protected Areas	NIL	NIL	NIL	NIL	60.00	60.00	The Scheme has not yet been approved by the Planning Commission.

## 27. ANIMAL WELFARE DIVISION

The mandate of Animal Welfare Division is to prevent the infliction of unnecessary pain or suffering on animals. The Schemes being implemented by the Animal Welfare Division are as under:-

- Scheme for Shelter Houses for Looking After the Animals.
- Scheme for Animal Birth Control and Immunization of Stray Dogs.
- Scheme for Provision of Ambulance Services to Animals in Distress.
- Scheme for Relief to Animals during Natural Calamities and Unforeseen Circumstances.
- Scheme for Scholarships to Students for Studies Abroad in Animal Welfare Courses.
- National Institute of Animal Welfare (NIAW) – Statutory Body under Section 4 of the PCA Act.
- Animal Welfare Board of India (AWBI).
- Committee for Purpose of Control & Supervision of Experiments on Animals (CPCSEA).

The achievements made under various Schemes during the IXth Plan and goals set for the X th Plan are as under:

(Rs. in Crores)

Programme	IXth Plan Outlay	Expdtr.	Physical Targets	Physical Achievements	Xth Plan Outlay	Goals set for Xth Plan	Achievements So far.
Ambulances	8.33	5.87	145	178	7.57	168	20 Proposals have been considered
Shelters	15.00	19.02	104	193	77.36	216** 60*** 9**** 340***** 50*****	59 Proposals have been considered
Animal Birth	2.55	4.13	91*	114*	21.16	5,000	63000(Dogs)

Control						(Monkeys) 4,23,000 (Dogs)	covered under the schemes
Natural Calamity	2.25	1.04	-	-	5.28	As per require- ment	5 States have been given grant
AWBI	21.25	18.81	-	-	31.30	-	Grant to 1800 Organisations
Scholarships	1.20	0.09	-	-	3.10	-	-
CPCSEA	1.09	0.65	-	-	2.80	-	Zonal Workshops - Nominee Workshops - Inspection of Animal Houses
NIAW	8.22	2.74	-	-	12.43	-	80% of the Building Work Completed

\* Number of Organizations  
\*\* Shelter Houses  
\*\*\* Number of Animal Houses  
\*\*\*\* Number of Rescue Centres  
\*\*\*\*\* Activation of SAWBs/SPCAs  
\*\*\*\*\* Workshops

## 28. NATIONAL AFFORESTATION & ECO-DEVELOPMENT BOARD

The National Afforestation & Eco-Development Board (NAEB) was set up in August 1992 for promoting afforestation, tree planting, ecological restoration and eco development activities in the country. Special attention is being given to the regeneration of degraded forest areas and lands adjoining forest areas, national parks, sanctuaries and other protected areas as well as the ecologically fragile areas like the Western Himalayas, Aravallis, Western Ghats, etc. The detailed role & functions of the NAEB are given as follows:

- (a) Evolve mechanisms for ecological restoration of degraded forest areas and adjoining lands through systematic planning and implementation, in a cost effective manner;
- (b) Restore through natural regeneration or appropriate intervention the forest cover in the country for ecological security and to meet the fuelwood, fodder and other needs of the rural communities;
- (c) Restore fuelwood, fodder, timber and other forest produce on the degraded forest and adjoining lands in order to meet the demands for these items;
- (d) Sponsor research and extension of research findings to disseminate new and proper technologies for the regeneration and development of degraded forest areas and adjoining lands;
- (e) Create general awareness and help foster a people's movement for promoting afforestation and eco development with the assistance of voluntary agencies, non-government organisations, Panchayati Raj institutions and others and promote participatory and sustainable management of degraded forest areas and adjoining lands;

- (f) Coordinate and monitor the Action Plans for tree planting, ecological restoration and eco development; and
- (g) Undertake all other measures necessary for promoting afforestation, tree planting, ecological restoration and eco development activities in the country.

## 20 - POINT PROGRAMME

NAEB is the Nodal Agency for fixing targets and monitoring achievements of afforestation activities under the 20- Point Programme. Targets are fixed separately in terms of seedling distribution for planting on private lands and plantation on public lands including forest lands.

The targets and achievements under point No.16 of the 20 Point Programme during 9<sup>th</sup> Plan period are as follows:-

### (Seedlings in Crores) (Area in Lakh Ha.)

Item of Work	9 <sup>th</sup> Plan		2002-03		2003-04	
	Targets	Achievements	Targets	Achievements	Targets	Achievement*
Seedling distribution (for planting in private lands)	588.75	503.63	92.50	82.00	86.22	70.73
Area (Public lands including forest lands)	62.59	55.58	10.72	7.25	10.31	7.77

\* = Upto January, 2004

### Scheme wise Progress

The NAEB was responsible for implementing 5 Central Sector/Centrally Sponsored Schemes during the IX Plan period. The progress of these Schemes during the 9th Plan has been as follows:

Sl. No.	Scheme/Activity	IX Plan Outlay	Expenditure	Physical Targets	Achievements(in ha.)
1.	Integrated Afforestation and Eco-Development Projects Scheme.	247.00	212.48	225752	179067
2.	Fuelwood/Fodder Projects Scheme	135.00	132.08	330458	277500
3.	Non-Timber Forests Produce (including Medicinal Plants) Scheme	80.50	74.41	91921	73378
4.	Seed Development Scheme	6.00	6.20	N.A	25 states
5.	Grants-in-Aid Scheme (for Voluntary Agencies)	9.50	13.10	240	200

### Outlay for the Xth Plan

Programme	Xth Plan Outlay In Rs. Crore	Physical targets for Xth Plan (ha.)	Cumulative Achievements.)
NAEB	80.00	-	-
National Afforestation Programme	1115.00	5,00,000 ha.	689643 ha *
National Action Programme to Combat Desertification	30.00	N.A	Nil
Eco-Task force	75.00	Supporting 4 Eco-battalion in the country	Continuing Scheme

\* Area of land for treatment under FDA projects sanctioned during 2002-03 and 2003-04



## 29. NATIONAL RIVER CONSERVATION DIRECTORATE

The main objective of the river action plans is to improve the water quality of the rivers to acceptable standards by preventing pollution load reaching the river by undertaking works like (i) interception & diversion works to capture the raw sewage flowing into the river through open drains and divert them for treatment, (ii) sewage treatment plant for treating the diverted sewage, (iii) low cost sanitation works to prevent open defecation on river banks, (iv) electric and improved wood based crematoria to conserve the use of wood and help in ensuring proper cremation of bodies brought to the burning ghat, (v) river front development works such as improvement of bathing ghats and (vi) other minor miscellaneous works such as afforestation.

The achievement during the IXth Plan and goals set for the X Plan are as under:-

(Rs. in crores)								
No.	Programme	IX Plan Outlay	Expdt.	Physical target (scheme)	Physical Achievement	X Plan Outlay	Goals set for X Plan	Achievements
1.	GAP-I	8.28	5.79	11	8 schemes completed	-	The goal of the NRCP is to reduce pollution in the major rivers by executing pollution abatement measures such as interception, diversion and treatment of domestic sewage undertaking river front works etc. The goal of NLCP is conservation of identified lakes.	The following no.of schemes have been completed under the X Plan so far:  GAP-I 1 NRCP 108
2.	GAP-II	264.89	473.38	347	210 schemes completed	-		
3.	NRCP	505.12	292.89	226	75 schemes completed -	1450.00		
4.	NLCP	18.25	11.40	7	Work Initiated	220.00		
TOTAL :		796.54	783.47	591		1670.00		

### ACHIEVEMENTS IN THE IX PLAN

#### ❑ Ganga Action Plan Phase-I

It was the first river Action Plan taken-up in 1985 for the pollution abatement for river Ganga only. Out of 11 remaining ongoing schemes, 8 schemes were completed by the end of the 9<sup>th</sup> plan . A sewage treatment capacity of 282 mld was created under the programme . An amount of about Rs. 5.79 crore was spent on the programme in the IX Plan.

#### ❑ National River Conservation Plan

- Under this action plan out of the total project outlay of Rs.1892.95 crore, a sum of Rs.274.52 crore was released by GOI to States. A total of 110 no schemes were sanctioned and 75 were completed
- Eight towns of Tamil Nadu with works valued at Rs.1066.82 crore have been taken up for pollution abatement programme.
- One town of Maharashtra with works valued at Rs.11.64 crore was taken up for pollution abatement programme.

- Two towns of Punjab with works valued at Rs.14.97 crore have been taken up for pollution abatement programme.

□ Ganga Action Plan Phase-II

Phase-II of the Ganga Action Plan was launched and approved in stages between 1993 & 1996 for implementation. Gap-II was merged with NRCP in December 1996. The total project cost of GAP Phase-II is Rs. 1498.86 crore which includes the following components;

- Yamuna Action Plan: Out of the project outlay of Rs.732.05 crore and amount of Rs.384.12 crore had been released by the end of the 9<sup>th</sup> plan. 187 schemes were sanctioned and 144 were completed this includes YAP-extended phase which was approved during the IX Plan..
- Gomati Action Plan:- Out of the project outlay of Rs.61.10 crore an amount of Rs.14.57 crore had been released. 26 schemes were sanctioned and 15 were completed.
- Damodar Action Plan:- Out of the project outlay of Rs.23.58 crore an amount of Rs.0.09 crore had been released and 10 schemes were sanctioned
- Ganga Action Plan Phase-II :- Out of the project outlay of Rs.682.11 crore an amount of Rs.77.82 crore had been released. 133 schemes were sanctioned and 13 were completed.

**ECOLOGY & ENVIRONMENT**

**30. BOTANICAL SURVEY OF INDIA (BSI)**

Botanical Survey of India was established in 1890 with the basic objectives of carrying out floristic surveys. It was revived and re-organized in 1954. During successive Plan periods its functions have been gradually expanded. The objectives and perspectives of BSI were thoroughly reviewed in 2002 by the Sub-committee constituted by Programme Advisory Programme Committee of BSI and ZSI.

The achievement during the IXth Plan and goals set for the X Plan are as under:-

(Rs. in Crores)

Programme	IXth Plan Outlay	Expdt.	Physical Target	Physical Achievement	Xth Plan Outlay	Goal Set for Xth Plan
BOTANICAL SURVEY OF INDIA (Survey, Inventorisation & Conservation of floristic diversity)	32.00	18.42			85.00	
1. Survey of Plant resources. No. of Exploration			650	360		
2. Collection of species			80,000 Field nos.	ca. 60,000 Field nos.		
3. Preservation of Specimens			60,000 specimens	ca. 50,000 specimens		
4. Coverage of specimens under threat in publication of Red data book			ca. 750	Vol. IV & V in manuscript form. 200 sheets		
5. Publication			250 (Books/Journals-50; Papers and Articles-200)	265 (Books/Journals-64; Papers and Articles-201)		
1. Field Exploration Tours						400

2. Herbarium Consultation/ Library Consultation/ Study Tour						100
3. Documentation of Phytodiversity						
i. Vascular Plants						7,500 species
a. National Flora (Flora of India)						
b. State Flora						
c. District Flora						
d. Biosphere Reserve						03 nos.
e. National Park						03 nos.
f. Wild Life Sanctuary						05 nos.
g. Fragile Ecosystem (including wetland)						10 nos.
ii. Lower Group Plants (Algae, Fungi, Lichen, Bryophytes)						500 species
iii. Collection of Specimens						ca. 60,000
iv. Preservation of specimens						ca. 40,000
v. Specimens identified						ca. 15,000
4. <i>Ex-situ</i> conservation of endangered, endemic, economic & ornamental plants						ca. 600
5. Documentation of Traditional knowledge of plants						ca. 500
6. Publications						
a. Books						50
b. Journals						15
c. Research Papers/ Articles						200

### 31. ZOOLOGICAL SURVEY OF INDIA (ZSI)

Zoological Survey of India was established primarily to explore and inventories the faunal diversity of the country and to collect and document baseline data in respect of taxonomy, geographical distribution, bio-ecology of various animal groups. The primary objectives are 1. Exploration and survey of Fauna resources, 2. Taxonomic studies, 3. Status survey of Endangered species, 4. Status survey of conservation areas, 5. Publication of results through departmental books and journals 6. Publication of Fauna of India series, 7. Maintenance and development of National zoological collections. The achievements of ZSI during the 9<sup>th</sup> Plan and the goals set for the 10<sup>th</sup> Plans are as follows:

(Rs. in Crores)

Programme	IX Plan Outlay	Expenditure
Survey ( ZSI )	32.00**	34.76**
<b>Physical Target</b>	<b>Physical Achievement</b>	
Exploration and survey of State Fauna (District-wise)	Ongoing programme of the department. 90 surveys were undertaken and about 40 districts were covered. Documentation of faunal inventory of these states is in progress and will be completed during Tenth five-year Plan period.	
Studies on some selected eco- systems of Indian region	Selected ecosystems have been taken up to explore the bio-diversity, as given below: All are Ongoing programmes of the department.	
Himalayan Eco-system	36 surveys have been conducted in the states of Himachal Pradesh, Sikkim, Arunachal Pradesh, Jammu & Kashmir (Ladakh)	

	The faunal bio-diversity of the state of Sikkim has been completed and is under print. The survey of other state will continue
Desert Ecosystem	14 Surveys in the desert areas of the states of Rajasthan and Gujarat. The study on the fauna of Gujarat desert has been partly completed, published and the study of Rajasthan is in progress.
Tropical Rain Forest Eco-system	22 Surveys in Tropical rain forest ecosystems of the states of Arunachal Pradesh, Tripura, Manipur, Nagaland, Mizoram, Kerala and Goa have been take up. Studies on Tripura have been completed and the document is under print. Studies on other states are in progress, and will be completed during X Five Year Plan period.
Estuarine Eco-system	16 Surveys in Two Estuarine Ecosystems viz., Godavari, Krishna, Nagavali estuaries and Sundarban mangroves were extensively explored. The document on Godavari estuary has been published, Krishna is in press
Freshwater Eco-system	48 surveys have been undertaken. The studies on Kolleru, Sukhna, Loktak, Ujni have been completed and are under print. Survey and exploration of other freshwater bodies will continue during Tenth five-year plan period.
Marine Eco-system	36 surveys have been undertaken in Andaman & Nicobar Is., East Coast, Palk Bay, Gulf Katchh and Digha coasts. Exploration will continue during the Tenth five-year plan period and results will be published
Survey of Protected Areas	43 surveys of various important conservation areas have been undertaken. The studies on Renuka sanctuary, Eravikulam N.P., Melghat Tiger Reserve, Valmiki Tiger Reserve have been completed and published. The survey of the remaining areas will continue during Tenth five-year plan period, as they are ongoing programmes of the department.
Taxonomic studies of Faunal Components	On Going Programme and hence continued. Final document on Simlipal, Palamau and Manas Tiger Reserves and Ujni wetland have been completed. Taxonomic studies on the faunal component of Tripura, Sikkim, Manipur and Mizoram are in the final stages of publication.
Status survey of Endangered species	4 Species undertaken and 2 document on Chinkara & Desert Cat in Rajasthan has been published. During the Xth Five Year Plan period the Status survey of more endangered species will be taken up.
Red Data Book	Red Data Book on invertebrate fauna w.s.r. to Butterflies is being processed. A revised version of the Red Data Book based on the new IUCN guidelines is under way and will be completed in Tenth Five Year Plan.
Fauna of India	7 Fauna Volumes Published & 3 in Printing
Computerisation	1,50,000 data on registered general collection have been computerized. On going programme, continued in the X th Plan also.
Documentation and Publication	22 Books on Faunal Diversity & Departmental Books published & 8 books are under Printing.
Training and Extension programmes	12 No. of Training Courses and extension programmes in different fields of Zoology conducted.
<b>X Plan Outlay</b>	
Rs. 45.00	
<b>Expenditure</b>	
16.25 ( up to 31.10.2003)	
Goals set for X Plan	
Exploration and survey of State Fauna (District-wise)	Selected district survey in the following states will be taken up during the X Plan period viz., Arunachal Pradesh, Andhra Pradesh, Bihar, Madhya Pradesh, Rajasthan, Karnataka, Haryana, Uttar Pradesh, Uttaranchal, Punjab, Kerala, Manipur, Nagaland, Tamilnadu
Studies on some selected eco-systems of Indian region	As given below :
Himalayan Eco-system	Ladakh, Arunachal Pradesh, Uttar Pradesh & Uttaranchal
Desert Ecosystem	Rajasthan & Gujarat will be completed
Tropical Rain Forest Eco-system	Kerala, Arunachal Pradesh & Goa will be completed
Estuarine Eco-system	Estuaries of Orissa, Andhra Pradesh, Tamilnadu & Kerala

Freshwater Eco-system	Selected Wetlands in the states of Himachal Pradesh, Uttaranchal, Rajasthan, Tamilnadu, West Bengal, Andhra Pradesh, Maharashtra and Madhya Pradesh will be taken up
Marine Eco-system	Coral reef ecosystem in Gulf of Mannar, Andaman & Nicobar Islands, Gulf of Katchch.
Survey of Protected Areas	Another 10 % of the Protected areas, in addition to 20 % already under investigation will be covered during the Tenth five-year Plan period.
Taxonomic studies of Faunal Components	Taxonomic studies of the faunal component from the State Survey, Ecosystem Survey will be taken up as action Plan of the department
Status survey of Endangered species	5 Species of Endangered Animals will be completed during the X plan period
Red Data Book	Invertebrates and Revised edition of Vertebrates as per IUCN Guideline will be completed
Fauna of India	Volumes submitted by the scientists will be published
Computerisation	Computerization of Head Quarters & Regional Stations will be completed and linked to the Network
Documentation and Publication	30 Books on Faunal Diversity & Departmental Books will published
Training and Extension programmes	10 No. of Training Courses and extension programmes in different fields of Zoology.

### 32. NATIONAL MUSEUM OF NATURAL HISTORY (NMNH)

The museum owes its genesis to the Late Prime Minister Smt. Indira Gandhi, who while considering the new projects to be initiated in 1972 -- the 25th anniversary of India's Independence - decided that the country needs a museum of Natural History to depict its flora, fauna and mineral wealth to provide an out of school facility for education of children and to promote environmental awareness among the masses. The museum opened its doors to the public in the FICCI building on Barakhamba Road on 5th June 1978, with a gallery on Natural History, coinciding symbolically with the World Environment Day to further emphasize its role safeguarding the environment.

Within the last 23 years, it added three galleries, a Discovery and Activity Room for pre-school kids, and conducted a variety of educational programmes and brought out popular literature. In addition the museum started its two regional centers at Mysore and Bhopal with a third one shortly coming up at Bhubneshwer.

The achievement during the IXth Plan and goals set for the X Plan are as under:-

(Rs. in Crores)					
Programme	9 <sup>th</sup> Plan Outlay	Expdt.	Physical Targets/Achievements	Xth Plan Outlay	Goals/Achievements during Tenth Plan
<b>National Museum of Natural History, New Delhi</b>	19.00	17.96	*	40.00	**

\* A large number of educational activities including summer programmes, national environment awareness campaign, teacher orientation workshops, publication of popular literature on environment, special programmes for physically disabled and mentally-retarded etc. were undertaken by the NMNH and its regional centers. Development of plan and initiation of exhibit development for the 2<sup>nd</sup> Phase galleries in the Regional Museum of Natural History, Mysore were taken up. Updating and renovation of premises and exhibit galleries were undertaken at the NMNH. Phase I construction at the Regional Museum of Natural History at Bhubaneswar was completed by the CCU. Phase-II construction activities both at the RMNH, Bhopal and RMNH, Bhubaneswar were undertaken. Plans for 2<sup>nd</sup> Phase Galleries, exhibit development and

Discovery Center at RMNH, Bhopal were undertaken. Renovation and reconstruction of Mobile Museum was undertaken. Development of plans for Galleries and other features like Discovery Room, Bio-Science computer Room etc., of phase I of RMNH, Bhubaneswar were initiated.

\*\*Acquisition of land and construction of building of NMNH. Renovation and updating of existing NMNH Galleries. Completion of 2<sup>nd</sup> Phase of Galleries of RMNH, Mysore, Bhopal and Ist Phase at Bhubaneswar. Land is yet to be allotted by the Ministry of Urban Development. Works were initiated for completion of 2<sup>nd</sup> Phase of Galleries and other infrastructures at RMNH, Mysore and Bhopal and Ist Phase at Bhubaneswar.

### 33. ENVIRONMENTAL EDUCATION, AWARENESS & TRAINING

Ministry of Environment and Forests launched a Plan Scheme in 1983-84 on Environment Education and Awareness keeping in view the fact that spread of environmental education awareness and training are crucial to protect environment effectively. The basic objectives of this scheme are as below:

- Development of education/teaching material and aids in the formal education sector;
- To encourage non-governmental organisations, mass media and other concerned organisations for promoting environmental awareness, among the people at all level;
- To promote environmental education through existing education /scientific /research institutions
- To ensure training and man-power development in the environmental education; and
- To mobilise people's awareness for preservation and conservation environment.

The achievement during the IXth Plan and goals set for the X Plan are as under:-

(Rs. in Crores)

Name of the Activity	9 <sup>th</sup> Plan Outlay	Exp.	Physical Targets/Achievements
<b>Env. Education &amp; Training</b>	32.00	25.06	No Quantitative targets were set for the schemes as such. However, the targets set for various programmes under the scheme have been successfully achieved.
<b>Seminars/Symposia/ Workshops</b>	1.50	1.53	
<b>Grants in aid to professional societies &amp; institutions and Publication of resource material.</b>	0.50	0.50	No Quantitative targets were set for the schemes as such. However, the targets set for various programmes under the scheme have been successfully achieved.

\*Grants in aid to professional societies and institutions for developing activities and projects in the field of environment were provided. Guidelines and Performa for submission of projects were finalised.

(Rs. in Crores)

Name of the Activity	10 <sup>th</sup> Plan Outlay	Goal set for 10 <sup>th</sup> Plan
<b>Env. Education , Training and Awareness</b>	125.00	It is not possible to set any quantitative targets for these schemes. However, the existing programmes will be continued.

# Plan amount for EE Division.

### 34. ENVIRONMENTAL INFORMATION SYSTEM (ENVIS)

Under the Environmental Information System (ENVIS) Scheme centres known as ENVIS Centres are set up on different subjects. 25 ENVIS Centres have been established so far. Under the Scheme, a quarterly news letter 'Enviro News' and Paryavaran abstract an abstracting Journal are also published.

The achievement during the IXth Plan and goals set for the X Plan are as under:-

(Rs. in crores)

Programme	9 <sup>th</sup> Plan outlay	Expenditure	Physical Target & Achievements	10 <sup>th</sup> plan outlay	Goal set up for 10-th Plan and achievements

ENVIS	7.5	7.5	*	14.00	**
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**\*Physical Targets and Achievement for 9<sup>th</sup> Plan:** During the 9<sup>th</sup> Plan 1 new ENVIS Centre on Eco-Development was set –up and all the 25 ENVIS Centers were monitored .

**Paryavaran Abstract** a quarterly journal reporting Research in the field of Environment in the Indian context was published during the period.

**Annual Report of the Ministry** was published by ENVIS every year during the plan period. ENVIRO News a quarterly newsletter was also brought out regularly during the plan period.

#### **\*\*GOALS SET FOR THE 10<sup>TH</sup> PLAN**

1. All the 25 ENVIS Centers will be networked under a new ENVIS Home page
2. 96 ENVIS Nodes being setup under the EMCBTAP will also be networked and linked to the ENVIS homepage.
3. Paryavaran Abstract, and 'ENVIRONEWS' Newsletter will be brought out regularly.

#### **35. CENTRES OF EXCELLENCE**

Under the Centres of Excellence Scheme, nine Centres have been set up by the Ministry so far. These Centres have been set up in the fields of Environment Education, Ecology of Western Ghats, Mining Environment, Ornithology and Natural History, Environmental Management of Degraded Eco System, Conservation and Sustainable Utilisation of Tropical Plant Diversity and Animals and Environment, and Environmental Economics. These ten Centres are:-

- (a) Centre for Environment Education, Ahmedabad.
- (b) Centre for Ecological Sciences, Bangalore.
- (c) Centre of Mining Environment, Dhanbad.
- (d) C.P. Ramaswamy Aiyar Centre for Environment Education, Madras.
- (e) Salim Ali Centre of Ornithology and Natural History, Coimbatore.
- (f) Centre for Environmental Management of Degraded Eco-system, Delhi University.
- (g) Tropical Botanical Garden and Research Institute, Thiruvananthapuram.
- (h) Madras School of Economics, Chennai.
- (i) Foundation for Revitalisation of Local Health Traditions, Bangalore.

The achievement during the IXth Plan and goals set for the X Plan are as under:-

(Rs. in Crores)

Name of the Scheme	IXth Plan Outlay	Expdt.	Xth Plan Outlay	Goals set for Xth Plan
<b>CENTRES OF EXCELLENCE</b>	22.20	23.59	45.00	To strengthen awareness, research & training in the priority areas of environmental science through existing ten centres of excellence and to augment infrastructural and other facilities in these Centres.

#### **36. NATIONAL NATURAL RESOURCES OF MANAGEMENT SYSTEMS (NNRMS)**

The main objective of the National Natural Resource Management System (NNRMS) Scheme is to utilise remote sensing technology with conventional methods of monitoring of natural resources such as land, water, forests, minerals, oceans for attaining sustainable development.

The achievement during the IXth Plan and goals set for the X Plan are as under:-

(Rs. in crores)

Programme	9 <sup>th</sup> Plan outlay	Expenditure	Physical Target & Achievements	10 <sup>th</sup> plan outlay	Goal set up for 10 <sup>th</sup> Plan and achievements
NNRMS	4.00	4.00	*	7.00	**

\* Physical Targets and Achievements for 9<sup>th</sup> Plan : Projects in 23 identified areas were supported.

**\*\* GOALS SET FOR THE 10<sup>TH</sup> PLAN**

Projects identified under the NNRMS scheme will be funded.

**37. ENVIRONMENT IMPACT ASSESSMENT**

Environmental Impact Assessment is one of the well recognized management tools for incorporating environmental mitigation measures in planning, design and operation of developmental projects. Environmental clearance has been made mandatory since January, 1994 in respect of 30 developmental activities including Industry, Thermal Power, Mining, River Valley and Infrastructure projects etc. Environmental clearance to developmental projects is accorded as per the procedure laid down in the Impact Assessment Notification which inter-alia includes public hearing. The projects are appraised by Multi-disciplinary Expert Committees and necessary safeguard measures are stipulated for minimizing the environmental impacts of development projects. In addition to appraisal of projects, various studies are undertaken for evolving norms for disposal of effluents, emissions and health aspects etc. For evolving integrated coastal zone management approach, a number of studies and surveys have been planned for demarcation of sensitive areas in coastal stretches, areas suitable for activities such as tourism and economic zone etc. Digitization of Coastal Zone Management Plans is also proposed for various coastal stretches.

The achievement during the IXth Plan and goals set for the X Plan are as under:-

(Rs.in Crores)

Prog ramme	9 <sup>th</sup> Plan Outlay	Expdt.	Physical Target	Achieve-ment	Xth Plan Outlay	Goals set for Xth Plan	Achieve-ment
Environ ment Impact Assessm ent	7.00	8.50	The responsibility of Impact Assessment Division is to assess the environmental impact of developmenta l activities and to suggest necessary mitigation measures	Environmenta l appraisal is a continuous process and various steps are initiated for streamlining and improving the procedure. This has resulted in expeditious decision on developmenta l projects	13.00	Continuation of environmental clearance of projects with improved procedures, dissemination of information, public hearing evolving implementable standards for disposal of effluents/emission s etc. based on best available technologies etc.	The objective of Impact Assessment is to assess the Impact of any development project from environment angle which is referred to this Ministry. EIA is a continuous process and procedures have been evolved for appraisal



### 38. CLEAN TECHNOLOGY

Integration of environmental considerations into developmental process with optimal utilization of resources has been recognized as a key to sustainable development. It has become progressively more clear that 'end of pipe' strategies alone cannot resolve complex environmental problems. They do not eliminate pollution, but often transfer it from one media to another, require expensive pollution treatment equipment, discourage technological innovation towards achieving environmental benefits beyond compliance. Cleaner productions and cleaner technologies can ensure that there are no conflicts between growth and environment. Cleaner production brings economic benefits via increased resource efficiency, innovation and reduction of pollution control cost.

The programme on development and promotion of cleaner technologies was initiated in 1994 with the following objectives:-

- (i) Formulation of sustainable Development Strategies.
- (ii) Development & promotion of Cleaner Technologies.
- (iii) Development of tools and techniques for pollution prevention.

All the above listed activities ultimately aim at achieving the concept of sustainable development by optimal use of natural resources and waste minimization. Various programmes and activities have been initiated over these years for the protection of environment.

The achievement during the IXth Plan and goals set for the X Plan are as under:-

(Rs. in crores)

Programme	IXth Plan outlay	Expendt.	Physical target	Physical Achievements	Xth Plan outlay	Goals set for Xth Plan
Development and Promotion of Clean Technology	20.00	8.16	*	**	25.00	***

**\*Physical targets:**

It was proposed to initiate studies on life cycle assessment, natural resource accounting and to take up demonstration projects on clean technologies.

**\*\*Physical achievements:**

Carrying Capacity Studies were initiated for five regions namely; Doon Valley, National Capital Region, Damodar River Basin, Tapi Estuary and Kochi Region. Out of these, four studies were completed during IXth Plan and fifth one on Greater Kochi Region has been completed during the year 2002-2003. Findings of these studies have been discussed with all the stake holders.

Life Cycle Assessment Studies were initiated for three sectors namely; (i) steel, (ii) coal and lignite based thermal power sector and (iii) pulp and paper. Out of these, the studies at sl. no. (i) and (ii) have been completed while the 3<sup>rd</sup> is progressing well.

A study on Natural Resource Accounting for Upper Yamuna Basin has been completed. In addition other initiatives have also been undertaken to use and apply market based instrument for regional environment management in Hazira, industrial ecology opportunities and implementation of demonstration projects.

**\*\*\* Goals set for Xth Plan:**

Life Cycle Assessment Studies has been identified as priority area during the Xth Plan for taking up studies in specified sectors. Other demonstration projects for implementation and promotion of cleaner technologies will be taken up during the Xth Plan.



### 39. INDUSTRIAL POLLUTION ABATEMENT THROUGH PREVENTIVE STRATEGIES

The Scheme is an amalgamation of the on-going three Schemes viz. Environmental Audit, Adoption of Clean Technologies in Small Scale Industries and Environmental Statistics and Mapping, which have been continuing since 8<sup>th</sup> Five Year Plan and to continue during the Xth Five Year Plan. The Policy statement of abatement of pollution lays emphasis on preventive aspect of pollution abatement and promotion of technological inputs to reduce industrial pollution. It also states that authoritative statistical data on the environment is vital for developmental decision making. The preventive strategies for abatement of industrial pollution include environmental audit, waste minimization/cleaner production and environmental management systems.

The achievement during the IXth Plan and goals set for the X Plan are as under:-

(Rs. in Crores)

Programme	IX plan outlay	Expenditure	Physical targets	Physical Achievements	X Plan outlay	Goals set for X Plan	Achievements
Environmental Audit, Adoption of Clean Technologies in Small Scale Industries, Environmental Statistics & Mapping and Waste Minimisation/Cleaner Production	1.70	1.70	Promotion through sector-wise training programmes for environmental audit, preparation of district-wise zoning atlas for siting of industries, demonstration projects in waste minimisation.		5.00	Continuation of programme of IX Plan through Central and State Pollution Control Boards, Institutions etc.	Modular Environmental Audit Manuals prepared, environmental quality mapping in industrial locations, training etc.

### 40. ASSISTANCE FOR ABATEMENT OF POLLUTION AND ENVIRONMENT POLICY & LAW

The Scheme meets the need to strengthen the various State Pollution Control Boards (SPCBs) and State Environment Departments for enforcing the statutory provisions for taking up pollution abatement measures. The Central Government has been funding the State Pollution Control Boards and State Environment Departments and other national research institutes. The purpose of funding is to strengthen the State Departments of Environment through additional technical manpower and State Pollution Control Boards through scientific analytic equipment that are expensive and hence cannot be procured on State Government's own funds. Funds to the State Boards are released for equipment and specific studies and projects which would need to be completed within a specific time frame to meet the objective of Policy Statement for abatement of Pollution.

The achievement during the IXth Plan and goals set for the X Plan are as under:-

(Rs. in Crores)

Programme	IXth Plan Outlay	Expdt.	Physical Target	Physical Achievements	Xth Plan Outlay	Goals set for Xth Plan	Achievements
<b>Assistance for Abatement of Pollution And Environment Policy &amp; Law</b>	10.00	13.52	Financial assistance to states for purchase of equipment, studies, projects, salary support for NE and Sikkim State SPCBs to meet the objectives of the Policy Statement for Abatement of Pollution.	Various SPCBs were assisted for strengthening their technical capabilities.	19.67	Financial assistance to states for purchase of equipment, studies, projects, salary support for UT PCCs and NE & Sikkim State SPCBs to meet the objectives of the Policy Statement for Abatement of Pollution including Environmental Health.	During this year assistance is being provided to 12 States and UT PCCs for strengthening of labs and salary support for technical staff and also Environmental Health. Sanction for providing salary support to 5 more UT PCCs has been issued and the amount has been released to Tripura & Lakshadweep PCC for salary support.
<b>Environment Policy &amp; Law</b>	<b>1.25</b>	<b>0.82</b>					
Environment Policy & Legislation			Enactment of Acts	Enacted:- (i) National Environment Tribunal Act  (ii) National Environment Appellate Authority Act		*	**
Eco-mark			Publication of notification under Pollution Acts  Launch of publicity campaign	10 notifications published  10 projects were awarded		#	
ISO-14000 Certification			Development of criteria	19 notifications published		\$	
Market Based Instruments						%	

Trade & Environment						@	
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\* The Ministry will continue with the activities aimed at creating a comprehensive legal and institutional infrastructure for safeguarding the environment through monitoring and amendment to the existing laws, rules etc. as necessary

The Water (Prevention and Control of Pollution) Cess Act, 1977 and amended in 1991, is proposed to be revised to keep pace with increase in costs and the overall commitment in involving heavy financial liabilities.

The draft amendment to EPA, 1986 will be discussed both internally and with various interested groups to examine whether the provisions contained therein are required to be included in the Act or suitable changes are required.

# The activities on eco-mark scheme will be more focussed. Stress will be laid on awareness building as well as technical capacity building of various target groups. Special thrust will be given to education and creation of awareness building amongst the consumers for achieving the objective by providing financial assistance to various agencies

\$ Some policy oriented studies on the feasibility of ISO 14000 certification would be given to research institutions based on the sectors of industry. The data generated from the above studies will be discussed in workshops, seminars and symposia. A training package would be developed and imparted to target groups. For the purpose of dissemination of information, assistance would be given for publication and other media campaign

% The matter regarding introduction of Market Based Instruments for industrial pollution abatement is under consideration. Studies on the subject have been conducted. To deal with the range of pollution problems, a mix of regulatory and economic measures will be adopted

@ For the 10<sup>th</sup> Five Year Plan, the scheme has been structured in the following ways for effective delivery mechanism with a view to sharpening the focus of the scheme and for effective monitoring:

Policy-oriented studies: A few studies (on Multilateral Agreements, WTO Agreements, environmental certifications, National environmental standards and their implications on trade and vice versa etc.) including country-specific case studies will be undertaken with the help of concerned ministries and institutions

Workshops, seminars and training: Policy-oriented studies will be presented and discussed in a number of workshops/seminars on trade and environment. A training package on trade and environment could also be developed

Dissemination of information: This will be done through publications and dissemination of the policy studies and workshop reports. A database to incorporate more explicitly environmental regulations that may have an impact on trade will be developed and disseminated. Stress will also be given to provide financial assistance for seminars, symposia and workshops to achieve the stated objectives of the scheme

After the completion of the scheme, it is expected that the target groups will be better equipped and well informed to have discussions/negotiations in various agreements on environment as well as on trade. The interface between trade and environment would be better understood and would help in taking informed decisions faster implementation of policies and programmes. Moreover, the trade and environment issues would be better institutionalized than they are today

\*\* After obtaining the requisite clearances / approvals, The Water (P&CP) Cess (Amendment) Act has been passed in March, 2003. A notification for enforcement of the same has been passed in May, 2003

#### 41. CIVIL CONSTRUCTION UNIT

Civil Construction Unit (CCU), headed by Chief Engineer (Civil), was set up in the Ministry of Environment & Forest in August 1987 for taking up important works of the Ministry on priority basis, in pursuance of the Government decision that major scientific departments with a substantial annual civil works budget, should have a Civil Construction Unit. The technical posts are manned by officers drawn from CPWD.

The achievement during the IXth Plan and goals set for the X Plan are as under:-

(Rs. in Crores)

S. No	Programme	IXth Plan Outlay	Expdt.	Physical Target (no. of works)	Physical Achievement	Xth Plan outlay	Goals set for Xth (Plan) no. of works	Achievement (04/2002 to 10/2003)
1	Forestry & Wild life	16.20	18.40	98	54	52	114	26
2	Ecology & Environment	37.00	43.68	98	128	100	70	34
3	EAP(DFID aided Major Head'4406')	-	.50	-	-	6.05	1	-
4	North Eastern Areas)	-	-	-	-	-	-	-
	<b>Total</b>	<b>53.20</b>	<b>62.58</b>	<b>198</b>	<b>182</b>	<b>170.05</b>	<b>185</b>	<b>60</b>

#### 42. CENTRAL POLLUTION CONTROL BOARD

Central Pollution Control Board(CPCB) is an autonomous body under the aegis of the Ministry of Environment & Forest set up in September, 1974, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974. CPCB which serves as a technical wing of MoEF and provide technical assistance to the State Pollution Control Boards (SPCBs) / Pollution Control Committees (PCCs) for implementation of the provisions of various pollution control Acts. The CPCB also provides technical services to the MoEF for implementing the provisions of the Environment (Protection) Act, 1986.

The achievement during the IXth Plan and goals set for the X Plan are as under:-

(Rs. in Crores)

Programme	BE	Actual Expdt.	Physical Target	Physical Achievements	X <sup>th</sup> Plan Outlay	Goals for X <sup>th</sup> plan	Anticipated Achievements
<b>Prevention &amp; Control of Pollution Central Pollution Control Board</b>	32.00	36.96	*	**	100.00	***	Efforts will be made to implement the set goals, However the achievements of set goal depends upon the co-operation of various other Ministries & organization and local bodies

**\*Physical Targets**

To undertake survey and monitoring for assessment of water and air quality, under take the analysis of pollutants, organized training programs, develop standards & guidelines, compliance of industries to the prescribed standards, Inventorization of hazardous waste generating industries and organize mass awareness programs.

**\*\*Physical Achievements**

Monitored water quality of rivers, lakes and coastal water through SPCBs at 507 locations. Ambient Air Quality has been taken-up at 290 locations in 92 cities/towns. Monitoring of significant parameters like Benzene & Poly Aromatic -Hydrocarbons (PAHs) have been taken-up. Sanitation Status reports relating to class-I cities and class-II towns prepared. To strengthen the capabilities of SPCBs, regular Analytical Quality Control tests have been conducted. Standards have been notified for important categories of industries such as coal mines, textile, coke oven, integrated iron & steel, noise standards for D.G. Sets, primary water quality criteria for bathing waters & standards for firecrackers & battery manufacturing units. Various training programs were organized/ sponsored for officials of CPCB/ SPCBs/ PCCs. Regular follow-up were taken-up with respect to 17 categories of highly polluting industries and follow up actions were maintained with SPCBs in respect of implementation of action points in critically polluted areas for restoration of environmental quality. Preparation of Environmental Atlas for siting of industries in India has been completed. The performance of treatment technologies for cleaner production, Sewage treatment plants, risk assessment in chemical industries, control of noise level from gensets, root zone treatment technology for industrial and domestic effluents have been taken-up. CPCB participated in various exhibitions organized by different agencies. Several technical reports were brought out. Inventorization of hazardous waste generating industries was completed. Standards for leachate from hazardous waste dumpsite have been developed. Assessment of hazardous waste disposal facilities in industries and follow-ups of Committees constituted for hazardous wastes/chemicals were taken-up.

**\*\*\*Goals for X<sup>th</sup> plan**

Strengthening of National Ambient Air Quality Program (NAMP). Preparation of State wise Environmental Status Reports & action points for prevention of pollution in metro-cities. Strengthening of monitoring capabilities in CPCB as well as SPCBs/ PCCs. Ensuring installation pollution control devices in large & medium polluting units. Ensuring installation of pollution control devices in small-scale industries (SSIs) located in industrial estates are covered under CETPs. State specific programmes relating to prevention & control of pollution. Environmental Impact Studies on human health. Implementation of MSW rules, BMW rules PWM rules & waste batteries treatment & disposal facilities will be ensured.

**43. ASSISTANCE TO BOTANIC GARDENS**

The scheme was initiated during 1991-92 to promote ex-situ conservation and propagation of rare and endemic plant genetic resources in different regions of the country through a network of botanic gardens. Under this scheme, one time non-recurring financial assistance is provided to existing botanic gardens for strengthening their infrastructural facilities to facilities conservation and propagation of rare and endemic plant species of the region.

The achievement during the IXth Plan and goals set for the X Plan are as under:-

(Rs. in Crores)

Programme	IXth Plan Outlay	Expdt.	Physical Targets	Physical Achievements	Xth Plan Outlay	Goals set for Xth Plan
Assistance for Regional Botanical Gardens	5.00	5.45	To provide one time financial assistance to about 50 botanical gardens for improving their infrastructural facilities to facilitate ex-situ conservation of rare and endangered plant species.	93 Botanical Gardens were provided financial support	15.00	To provide one-time financial assistance to existing as well as new botanical gardens for improving their infrastructural facilities ex-situ conservation of rare and

						endangered plants species.
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#### 44. RESEARCH AND ECOLOGICAL REGENERATION (R&D)

Ministry of Environment & Forests has been funding research in multi-disciplinary aspects of environmental and ecosystems protection, conservation and management at various universities, institutions of higher learning, national research institutes and non-governmental organisations. The primary objectives are to develop strategies, technologies and methodologies for better environment management and also create infrastructure and a pool of trained manpower to shoulder the responsibility of environment management in the country. Environmental research particularly aims at attempting solutions to the practical problems of resource management and provides necessary inputs for the twin objectives of conservation of natural resources and restoration of environmental quality.

The achievement during the IXth Plan and goals set for the X Plan are as under:-

(Rs. in Crores)					
Scheme / Activity	9 <sup>th</sup> Plan Outlay	Expdt.	Physical Target	Physical Achievement	X plan Outlay *
<b>RESEARCH &amp; DEVELOPMENT SCHEME</b>	17.00	17.00	Initiation of new projects: 175 Servicing of on-going projects: 745 [cumulative] Review & Monitoring of on-going projects: 745  Dissemination of research results: executive summaries of completed projects.	This is a continuing scheme. The objectives are promotion of research in multi-disciplinary aspects of environment protection, conservation and development with emphasis on capacity building. During the period 152 projects were initiated. A total of 754 projects were reviewed. Servicing of on-going projects: 801 [cumulative]. Executive summaries of completed projects was made available on the web site of the ministry under the title 'Research & Development Notes'	24.00

#### \* ACHIEVEMENTS DURING THE NINTH PLAN:

During the 9<sup>th</sup> Plan period (1997-2002) 152 new research Projects were launched and provided financial assistance under the above mentioned schemes. 134 research studies initiated during VIII and IX Plans were completed.

Total allocation for R&D was of Rs. 17.00 crores for the Ninth Plan (1997-2002) and an expenditure of Rs.17.00 crores has been incurred.

The basic approach during the 9<sup>th</sup> Plan had been to provide support to projects of applied value consistent with the broad framework of the constituent sub scheme. Under the Environment Research Programme, the thrust was on studies related to air and water quality, development of eco-friendly technologies for treatment of industrial effluents and resource recovery, instrumentation development, pollution problems related to groundwater, biodegradation of petroleum oils, heavy metals, waste recycling, detoxification of hazardous pollutants, social and ecological issues,

restoration of mine affected areas, aero- biopollution and human health, eco-friendly alternatives to chemical fertilizers and pesticides, etc. As a result of extensive research, four patents were secured, out of which two are being commercially exploited.

Under the Ecosystem Research Scheme, emphasis was laid on study of the ecology of important rare, endangered animals species like south Indian primates, monitor lizards germplasm collection, propagation and improvement of forest plants of Thar desert, studies on sea level rise, methane measurements in the country, studies on insect plant inter relationships in forestry ecosystems, vertebrate diversity on the Great Nicobar-Biosphere Reserve, man –wildlife interactions in protected areas, rare endemic avi-fauna of andaman & Nicobar Island, non-human primate of India, human nature interactions in and around National parks and Ethno biology etc.

In the Eastern and Western Ghats Research Scheme, the projects were supported on soil and water management impact of mining and environment, conservation of bio-diversity, impact of human activities and industrialization on local river eco-systems, sacred groves of Kerala and Maharashtra, effect of plantation crops and the soil erosion, rehabilitation of degraded areas, grasslands, tropical monotone flora of Eastern and Western Ghats with reference to its north temperate affinities, ecosystem analysis of Kodiyar forest, environmental impact of monoculture plantation, study on the flora and vegetation of Kolli hills, ecology of mammalian avifauna resources of Eastern Ghats, development and management of hamlets in the Eastern Ghats, edible mushrooms of Western Ghats, impact of tourism, waste recycling (raw coir pith), reproductive biology of endemic palms, augmenting natural and artificial regeneration of sandal in south Kannada, bauxite mining, impact of effluent discharge from aqua-culture ponds on environment and so on.

#### 45. G.B. PANT INSTITUTE OF HIMALAYAN ENVIRONMENT & DEVELOPMENT

G.B. Pant Institute of Himalayan Environment & Development, Kosi-Katarmal, Almora was established during Pt. Pant's birth centenary year in August 1988, as an autonomous Institute of the Ministry of Environment & Forests. The Institute is identified as a focal agency to advance scientific knowledge, to evolve integrated management strategies, to show their efficacy for conservation of natural resources, and to ensure environmentally sound-sustainable development in the entire Indian Himalayan region. The Institute has also established linkages with National and International organizations committed to environment and development linked issues in the Mountain Regions.

(Rs. in Crores)

Programme	9th Plan Outlay	Expdt.	Physical Target	Achievement
	B.E.			
G.B. Pant Institute of Himalayan Environment & Development	30.93	26.40	Initiation of focused and priority R&D programmes in identified areas.  Construction of building complex at Katarmal (HQs) and initiation of construction at Kullu (HP) and Panthang (Sikkim).	Seven core programme were fully operational. A number of R&D programmes were initiated through these 7 Cores of the Institute and some of these were completed.  Building complex at the HQs were completed, (including Dispensary & School). Works at Kullu & Panthang were also completed and campus at Kullu is fully functional.

Integrated Action Oriented Ecodevelopment Research Programme (IERP) for the Himalayan Region.			To support location specific activities throughout the Indian Himalayan Region.	Fifty nine (R&D) projects were sanctioned to the various grantee organizations working in the Indian Himalayan region. These projects were executed in 10 Himalayan states of the country. Nine R&D projects were completed in all the respects during the 9 <sup>th</sup> plan period.
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## II-B Outlay for the X<sup>th</sup> Plan

(Rs. in crore)			
Programme	X <sup>th</sup> Plan Outlay Proposed	Goals set for X <sup>th</sup> Plan	Remarks
G.B. Pant Institute of Himalayan Environment & Development	35.00	<p>1. Strengthening of seven R&amp;D Core Programmes initiated in the preceding plan period at the HQs and through 4 units. Facilities and activities, which need to be initiated, include edition/ publication/ translation/ Hindi Rajbhasa cell, planning &amp; coordination cell, establishments of additional Units.</p> <p>Documentation of traditional technologies and cultural practices from the Himalayan Region need to be strengthened.</p> <p>2. Strengthening of infrastructural facilities in existing campuses of the institute at Kullu &amp; Gangtok &amp; H.Q. at Katarmal, Almora.</p>	<p>1. Programmes approved by the Science Advisory Committee and Board of Governors of the Institute.</p> <p>2. Targets will be achieved within the plan period.</p>
Integrated Action Oriented Eco Development Research Programme (IERP) for the Himalayan Region		Continuation of support to ongoing R&D projects and initiation of new location specific projects throughout Indian Himalayan Region.	All ongoing projects would be completed during the Plan period and several new projects for location specific activities would be initiated. Dissemination of findings will also be augmented.

## 46. HAZARDOUS SUBSTANCES MANAGEMENT

Hazardous Substances Management Scheme deals with management of chemical emergencies and hazardous substances in the country. The activities are carried out under three thrust areas i.e. Chemical Safety, Sound Management of Hazardous Wastes and Municipal Solid Wastes. The following Rules have been notified so far to ensure environmentally sound management of hazardous substances and wastes in the country;

- Manufacture, Use, Import, Export and Storage of Hazardous Micro-organisms and Genetically Engineered Organisms or Cells Rules 1989
- Manufacture, Storage and Import of Hazardous Chemicals Rules 1989/2000

- Hazardous Waste (Management & Handling) Rules 1989/2000/2003;
- The Public Liability Insurance Act, 1995
- The Chemical Accidents (Emergency Planning, Preparedness & Response) Rules 1996
- Biomedical Wastes (Management & Handling ) Rules 1998/2000/2003;
- Utilization of Flyash Notification 1999/2003
- Recycled Plastic (Manufacture & Usage) Rules 1999/2003
- Municipal Solid Waste (Management & Handling) Rules 2000;
- Batteries (Management & Handling) Rules 2001

These Rules are being modified/amended from time to time.

The three International Conventions namely the Basel Convention on the Control of Trans-boundary Movement of Hazardous Wastes and their Disposal, the Rotterdam Convention on the Prior Informed Consent (PIC) Procedure for Certain Hazardous Chemicals and Pesticides in International Trade and the Stockholm Convention on Persistent Organic Pollutants (POPs) are also dealt with under the Scheme.

The achievement during the IXth Plan and goals set for the X Plan are as under:-

							(Rs. in crores)
Programme	IXth Plan Outlay	Expendt	Physical target	Physical Achievements	Xth Plan outlay	Goals set for Xth Plan	Achievements
Hazardous Substances Management	22.00	13.94	**	***	70.00	****	##

**\*\* Physical Targets for IXth Plan**

- Strengthening of HSM structure in the States
- Accident, Prevention and Emergency preparedness
- Crisis Management during chemical accidents
- Notification of new regulations & amendment of existing ones as and when necessary
- Implementation of the various notified Rules.
- Identification of site, site remediation and establishment of disposal facilities for hazardous wastes including biomedical wastes
- Management of Municipal Solid Wastes
- Capacity building, strengthening of infrastructure and training of personnel in SPCBs/PCC
- Creation of awareness among all stakeholders about the various Rules and Regulations relating to hazardous substances management

**\*\*\* Achievements of IXth Plan**

- HSM Structures created in all the States and are being strengthened regularly.
- Off-site emergency plans prepared in 12 districts

- Central Crisis Group and Coordination Committee constituted and meetings held regularly
- New Rules/Amendment Rules brought out for management & handling of specific wastes such as biomedical wastes, lead acid batteries, fly ash, recycled plastics, municipal solid waste etc.
- Sites for setting up common facilities for treatment, storage and disposal of hazardous wastes (TSDF) have been identified in several States.
- Financial assistance provided for establishment of 2 TSDFs – one in Trans-Thane Creek (TTC), Maharashtra and the other in Hyderabad, Andhra Pradesh.
- A new Registration Scheme initiated for recycling/reprocessing used/waste oil, used lead acid batteries and other non-ferrous metal wastes in an environmentally sound manner.
- Registration granted to 119 units recycling/reprocessing hazardous wastes.
- Financial assistance provided to SPCBs/PCCs for better implementation of the various Rules relating to hazardous substances management.

#### \*\*\*\* Goals for Xth Plan

- Continuation of Hazard Analysis and preparation of off-site plans (including mock-drills, crisis alert system etc.)
- Setting up of Emergency Response Centres as per modifications.
- Providing support to Poison Control Centres.
- Preparation of National & State Inventories on hazardous wastes
- Setting up of common facilities for Transport, Storage and Disposal of Hazardous Wastes (TSDF)
- Inventorization of illegal dump sites & preparation of remediation plans for the same
- Harmonization of hazardous wastes in the EXIM Policy
- Banning the import & export of hazardous wastes listed in Annexe 8 of the Basel Convention.
- Setting up of Demonstration Plants for Management of Municipal Solid Wastes including Plastic Wastes.
- Projects on Fly-ash utilization.
- Strengthening of SPCBs/PCCs for better implementation of various Rules relating to HSM.
- Continuation of on-going projects and studies on the 3 identified thrust areas as well as initiation of new need based studies.
- Organization of training programmes and workshops to build capacity and to disseminate information about various Rules and Amendments to concerned stake-holders.
- Fulfilling of national obligations under the 3 international conventions handled by the Division.
- Strict and effective implementation of the various Rules on hazardous substances management notified and amended from time to time.
- Preparation of guidelines/guidance documents on identified thrust areas
- Implementation of the directions of the Supreme Court on hazardous waste management.

#### ## Achievements of X Plan (April 2002 to 31.10.2003)

- Preparation of Off-site plans for new industrial pockets undertaken.
- Final report on remediation /reclamation of contaminated areas in Bichhri, Rajasthan received.
- Training programmes /workshops supported under chemical safety & emergency planning and management of hazardous wastes, biomedical wastes & municipal solid wastes.
- Grants provided to 5 TSDFs- one at Andhra Pradesh, two in Maharashtra & 2 in Gujarat.
- TSDF proposals from Karnataka, T.N & W.B. under examination.
- Action initiated for setting up a combined TSDF for Haryana, NCT of Delhi & 5 districts of Western U.P.
- Final report on harmonization of hazardous wastes with the EXIM Policy of the country received and being examined.
- Registration Scheme transferred to CPCB.
- Hazardous Wastes (Management & Handling) Amendment Rules 2003 notified on 20<sup>th</sup> May 2003.
- Recycled Plastics (Manufacture & Usage) Amendment Rules notified on 17<sup>th</sup> June, 2003.
- The Fly ash Amendment Notification issued on 27<sup>th</sup> August, 2003.

- The Bio Medical Wastes (Management & Handling) Amendment Rules, notified on 17<sup>th</sup> September, 2003.
- Studies on measurement of dioxins from incinerators of bio-medical waste management facility and plastic waste management being initiated.
- Proposals for setting up of demonstration plants for management of municipal solid waste being examined.
- The project titled “Preliminary Assessment to identify the requirements for developing a National Implementation Plan in India as a first step to implement the Stockholm Convention on POPs” under implementation with support from GEF.
- Regular participation in the various Technical Meetings of the Basel, POP & PIC Conventions & follow-up action continued.
- A Monitoring Committee constituted to oversee that the orders of the Supreme Court in WP657/95 are implemented in time.

#### 47. BIODIVERSITY CONSERVATION

The matters concerning Conservation of Biological Diversity, its sustainable use and fair and equitable sharing of benefits arising out of the use of biological resources and knowledge are dealt under the Biological Diversity Conservation Scheme. Under the scheme, a comprehensive project for preparation of National Biodiversity Strategy and Action Plan(NBSAP) was launched aimed at producing a series of planning documents relating to ecological security and livelihood of people most dependent on natural resources. In addition, Matters relating to Convention on Biological Diversity, Bio-safety and Legislation are also dealt under the scheme.

A technical policy core group set up under NBSAP project has prepared the draft of the National Plan. The Biological Diversity Act, 2002 was passed by the Parliament and got accent of the President. The Act provides for establishment of National Biodiversity Authority, State Biodiversity Boards and Local level Biodiversity Management Committees. The **National Biodiversity Authority** has already been established at Chennai. The notification bringing selected sections of the Act into force has been issued on 1<sup>st</sup> Oct,2003.

The achievement during the IXth Plan and goals set for the X Plan are as under:-

(Rs. in Crores)							
Programme	IXth Plan outlay	Expdt.	Physical target	Physical Achievements	Xth Plan outlay	Goals set for Xth Plan	Achievements.
Bio-diversity Conservation	6.00	2.88	*	**	12.00	***	****

##### \* Physical Targets

- To facilitate implementation of National Action Plan on biodiversity.
- Formulation of legislation on biodiversity.
- Implementation of Cartagena Biosafety Protocol and
- Genetic Engineering Approval Committee.

##### \*\* Physical Achievements.

Adopting a consultative process with the stakeholders, a National Policy and Action Strategy on Biological Diversity has been drawn up as a macro-level statement of strategies, gaps and further actions needed for conservation, sustainable use and strategies and realization of actual and potential value of biological diversity.

The NBSAP project undertook assessment and stocktaking of biodiversity related information at state level including distribution of endemic and endangered species and site specific threats and pressures.

These detailed State level action plans have been consolidated and a national level action plan has been developed.

The legislation passed by Parliament, primarily addresses the issues concerning access to genetic resources and associated knowledge by foreign individuals, institutions or companies, and equitable sharing of Biodiversity.

The Cartagena Protocol on Biosafety, the first international regulatory framework for safe transfer, handling and use of living Modified Organisms ( LMOs) was negotiated under the aegis of the Convention on the Convention on Biological Diversity. The Protocol seeks to protect biological diversity from the potential risks posed by living modified organisms resulting from modern biotechnology. The protocol was adopted on 29<sup>th</sup> January, 2000. The protocol has been signed by 103 countries ( except USA). India has acceded to the Biosafety Protocol on 17<sup>th</sup> January, 2003. The Protocol has come into force on the 11<sup>th</sup> September, 2003. The mandate of the Genetic Engineering Approval Committee ( GEAC) constituted under Rules for the Manufacture, Use, Import, Export and Storage of Hazardous Microorganisms Genetically Engineered Organisms or Cells 1989 issued by the Ministry of Environment and Forests under the Environment ( Protection) Act, 1986, is to approve large scale trials and release of recombinant products. In recent past, research on recombinant products in India has increased manifold.

**\*\*\* Goals set for X plan.**

- Enactment and implementation of the biodiversity legislation, including preparation of People's Biodiversity Registers.
- Preparation of NBSAP final project document.
- Implementation of action plan on biodiversity and internalization of biodiversity concerns in sectoral and cross-sectoral programmes.
- Implementation of obligations under Cartagena Biosafety Protocol.
- Implementation of a Biosafety regulatory framework in the country, including matters related to GEAC.
- Conservation of medicinal plants.
- Conservation and management of sacred groves.
- Conservation of coastal and marine biodiversity, including mangroves and coral reefs.

**\*\*\* Achievements of Xth Plan.**

- Both the Houses of Parliament passed the Biological Diversity Bill, 2002 and Hon'ble President accented the Bill. The Biological Diversity Act, 2002 has also been promulgated through a Gazette Notification.
- Under the NBSAP project, action plans at state/Union territory level, sub-state level eco-regional level &, thematic level have been prepared. Draft of the National Action Plan has been duly prepared and circulated for comments.
- Cabinet approval for India's ratification of the Cartagena Protocol on Biosafety.
- Conditional approval for release of India's first transgenic crop – Bt Cotton, into environment. Implementation of these schemes is underway.

**48. CONSERVATION AND MANAGEMENT OF WETLANDS, MANGROVES AND CORAL REEFS**

The Scheme on Conservation and Management of Mangroves and Coral Reefs was initiated in 1986 with the objectives of conservation and protection of the Mangrove Eco-system from further degradation; afforestation of degraded Mangroves areas; Maintenance of genetic diversity especially of the threatened and endemic species and creation of awareness among the people on importance of Mangrove Ecosystem and the need for conservation. The achievement of the scheme during the 9<sup>th</sup> Plan and goals set for 10<sup>th</sup> Plan are given below:

(Rs. in Crores)

Scheme	9 <sup>th</sup> Plan Outlay	Exp.	Physical targets	Physical achievements	Xth Plan outlay	Goals set for Xth Plan	Achievements
<b>Conservation &amp; management of Wetlands</b>	14.00	13.00	Implementation of management action plan (MAP) of 20 identified wetlands	Implemented MAPs of 18 wetlands.	30.00	Implementation of MAPs for identified wetlands and sanctioning of research projects	Implemented Management Action Plans (MAPs) on 20 wetlands
<b>Conservation &amp; management of mangroves &amp; corals</b>	14.00	13.18	Implementation of management action plan (MAP) of identified mangroves & coral reef areas	Implemented MAPs of 24 mangrove areas & 4 coral reef areas.	24.00	Implementation of MAPs for identified mangroves & coral reef areas and sanctioning of research projects	Implemented Management Action Plans (MAPs) on 20 mangroves & 2 coral reef areas

#### **Achievements :**

##### Wetlands :

- i) A Directory of Wetlands has been prepared indicating 2107 natural wetlands and 65253 man made wetlands, occupying an area of 4.1 million hectares.
- ii) A country wide survey and mapping of wetlands has been carried out using Remote Sensing Technology.
- iii) Information on the status of 183 wetlands has been compiled which are considered as Wetlands of national/International importance.
- iv) The guidelines for the preparation of management action plans have been formulated which include components such as protection, Catchment area treatment, sustainable fisheries development, wildlife conservation, pollution control, weed control, siltation control and generating awareness about values and functions of wetlands.
- v) Management Action Plans have been prepared for 19 out of 20 identified wetlands which are at the various stages of implementation.
- vi) Catchment area, which controls the ecological functioning of water bodies has been identified as a key component.
- vii) Research projects have been supported to provide technical and scientific inputs to address the problem of wetland conservation.
- viii) State level Steering Committees have been constituted for the formulation and implementation of Management Action Plans for identified wetlands. At the apex, the National Committee advises the Government on policy, planning and implementation of the programme.
- ix) Wetland Authorities have been set up in some States, viz., Loktak Development Authority in Manipur, the Chilka Development Authority in Orissa and the Lakes and Waterways Authority in Jammu and Kashmir.

- x) Nineteen sites, viz., Chilka (Orissa), Keoladeo National Park and Sambhar (Rajasthan), Wullar and Tso Morari (J&K), Loktak (Manipur), Harike, Kanjli and Ropar (Punjab), Pong Dam (H.P.), Ashtamudi, Sasthamkotta & Vembanad-kol (Kerala), Kolleru (A.P.), Bhoj (M.P.), Deepar Beel (Assam), Pt. Calimer (T.N.), East Calcutta (W. Bengal) and Bhitarkanika (Orissa) have been designated as Ramsar sites.
- xi) Ramsar Conservation Award has been given to Chilka Development Authority in India for ecological intervention of Chilka lake. This is for the first time that any Asian country has been given such award.

### **Mangroves & Corals**

- The Ministry provides grants to the State Government/UT on an annual basis both for plantation of mangroves and rehabilitation of degraded mangrove areas.
- During the 10<sup>th</sup> Five Year Plan, an outlay of Rs. 24 crores has been made for conservation and management of mangroves and coral reefs in the country.
- 33 mangrove and 4 coral reefs areas in the country have been identified for intensive conservation and management.
- Protection measures for mangroves have been intensified.
- During COP-8, the Department of Posts in collaboration with MOEF brought out four commemorative stamps and a first day cover.
- Displaying the beauty and grandeur of mangroves, Status of Mangroves in the country have been reviewed and publication is underway.
- The mangroves in India comprise 69 species under 42 genera and 28 families. India is home to some of the best mangroves in the world..
- The Ministry has established a National Mangrove Genetic Resources Centre in Orissa.
- Two mangrove species are endemic to India. One species is Rhizophora annamalayana, occurring in Pichavaram, Tamil Nadu. Another species is Heritiera kanikensis that exists only in Bhitarkanika of Orissa.
- Sunderbans (West Bengal) have been included in the World List of Biosphere Reserves by UNESCO. They represent the largest stretch of mangroves in the country.

#### 49. BIOSPHERE RESERVE

The scheme on Biosphere Reserve was initiated in 1986 for in-situ conservation of representative ecosystem of major bio-geographic zone of global importance. Sustainable development, protection research, monitoring, education, training and information exchange are major components of the scheme. The 13 Biosphere Reserves designated so far in the State of Kerala, Karnataka, Tamil Nadu, Uttar Pradesh, Meghalaya, Andaman & Nicobar, Assam, West Bengal, Orissa, Arunachal Pradesh, Madhya Pradesh and Sikkim. Central assistance is provided under central sector scheme to the State Governments for implementation of approval items of activities. Research projects are supported to understand ecosystem functions and structure.

The achievement of the scheme during the 9<sup>th</sup> Plan and goals set for 10<sup>th</sup> Plan are given below:

(Rs. in Crores)

Programme	IXth Plan Outlay	Exp.	Physical targets	Physical Achievements	Xth Plan Outlay	Goals set for Xth Plan
Biosphere Reserve	20.00	21.41	Funding to State Governments of items of activities in 13 Biosphere Reserve and initiation of new research projects in those reserves.	Proposal submitted by the State Govts. Were funded for approved items of activities in 13 Biosphere Reserve. 58 Research projects were also funded.	35.00	To designate 3 new sites as Biosphere Reserve and bring existing as well as new BRs on world network of BRs

#### 50. INTERNATIONAL COOPERATION

The Ministry of Environment & Forests is the nodal agency in the Government of India for United Nations Environment Program (UNEP), South Asia Cooperative Environment Program (SACEP), International Centre for Integrated Mountain Development (ICIMOD), and the International Union for Conservation of Nature and Natural Resources (IUCN). Annual financial contributions are made to these organizations. The Ministry also functions as the nodal agency for participation in international agreements such as the Convention on Wetlands, and the Basel Convention on Transboundary Movement of Hazardous Substances, Convention on Biological Diversity, Framework Convention on Climate Change, Montreal Protocol on Substances that deplete the Ozone Layer and the Convention to combat Desertification, etc.

Within the Ministry, IC&SD Division is a functional window for all the international issues, such as the above and others such as Bilateral Programs, training abroad, National Environment Council (NEC), matters relating to international regional bodies like SAARC, SACEP, EU etc. and projects under Global Environment Facility (GEF) and Government of India/UNDP CCF-I Programme on Environment.

The achievement of the scheme during the 9<sup>th</sup> Plan and goals set for 10<sup>th</sup> Plan are given below:

(Rs. in crores)

Programme	IXth Plan Outlay	Expdt.	Physical Targets	Physical Achievements	Xth Plan Outlay	Goals set for X Plan	Achievements
<b>International Cooperation</b>	31.00	29.40	Existing activities including contributions to international organisations and participation various international meetings to continue. Implementation of externally aided projects funded by ICEF, UNDP/ Government of India CCF Programme.	All the activities were implemented as per schedule.	57.00	Existing activities and contributions to international organisations to continue. Implementation of continuing and new externally aided projects.	All the activities have so far been implemented as per schedule.

#### 51. ADAPTATION & CAPACITY BUILDING PROJECT ON CLIMATE CHANGE

This scheme was initiated during the year 2002-03. India hosted the Eight Conference of Parties to the United Nations Framework Convention on Climate Change from 23<sup>rd</sup> October to 1<sup>st</sup> November, 2002 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.

(Rs. in crores)

Programme	X Plan Outlay	Goals set for the X Plan	Achievements
<b>Adaptation &amp; Capacity Building Project on Climate Change</b>	<b>30.00</b>		
		Organisation of COP-8	COP-8 organised during 25 <sup>th</sup> October – 1 <sup>st</sup> November, 2002, was a big success. More than 4000 delegates from all over the world attended the Conference
		Activities relating to adaptation to climate change	Workshops were organised

		Capacity building at appropriate levels for taking climate change considerations in social, economic and development planning	
		Impact assessment including impacts on food and water resources, eco-system and bio-diversity, human settlements and human health	
		Promotion of scientific and technological research and systematic observation with the view to furthering understanding of climate change	Publications were brought out on the subject
		Education, training and public awareness	A Website on 'Climate Change' was launched. Climate Change Film prepared / shown
		Enhancement of international co-operation in pursuance of the objectives of the United Nations Framework Convention on Climate Change	India's position on 'Climate Change' was consolidated

## 52. ESTABLISHMENT OF ENVIRONMENT AUTHORITIES, COMMISSIONS AND TRIBUNALS

This is a continuing scheme, instituted after the enactment of National Environment Tribunal Act in 1995. The scheme could not be operated because of the Act could not be put into force. It is expected that the scheme will be operationalised early. In the first phase, the Principal Bench of the Tribunal would be set up at New Delhi. Thereafter, progressively other Benches of the Tribunal would be set up. The targets/achievements for 9<sup>th</sup> Plan and goals set for 10<sup>th</sup> Plan are given below:

(Rs. in crores)

Programme	IX Plan outlay	Expenditure	Physical Target	Physical Achievement	Xth Plan outlay	Goals set for Xth Plan	Achievements
NEAA  Loss of Ecology (Prevention & Payments of Compensation) Authority for Tamil Nadu  Environment Pollution (Prevention & Control) Authority for NCR & other	13.00	12.76	*	**	15.00 for all the Env. Authorities	Nil as the Authorities have to take action as per their terms of reference	All the Authorities have completed the work as mentioned in the terms of reference

Authorities							
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**\*Physical Target** :NEAA has been set up under NEAA Act 1997 to hear appeals. Other two Authorities have been set as per the directions of Hon'ble Supreme Court.

**\*\*Physical Achievement** : All the environmental Authorities are required to take action as per their terms of reference.

The NEAA is a statutory judicial Authority and the other two Authorities have also been set up as per the directions of Hon'ble Supreme Court and, therefore, do not operate any programme nor implement any scheme. Hence, the information on the review of IX Plan may be treated as Nil.

**53. INDUSTRIAL POLLUTION CONTROL PROJECTS:  
(EXTERNALLY AIDED SCHEMES)**

**WORLD BANK AIDED INDUSTRIAL POLLUTION PREVENTION PROJECT**

The main objectives of the scheme are to promote cost-effective pollution abatement from industrial sources. The Project focused on the most pollution industrial sectors as defined by GOI ( 17 industrial sub-sectors) and comprised of three components, viz. (i) industrial (ii) Investment (iii) Technical Assistance. Under this scheme, funds released by GOI were reimbursed by the World Bank. The participating States under this Scheme were – Andhra Pradesh, Gujarat, Karnataka, Rajasthan and Madhya Pradesh (including Chattishgarh). This Scheme started in 1995 and closed on 30<sup>th</sup> November, 2002. The residual activities of the Scheme have been included in the World Bank aided EMCBTA Project.

The targets/achievements for 9<sup>th</sup> Plan and goals set for 10<sup>th</sup> Plan are given below:

Programme	IX Plan Outlay	Expdt.	Physical Targets	Physical Achievements	X Plan Outlay	(Rs. in crores)	
						Goals set for X Plan	Physical Achievements
<b>World Bank aided Industrial Pollution Control Project</b>	96.00	100.76	%	#	10.00	@	\$
<b>a) Industrial Pollution Control Project (Phase-I)</b>							
<b>b) Industrial Pollution Prevention Project (Phase-II)</b>							

**% Physical Targets**

(a) Industrial Pollution Control Project (Phase-I)

- Procurement of equipment for four SPCBs, viz., U.P., T.N., Gujarat and Maharashtra
- Construction of labs for four SPCBs
- Training for SPCB personnel
- Construction of CETPs
- Award of Demonstration Projects

- Award of projects under the TA component

(b) Industrial Pollution Prevention Project (Phase-II)

- Procurement of equipment for 5 SPCBs, viz., Andhra Pradesh, Karnataka, M.P., Rajasthan and Chhattisgarh
- Provision of facilities for the labs in the SPCBs of the five States mentioned above
- Imparting of training to the personnel of PCBs
- Provision of funds to industries for waste water recycling projects
- Provision of funds to Gujarat for software procurement and training under the GIS and CIMS Project
- Identification of waste minimisation circle for large and small industries. Identification and training of Consultants

**# Physical Achievements**

(a) Industrial Pollution Control Project (Phase-I)

- Equipments have been procured under IFB 1A and B
- Laboratories have been constructed at UP, TN and Maharashtra SPCBs
- Training has been imparted to PCB personnel in the various subjects of Environment Management
- 83 CETPs have been constructed
- 12 Demonstration projects have been completed

(b) Industrial Pollution Prevention Project (Phase-II)

- Equipment worth Rs. 18.98 crores has been procured and installed at SPCBs
- At APPCB, the work has almost been completed. Work at other Central / Regional Labs could not be completed.
- The domestic component of the training programme has been successfully implemented and 439 officers of SPCBs, MoEF & CPCB have undergone training in a total of 18 modules. Modules for foreign training have been identified. These are proposed to be implemented under the World Bank aided EMCBTA Project.
- This work has been completed
- The work has already been completed.
- More than 100 Waste Minimisation Circles have been established in various industrial sectors

**@ Goals set for Xth Plan**

Procurement of laboratory & monitoring equipment by Project SPCBs through local shopping

Procurement of Field Sampling Vans for the Project SPCBs

Completion of overseas training programme & equipment specific training for SPCB officials

Finalisation of the Laboratory Guidance Manual in consultation with US (EPA) for adoption by SPCBs

Gap Analysis Study at the Project SPCBs to identify the gaps in the existing system and for implementation of the Laboratory Guidance Manual at the Project SPCBs

Organization of US-EPA Study Tour for improving the understanding of Sr. Scientific Officers regarding Laboratory Quality Systems

Organisation of Road Shows

Resource Optimization Study at Project SPCBs to develop a monitoring and enforcement strategy and associated plans at the Project SPCBs for optimal planning and utilization of resources

- \*Additional training and procurement of hardware under the GIS/MIS activity
- \*Geo-referencing of industries using GIS and locating them on maps
- \*Additional / ancillary activities pertaining to strengthening of laboratories, Environmental awareness etc.
- \*Implementation of Laboratory Guidance Manual
- \*Strengthening of Field Laboratories and provision of Field Equipment in r/o of APPCB, MPPCB and RSPCB
- \*Industry-Community Partnership
- \*Installation of Smart Card System at APPCB, MPPCB, RSPCB and CECB
- \*Creation of Hazardous Waste Cell at APPCB

#### **\$ Achievements during Xth Plan**

Equipment has been procured through local shopping

7 Sampling Vans each were procured for APPCB, KSPCB, MPPCB and 2 for Chhattisgarh ECB

Training modules for overseas training were identified. However, the same could not be implemented for want of time as IPPP closed on 30.11.2002. The modules are proposed to be implemented under the World Bank aided 'Environment Management Capacity Building Technical Assistance Project'.

This was carried out satisfactorily

The Study was conducted satisfactorily

Senior Scientists of this Ministry, CPCB/SPCBs were sent on a Study Tour to US (EPA) laboratories and to attend a workshop on 'Laboratory Quality Systems' in USA to know about the functioning of labs there

Road Shows were organised by KSPCB to enable exchange of information for other SPCBs

The Study was initiated in September, 2002. However, due to shortage of time, the Study could not be completed. It is proposed to complete the study under the on-going World Bank aided EMCBTA Project.

\*These activities which were to be taken up only if the 'Industrial Pollution Prevention Project' got an extension for a year beyond 30.11.2002, could be initiated as IPPP closed on 30.11.2002. The residual activities of Industrial Pollution Prevention Project have been included in the World Bank aided EMCBTA Project.

#### **54. COMMON EFFLUENT TREATMENT PLANTS (CETPs)**

The concept of the Common Effluent Treatment arose in order to make a co-operative movement for the pollution control in small-scale industrial sectors. The main objective of the CETP was, therefore, to reduce the treatment cost to be borne by an individual member unit to a water conservation were prime objectives of the CETP. The Concept of Common Effluent Treatment Plant (CETP) was envisaged to treat the effluent emanating from the clusters of compatible small scale industries. It was also envisaged that burden of various Government authorities working for controlling pollution and monitoring of water pollution control could be reduced once the CETPs are implemented and commissioned.

This programme has been spread over to all the States in India. The financing pattern for the CETPs consists of 20% promoter's contribution and a grant from the remaining could be availed as a loan from the any financial institutions.

The CETPs are managed by a CETP Company, formed by the small-scale industrial units intending to construct a CETP. This company has various office bearers to supervise the operation and maintenance of CETP. The State Pollution Control Board makes periodical monitoring of the operation, maintenance as well as statutory requirement of the individual CETP so as to control pollution from the small scale industrial units.

The targets/achievements for 9<sup>th</sup> Plan and goals set for 10<sup>th</sup> Plan are given below:

(Rs. in Crores)

Programme	IXth Plan Outlay	Expenditure	Physical Target	Physical Achievements	Xth Plan Outlay	Goals set for Xth Plan	Achievements
<b>Common Effluent Treatment Plants</b>	4.50	1.50	Construction of CETPs in the Small Scale Industrial clusters	Since the World Bank Projects has been over and that the CETP component has to be funded out of GOI Budget, a new SFC has been prepared and approved during 2001-02. Therefore, Rs. 1.50 crores only could be utilised.	25.00	Construction of CETPs in the Small Scale Industrial clusters	Projects are being funded for construction of CETPs and controlling the pollution load.

## 55. REIMBURSEMENT OF WATER CESS

As per the provisions of the Scheme, various SPCBs/PCCs in the country deposit the water cess in the Consolidated Fund of India. As per the revised formula effective from 1.4.1998 of water cess reimbursement to SPCBs/UT PCCs, upto 80% of the cess amount collected by SPCBs/PCCs will be reimbursed to them in accordance with Section 8 of the Water Cess Act, 1977 for meeting their approved expenditure requirements. Of the Cess amount collected, upto 20% will remain with the Central Government for undertaking specific projects in any part of the country through the Central Pollution Control Board (CPCB) subject to approval by the Central Government.

(Rs. in Crores)

Programme	IXth Plan Outlay	Expdt.	Physical Target	Physical Achievements	Xth Plan Outlay	Goals set for Xth Plan
<b>Reimbursement of Water Cess</b>	Nil as it falls under Non-Plan.	Nil	Nil	Nil	Nil as it falls under Non-Plan.	Since the expenditure is being met from the Non-Plan budget and is made on the basis of the collection and deposit of water Cess in the Consolidated Fund of India, no

						outlay has been proposed for X Plan.
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## 56. TAJ PROTECTION MISSION

In compliance with the Supreme Court orders dated 4.9.1996 in the Writ Petition No. 13381/84, the Planning commission estimated (in consultation with the state Government) an amount of Rs. 600 crores on a 50:50 percent (Centre-State) matching basis to implement various schemes relating to protection of the Taj Mahal.

The Ministry of Environment and Forests has vide Notification S.O. No. 350(E) dated 17.5.1999 constituted an Authority known as the Taj Trapezium Zone Pollution (Prevention and Control) Authority for monitoring the implementation of various projects undertaken under Taj Protection Mission Scheme. A Mission Management Board under the Chairmanship of the Chief Secretary, Government of UP has also been constituted for overseeing the implementation, monitoring and reviewing of the various programmes/schemes formulated for the protection of the Taj Mahal. Schemes were submitted relating to uninterrupted power supply, augmentation of water supply, improvement of drainage and sanitation etc. in the context of environmental protection of the Taj Mahal.

Under the scheme Taj Protection Mission, 10 schemes for Rs. 222.21 crores were approved by EFC in its meeting held on 26.10.1998 and CCEA approved on 23.2.1999. In the second phase, six proposals were approved in the EFC meeting held on 13.2.2001 for a total cost of Rs. 220.1003 Crores. However CCEA approval was not taken as the Ministry reviewed the projects. In the third phase, seven projects were submitted by the Govt of UP. The draft EFC was prepared and circulated but the EFC could not be held as one of the projects went litigation in the Hon'ble Supreme Court.

The targets/achievements for 9<sup>th</sup> Plan and goals set for 10<sup>th</sup> Plan are given below:

(Rs. in crores)						
Programme	IXth Plan outlay	Expdt.	Physical targets	Physical Achievement	Xth Plan outlay	Goals set for Xth Plan
<b>Taj Protection Mission</b>	200.00	124.50	Ten schemes had been started under the Mission. Six additional projects have also been received from the State Govt. of UP and these are at an advance stage of approval by the Central Govt.	Schemes under the Taj Protection Mission are identified/prepared by the Govt. of UP.	170.00	To complete the on-going projects and to consider/approve seven new additional projects.

## 57. ALL INDIA COORDINATED PROJECT ON TAXONOMY (AICOPTAX)

A sound taxonomic knowledge base is a prerequisite for environmental assessment, ecological research, effective conservation, management and sustainable use of biological resources, and bio-prospecting. It is the tool by which components of biological diversity are identified and enumerated, and it therefore provides the basic knowledge underpinning efforts to conserve biological diversity, optimize the use of biological resources in a sustainable way, and thereby enhance the quality of life.

At this crucial juncture, when the need for a taxonomic stocktaking of the earth's biodiversity is becoming increasingly important and urgent, the taxonomic expertise is aging and declining in number,

both nationally and globally. This decline of taxonomic expertise is a critical problem that needs to be addressed urgently.

Against the above backdrop, the Ministry of Environment & Forests developed an All India Coordinated Project for Capacity Building in Taxonomy during the Ninth Plan.

The project comprised establishment of Centres for Research in identified priority gap areas (e.g. Virus, Bacteria, Microlepidoptera etc.) in the field of taxonomy, education and training (fellowships, scholarships, Chairs, Career Awards etc.) and strengthening of BSI and ZSI as the Coordinating Units.

The aim of the project was to encourage excellence in the field of taxonomy and motivate the experts to undertake work in hitherto neglected groups of organisms such as microbes, lower groups of plants, animals etc. Nine Centres for Research and two Centres for training and coordination were identified during the first phase. Simultaneously, steps were taken to strengthen Botanical Survey of India and Zoological Survey of India so that these organizations could actively participate in the taxonomic work.

The targets/achievements for 9<sup>th</sup> Plan and goals set for 10<sup>th</sup> Plan are given below:

(Rs.in crores)

Scheme	9 <sup>th</sup> Plan Outlay	Exp.	Physical targets	Physical achievements	Xth Plan outlay	Goals set for Xth Plan	Achievements (from 1.4.2002 till 31.10.03)
<b>AICOPTAX</b>	7.50	4.32	Establishment of coordinating and collaborating units in ten subjects	All the ten subjects were covered	10.00	Continuation of the existing coordinating units and collaborating units. Addition of four subjects.	The ongoing projects have been serviced.

#### **58. ENVIRONMENTAL MANAGEMENT CAPACITY BUILDING TECHNICAL ASSISTANCE PROJECT (WORLD BANK AIDED)**

A Development Credit Agreement was signed on 14<sup>th</sup> March, 1997, between the Government of India and the International Development Association to assist the former by strengthening environmental management capacity in selected areas at the National, State and local levels as well as the community level. The project is being implemented by the Ministry of Environment and Forests with the assistance of the Department of Ocean Development and the Government of Gujarat. The original outlay approved for the project by the World Bank was US \$ 61.48 million (Rs. 221.38 crores) comprising of IDA Credit of US \$ 50 million and Government of India contribution of US \$ 11.48 million. The project started in August 1997 and was scheduled to terminate on 30.06.2003. To achieve full objectives the project duration has been extended for one year upto 30.06.2004 as activities under some components are yet to be completed. The basic focus of the various sub-components included in the project is on building capacity in their respective areas for better /informed decision –making and monitoring and enforcement compliance of environmental policies and legislations. As per agreement, mid-term review of the project was completed in April, 2000, and it has resulted in final restructured outlay of \$ 29.62 million (Rs. 14062.01 lakhs) on

account of slow progress of some sub –components, cancellation of five existing components and inclusion of four new components according to the priorities of the Ministry of Environment and Forests.

The targets/achievements for 9<sup>th</sup> Plan and goals set for 10<sup>th</sup> Plan are given below:

(Rs. in Crores)

Name of the Activity	IXth Plan Outlay	Expdt.	Physical Target	Physical Achievement	Xth Plan Outlay	Goals for Xth Plan	Achievement
<b>ENVIRONMENTAL MANAGEMENT CAPACITY BUILDING TECHNICAL ASSISTANCE PROJEC</b>	100.00	73.00	*	**	48.98	***	****

**\* Physical Target**

The main targets were formulation of efficient research management plan, infusion of environmental concepts in school curriculum at middle level in eight states, strengthening of capacity for application of economic principles and tools to environmental management in India, to build legal capacity by way of trained staff in CPCB and MoEF, increase in use of environmentally benign mining techniques, improve planning for industrial growth through mapping of suitable and unsuitable sites, more reliable data on air pollution, prepare coastal and marine area management plans, review and develop industrial emission standards, preparation of Environmental Status Report for Gujarat to mitigate adverse environmental impacts/problems, improve process of environmental clearances of projects and create awareness in media about environmental issues.

**\*\* Physical achievements**

To achieve the objectives of the project aimed at strengthening environmental management for sustainable development of the country 90% equipment have been procured and installed, local and foreign training programmes in respective areas completed to the extent of 80 per cent of target, several reports are in the process of being finalized, infusion of environmental concepts in school curriculum in eight states has been introduced through revised text books, staff trained to better manage environmental issues, awareness on environmental issues among various sections of society created, website on data of environmental issues created, several maps on siting of industries published and activities under coastal management plan completed.

**\*\*\* Goals for Xth Plan**

State of-art-reports in identified thrust areas of research management to be prepared & printed, infusion of environmental concepts in school curriculum to be introduced in 10 more States, market based instruments studies to continue, website on environmental economics to be set up, linkage needs to be established between ENVIS nodes and the proposed State of Environment reports for States, the procedures and practices of Environmental Impact Clearance in India to be reviewed & prepare national guidance manual on Environmental Impact Assessment, awareness among media about environmental issues to be created by workshops, fellowships & editors conference, recommendations in mining sector to be implemented, local & foreign training on air quality monitoring, petrochemical plants, ENVIS, mining sector and environmental education to be completed, new training facility under zoning atlas to be set up & reports on emission of individual standards to be finalized including completion of remaining training programmes, equipment procurement and preparation of reports on different environmental issues.

#### **\*\*\*\* Achievements**

The present tenure of the project is upto 30-6-2004. Most of the objectives have been achieved so far through local and foreign training programmes completed, equipment purchased and reports prepared, monographs/books on environmental economics published, construction of training facility under Zoning Atlas started, Infusion of environmental concepts in school curriculum for 10 more States started, consultants for preparation of State-of –art reports in research thrust areas selected, identified, activities under ICMAM completed, work on creation of website for environmental economics completed, six recommendations for mining sector implemented, draft of case studies on law prepared, draft reports on projects under taken in Gujarat for cleaner production & sound environmental plans prepared, action plan for media training completed, contracts for review of procedures and practices for environmental impact assessment of projects extended for finalisation of reports; draft reports on industrial emission standards for pesticides, oil refineries and petrochemical plants prepared, Website have been setup on various aspects of environmental information, 85 Nodes setup under ENVIS.